Economics for Business

Revised edition relevant for 2005/2006 Computer Based Assessment

- Practice questions throughout
- Complete revision section

Helping you to pass your CIMA exam

2005/06 Edition

CERTIFICATE | MANAGERIAL | STRATEGIC
CIMA’S Official Study System
Computer based assessment

Certificate Level

Economics for Business

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Acknowledgements

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How to use your CIMA Study System

This Economics for Business Study System has been devised as a resource for students attempting to pass their CIMA computer based assessment; and provides:

- A detailed explanation of all syllabus areas;
- extensive ‘practical’ materials, including readings from relevant journals;
- generous question practice, together with full solutions;
- an exam preparation section, complete with exam standard questions and solutions.

This Study System has been designed with the needs of home-study and distance-learning candidates in mind. Such students require very full coverage of the syllabus topics, and also the facility to undertake extensive question practice. However, the Study System is also ideal for fully taught courses.

The main body of the text is divided into a number of chapters, each of which is organized on the following pattern:

- Detailed learning outcomes expected after your studies of the chapter are complete. You should assimilate these before beginning detailed work on the chapter, so that you can appreciate where your studies are leading.
- Step-by-step topic coverage. This is the heart of each chapter, containing detailed explanatory text supported where appropriate by worked examples and exercises. You should work carefully through this section, ensuring that you understand the material being explained and can tackle the examples and exercises successfully. Remember that in many cases knowledge is cumulative: if you fail to digest earlier material thoroughly, you may struggle to understand later chapters.
- Readings and activities. Most chapters are illustrated by more practical elements, such as relevant journal articles or other readings, together with comments and questions designed to stimulate discussion.
- **Question practice.** The test of how well you have learned the material is your ability to tackle exam-standard questions. Make a serious attempt at producing your own answers, but at this stage don’t be too concerned about attempting the questions in exam conditions. In particular, it is more important to absorb the material thoroughly by completing a full solution than to observe the time limits that would apply in the actual exam.
- **Solutions.** Avoid the temptation merely to ‘audit’ the solutions provided. It is an illusion to think that this provides the same benefits as you would gain from a serious attempt of your own. However, if you are struggling to get started on a question you should read the introductory guidance provided at the beginning of the solution, and then make your own attempt before referring back to the full solution.

Having worked through the chapters you are ready to begin your final preparations for the examination. The final section of this CIMA Study System provides you with the guidance you need. It includes the following features:

- A brief guide to revision technique.
- Guidance on how to tackle the assessment itself.
- A table mapping revision questions to the syllabus learning outcomes allowing you to quickly identify questions by subject area.
- Revision questions. These are of exam standard and should be tackled in exam conditions, especially as regards the time allocation.
- Solutions to the revision questions. As before, these indicate the length and the quality of solution that would be expected of a well-prepared candidate.
- Mock Assessments. You should plan to attempt these just before the date of the real exam. By this stage your revision should be complete and you should be able to attempt the mock paper in exam conditions.

If you work conscientiously through this CIMA Study System according to the guidelines above you will be giving yourself an excellent chance of exam success. Good luck with your studies!

**Guide to the Icons used within this Text**

- 📚 Key term or definition
- 📐 Equation to learn
- 🔍 Exam tip or topic likely to appear in the exam
- ⌚️ Exercise
- 🔴 Question
- ⬤ Solution
- 🚨 Comment or Note

**Study technique**

Passing exams is partly a matter of intellectual ability, but however accomplished you are in that respect you can improve your chances significantly by the use of appropriate study
and revision techniques. In this section we briefly outline some tips for effective study during the earlier stages of your approach to the exam. Later in the text we mention some techniques that you will find useful at the revision stage.

**Planning**

To begin with, formal planning is essential to get the best return from the time you spend studying. Estimate how much time in total you are going to need for each subject that you face. Remember that you need to allow time for revision as well as for initial study of the material. The amount of notional study time for any subject is the minimum estimated time that students will need to achieve the specified learning outcomes set out earlier in this chapter. This time includes all appropriate learning activities, e.g. face-to-face tuition, private study, directed home study, learning in the workplace, revision time, etc. You may find it helpful to read *Better exam results* by Sam Malone, CIMA Publishing, ISBN: 075066357X. This book will provide you with proven study techniques. Chapter by chapter it covers the building blocks of successful learning and examination techniques.

The notional study time for Foundation level *Economics for Business* is 130 hours. Note that the standard amount of notional learning hours attributed to one full-time academic year of approximately 30 weeks is 1,200 hours.

By way of example, the notional study time might be made up as follows:

<table>
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<th>Hours</th>
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<tr>
<td>Face-to-face study: up to</td>
</tr>
<tr>
<td>Personal study: up to</td>
</tr>
<tr>
<td>‘Other’ study, e.g. learning in the workplace, revision, etc.: up to</td>
</tr>
<tr>
<td>Total</td>
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</table>

Note that all study and learning-time recommendations should be used only as a guideline and are intended as minimum amounts. The amount of time recommended for face-to-face tuition, personal study and/or additional learning will vary according to the type of course undertaken, prior learning of the student, and the pace at which different students learn.

Now split your total time requirement over the weeks between now and the examination. This will give you an idea of how much time you need to devote to study each week. Remember to allow for holidays or other periods during which you will not be able to study (e.g. because of seasonal workloads).

With your study material before you, decide which chapters you are going to study in each week, and which weeks you will devote to revision and final question practice.

Prepare a written schedule summarizing the above – and stick to it!

The amount of space allocated to a topic in the study material is not a very good guide as to how long it will take you. For example, ‘Summarising and Analysing Data’ has a weight of 25 per cent in the syllabus and this is the best guide as to how long you should spend on it. It occupies 45 per cent of the main body of the text because it includes many tables and charts.
It is essential to know your syllabus. As your course progresses you will become more familiar with how long it takes to cover topics in sufficient depth. Your timetable may need to be adapted to allocate enough time for the whole syllabus.

**Tips for effective studying**

(1) Aim to find a quiet and undisturbed location for your study, and plan as far as possible to use the same period of time each day. Getting into a routine helps to avoid wasting time. Make sure that you have all the materials you need before you begin so as to minimise interruptions.

(2) Store all your materials in one place, so that you do not waste time searching for items around the house. If you have to pack everything away after each study period, keep them in a box, or even a suitcase, which will not be disturbed until the next time.

(3) Limit distractions. To make the most effective use of your study periods you should be able to apply total concentration, so turn off the TV, set your phones to message mode, and put up your ‘do not disturb’ sign.

(4) Your timetable will tell you which topic to study. However, before diving in and becoming engrossed in the finer points, make sure you have an overall picture of all the areas that need to be covered by the end of that session. After an hour, allow yourself a short break and move away from your books. With experience, you will learn to assess the pace you need to work at. You should also allow enough time to read relevant articles from newspapers and journals, which will supplement your knowledge and demonstrate a wider perspective.

(5) Work carefully through a chapter, making notes as you go. When you have covered a suitable amount of material, vary the pattern by attempting a practice question. Preparing an answer plan is a good habit to get into, while you are both studying and revising, and also in the examination room. It helps to impose a structure on your solutions, and avoids rambling. When you have finished your attempt, make notes of any mistakes you made, or any areas that you failed to cover or covered only skimpily.

(6) Make notes as you study, and discover the techniques that work best for you. Your notes may be in the form of lists, bullet points, diagrams, summaries, ‘mind maps’, or the written word, but remember that you will need to refer back to them at a later date, so they must be intelligible. If you are on a taught course, make sure you highlight any issues you would like to follow up with your lecturer.

(7) Organise your paperwork. There are now numerous paper storage systems available to ensure that all your notes, calculations and articles can be effectively filed and easily retrieved later.

**Computer-based assessment**

CIMA has introduced computer-based assessment (CBA) for all subjects at Certificate level. The website says:

Objective questions are used. The most common type is ‘multiple choice’, where you have to choose the correct answer from a list of possible answers, but there are a variety of other objective question types that can be used within the system. These include true/false questions, matching pairs of text and graphic, sequencing and ranking, labelling diagrams and single and multiple numeric entry.
Candidates answer the questions by either pointing and clicking the mouse, moving objects around the screen, typing numbers, or a combination of these responses. Try the online demo at http://www.cimaglobal.com to see how the technology works.

The CBA system can ensure that a wide range of the syllabus is assessed, as a pre-determined number of questions from each syllabus area (dependent upon the syllabus weighting for that particular area) are selected in each assessment.

In every chapter of this study system we have introduced these types of questions but obviously we have to label answers A, B, C, etc. rather than using click boxes. For convenience we have retained quite a lot of questions where an initial scenario leads to a number of sub-questions. There will be questions of this type in the CBA but they will rarely have more than three sub-questions. In all such cases examiners will ensure that the answer to one part does not hinge upon a prior answer.

There are two types of questions which were previously involved in objective testing in paper-based exams and which are not at present possible in a CBA. The actual drawing of graphs and charts is not yet possible. Equally there will be no questions calling for comments to be written by students. Charts and interpretations remain on many syllabi and will be examined at Certificate level but using other methods.

For further CBA practice, CIMA Publishing has produced CIMA Inter@ctive CD-ROMs for all certificate level subjects. These products use the same software as found in the real Computer-based assessment and are available at www.cimapublishing.com.

### Economics for Business and computer-based assessment

The examination for Economics for Business is a one hour computer based assessment comprising 40 compulsory questions, with one or more parts. Single part questions are generally worth 1-2 marks each, but two and three part questions may be worth 4 or 6 marks. There will be no choice and all questions should be attempted if time permits. CIMA are continuously developing the question styles within the CBA system and you are advised to try the on-line website demo, to both gain familiarity with assessment software and examine the latest style of questions being used.

### Additional Reading


### The Economics for Business syllabus

#### Syllabus overview

This syllabus is designed to enable students to acquire a knowledge and understanding of the fundamental economic concepts necessary for the work of the Chartered Management Accountant.
Aims
This syllabus aims to test student’s ability to:

- identify how a market economy function and the role of government within it;
- explain the economic environment within which businesses operate;
- identify the economic factors which influence the behaviour and performance of firms and industries;
- prepare the economic analysis that informs and guides the advice given to business decision-makers.

Assessment
The assessment is 60 minutes and comprises 40 compulsory questions with one or more parts. A varied range of objective test questions are used.

Learning outcomes and syllabus content

3a(i) The economy and the growth of economic welfare – 10%

Learning outcomes
On completion of their studies students should be able to:

- explain the principal issues related to economic welfare and its growth;
- explain the main trends in the rate and structure of economic growth in recent years;
- explain the central economic problem and the concepts of scarcity and opportunity cost;
- explain the main factors determining the rate of economic growth;
- explain the main elements of government policy towards economic growth.

Syllabus content

- The concept of economic welfare.
- Economic growth:trends in economic growth; factors in economic growth.
- Economic welfare and sustainable growth.
- Issues in economic growth and growth policy.

3a(ii) The market system and the competitive process – 40%

Learning outcomes
On completion of their studies students should be able to:

- explain the functioning of a market economy;
- explain how the price system works by applying appropriate economic concepts and principles;
explain and illustrate how product and factor markets operate;
apply basic economic analysis to explain economic and business issues;
explain the behaviour of business costs in both the short and long run;
explain the economic factors which affect the structure, behaviour and performance of individual businesses and industries;
analyse the process of competition in different market structures;
identify the public issues that are raised by business activity;
explain how governments might respond to the effects of business and the environment.

Syllabus content

- The business environment and the structure of economic activity.
- Business firms: legal, economic and organisational features; entrepreneurship and profit.
- Business functions: production and costs, finance and marketing.
- The market process: supply and demand and their determinants.
- The price mechanism: the demand and supply model and its applications.
- Forms of market structure: competition and economic welfare; competition policy; regulation and deregulation; the public sector and privatization.
- Business and the environment: externalities and public policy.

3a(iii) The macroeconomic framework – 30%

Learning outcomes

On completion of their studies students should be able to:

- identify the appropriate macroeconomic concepts to explain the measurement and determination of national income;
- explain macroeconomic phenomena by demonstrating a simple circular flow of income model;
- identify the main indicators of macroeconomic performance and demonstrate their significance;
- identify the main elements of the monetary and financial system;
- explain the importance of the monetary environment to the business sector;
- explain the economic role of government through fiscal and monetary policy and demonstrate the impact of such policies on the business sector;
- explain the nature of the trade cycle, its causes and consequences;
- explain the debates concerning the nature of the macroeconomy and appropriate government policy.

Syllabus content

- National income: its measurement and determination; the circular flow of income and a simple aggregate demand and supply model; unemployment and the price level.
- The monetary environment: inflation and the money supply; the banking and financial system; interest rates and monetary policy.
• The fiscal environment: taxation and public spending; the budget and government borrowing; demand management and supply-side policy.
• Macroeconomic stability: economic fluctuations and their causes; macroeconomic forecasting and stabilisation policy.

3a(iv) The open economy – 20%

Learning outcomes
On completion of their studies students should be able to:
• explain patterns of international trade and the sources of international specialization;
• identify the international movement of factors of production and the role of transnational companies in this process;
• identify and explain the concept and consequences of globalisation for businesses and national economies;
• explain the concept of the balance of payments and its determinants;
• distinguish between different exchange rate regimes and explain their implications for the business sector;
• identify the main elements of national policy with respect to external economic relations, especially in the context of regional trading blocs.

Syllabus content
• Patterns of international trade and trade policy; regional trading blocs; the globalisation of production.
• International factor movements; international capital markets; international investment flows; the movement of labour and technology; the nature and role of transnational companies.
• The balance of payments; structure and determinants of the balance of payments; foreign exchange markets and exchange rate regimes; European monetary union.
The Economy and the Growth of Economic Welfare

Learning Outcomes

This chapter introduces some key concepts in the study of economics. It begins with discussion of the allocation of scarce resources and the roles played by governments in their attempts to produce as much as possible for society.

It examines choices in the economy and how these choices are resolved. The concept of economic growth is looked at and an understanding is gained of economic welfare. Finally, the issue of sustainable economic welfare is developed.

After completing this chapter you should be able to explain:

- the principal issues related to economic welfare and growth;
- the main trends in the rate and structure of economic growth in recent years;
- the central economic problem and the concepts of scarcity and opportunity cost;
- the main factors determining the rate of economic growth;
- the main elements of government policy towards economic growth.

1.1 Scarce resources

1.1.1 Scarcity

To many people economics is about money. This is because money is used to value things. Most of the things are more accurately termed ‘goods’ and ‘services’ and they have a price, which shows what people are prepared to pay for the ownership of these goods and services.

The price, or exchange value, of a good/service will usually reflect the resources which are combined to produce it. These resources, such as land and labour, also have a price and this is largely determined by demand and supply factors. For example, coloured pencils are cheap because wood is in plentiful supply but quill pens are more expensive as there is a limited supply of raw materials required to produce them. Thus scarce resources usually command a high price. Sometimes, there are competing ends for which resources could be
used. If these ends are many and varied in importance and the means of achieving them are limited, then there is an economic problem. For example, wood can be used for a variety of products ranging from furniture to tent pegs, and someone has to decide which end will be satisfied through production.

The decision regarding how to use the wood will need to take into account people’s wants. If the demand for furniture is enormous and the demand for tent pegs is minuscule, it is likely that furniture will be produced.

Generally there are insufficient resources available to produce all the goods and services which people want. This relative scarcity of resources means that a choice has to be made.

When a choice arises, an alternative has to be given up. Thus, a producer might have to choose between using wood for furniture or tent pegs, because his resources are limited. Similarly, a consumer may have a limited amount of income and thus has to choose between two alternative products; for example a painting or a new garden mower, both valued at £400.

The sacrifice, when a choice is made, is termed the opportunity cost because it is the alternative forgone. Usually, the opportunity cost has a monetary value. However, it could be a choice over the use of time, for example, write a chapter of a book or play 36 holes of golf!

- Choice arises because of relative scarcity
- Opportunity cost is a measurement of the foregone alternative

### 1.1.2 The allocation of resources

The economic problem arises because people lack the resources to fulfil their many desires. At an individual level, a person may want an expensive car but does not have the earning power to be able to afford it. On a global level, the demands of the world population outstrip the available food supplies. The result in both cases is scarcity, which generally occurs because resources are limited.

It is interesting that products such as consumer durables are plentiful but scarce in an economic sense because people would like to have more than is available. Conversely, it may be that some resources are limited in supply but there is insufficient demand for them at the prevailing price, for example, tin in 1986. To an economist, such a resource would not be ‘scarce’, even though there are only finite amounts available. Most resources have to be bought and thus have a price. The owners of resources can command higher prices for their resources if they are scarce (e.g. world-class footballers being transferred for £10 million or more).

**Needs and wants**

*Needs* are the basic necessities of life which are indispensable, for example, food and water. However, *wants* are luxuries which people can live without, such as smoked salmon and Perrier water.

In modern societies, many basic needs such as food, clothing and housing are readily fulfilled. However, people’s wants tend to expand as they seek improved living standards. The luxuries of yesterday for the affluent become the necessities of today for the masses. Individual preferences and values mean that one person’s luxury is another person’s necessity. This expansion is encouraged by commercial advertising and skilful marketing. There is never enough to satisfy people’s wants, even though over time the quantity and quality of resources in the world may improve. Thus, satisfying human wants
becomes an impossible task. The result is that choices have to be made between competing ends.

Decisions have to be made on how to allocate the scarce resources between the competing needs. No decision on allocation is required if there is no choice. At an individual level a person who is single-minded in the pursuit of one goal may find his time and resources limited, but he will not have allocated them between different ends. Clearly, in an advanced economy decision-making is complex and involves millions of opportunity cost judgments.

- Scarcity of resources arises when available supply is insufficient to meet the expressed demand.

### 1.1.3 Economic statements

Economists play a major part in influencing economic policy. In order to consider this role, it is useful to distinguish between positive and normative statements.

A positive statement is a statement of fact. It may be right or wrong, but its accuracy can be tested by appealing to facts. 'If the government cuts taxes, consumer expenditure will rise' is an example of a positive statement.

A normative statement is a statement containing a value judgment. It states what should or should not happen. ‘One should tax the rich more than the poor’ is an example of a normative statement. It cannot be proved or disproved by an appeal to the facts.

Economists try to contribute in a positive way to matters of economic policy. They can say which of two policies is more likely to achieve a given aim, but they cannot, as economists, say whether the aims of the policy are desirable. They may hold personal views on the subject but this would reflect a normative judgment.

### 1.1.4 The role of government

The ways in which the allocation decisions are made depends upon the economic system used to resolve the economic problem of scarcity. The economic system used depends on the political system in a country and the political views of the prevailing government.

Usually three main types of economic system are identified: planned, market and mixed.

The label planned usually refers to an economy in which decisions as to resource allocation are made by a centralized body, rather than through the price mechanism. As the plans regarding production and distribution are determined by a powerful group who control the use of resources, the epithet command is also used to describe such an economy.

At the other extreme of the economic spectrum an economy may be free. In such a system the resources are allocated through market price, with the individuals as producers and consumers making their own economic decisions.

Between these two extremes, mixed economies can be located. In a mixed economy, some resources are allocated in a planned way and others in the market way. Furthermore, the distribution of the production may be both controlled and subject to market forces, for example, health provision by the state or by fee-paying.

This classification by resource allocation leads to the practical conclusion that all economies are mixed but to varying degrees. In the United States there is a small but important state sector. In the former USSR, the bulk of resource allocation was determined by the state but now, in Russia and the other independent states, there is a large and rapidly growing
market sector. Also, recent developments in China, which have seen an opening up of the economy to outsiders, confirm the trend towards the acceptance of a need for a market sector.

In mixed-market economics governments may wish to intervene in the economy in various ways. They may wish to influence the relative prices of goods and inputs, by taxing or subsidising them or by direct price controls. They can affect the pattern of production and consumption by direct provision, for example, defence and health, or by regulations prohibiting certain type of goods, such as illicit firearms or unsafe goods. They can influence relative incomes by the use of taxes and welfare payments. Finally, the government concerns itself with macroeconomic issues of unemployment, inflation, economic growth and the balance of payments.

The mixture in an economic system categorised by ownership is between a public sector and a private sector. The relative size of each sector is often determined by political considerations. However, the ultimate intention is to make the most efficient use of the resources available in order to improve the well-being of society. This usually means improvements in the standard of living.

1.1.5 Production decisions

In choosing between competing ends, several production decisions need to be made in all economic systems:

- For whom to produce?
  
  This decision will be determined by those with political power, and it therefore largely depends on the nature of the political system within which the economic system operates. For example, in a communist state, such as Cuba, the government dictates that production is organised for the equal benefit of all citizens. In contrast, in a liberal democracy with a capitalist-oriented economy, such as the United States, the driving force is profits. Consequently, production will be directed towards those who can afford to purchase output as this will be the most profitable for the individuals and groups with control over resources.

- What to produce?
  
  In a market economy the goods and services produced will be those which generate the greatest profit. Thus the American economy might produce a wide range of ostentatious luxury services, such as drive-in funeral parlours for the busy bereaved, which can be bought by the affluent few. However in economies where the profit motive is not dominant, for example Cuba, output will be more oriented towards producing basic merit goods, such as education to benefit all in society.

- Where to produce?
  
  In theory, goods and services are produced where the average cost of production per unit is at its lowest. However, practical considerations sometimes override this requirement and governments may interfere in decision-making. Generally, in an economy such as Cuba the state dictates where most production takes place, whereas in mixed and capitalist economies the owners of resources make such decisions.

- How to produce?
  
  Resources need utilizing in the most cost-efficient way. Businesses strive for the lowest unit cost in theory. They regularly appraise production methods and may vary the resource inputs in order to maximise output. This may mean the substitution of one resource for another, e.g. machines for people. Generally though, the resource of labour
is kept as fully employed as possible in most economic systems for political as much as economic reasons.

- **How to distribute?**
  
  The goods and services which are produced need sharing so that consumption can take place and wants are fulfilled. In most systems, the distribution of most goods and services is by price – those who cannot afford to pay go without. The price may be set by the state, in the command economy, or by the independent business, in the free-market approach.

  In most systems, some services are zero-priced. These services, such as defence, education and health, have a cost of production but for practical and political reasons they may be provided free at the point of consumption. Waiting lists and queues are instigated to efficiently ration the service and synchronise demand and supply, while attempting to provide for those in the greatest need first. A few goods may also be sold at zero-price, for example, contraceptives in an over-populated country.

  These production decisions which are made in order to resolve the economic problem are continual but it may be that certain goods are overproduced while simultaneously there is a shortage of others. The British stockpiles of grain which result from the EU’s common agricultural policy would be examples of the former, while long hospital waiting lists would illustrate the latter. Such a position would be irrational, as scarce resources are being used to produce goods which nobody wants. It would be inefficient, as people are employed to produce goods which are not being sold. Also, it would be unfair to those needing hospital care, which might otherwise be provided.

  However, it would be simplistic to assume that resources could easily be transferred from producing grain to providing healthcare. The composition of national output cannot be quickly adjusted to correct misallocation of resources. Nevertheless, over several years an economy may adapt. For example, Britain changed in the 1980s and 1990s away from manufacturing industries towards service sectors as manufacturing’s share of national output fell from 30 per cent to under 20 per cent, and this entailed a large shake-out of labour. Much of this labour remained unemployed and thus resources were wasted. Thus, in practice all economies operate beneath their maximum potential.

- In a market economy production decisions are driven by the profit motive.

### 1.1.6 Factors of production

The economic resources which are used in tackling the economic problem are referred to as factors of production. They can be categorised into:

- **natural resources**, that is vegetation, land, sea and naturally occurring liquids, gases and solids;
- **human resources**, that is people;
- **man-made resources**, that is capital goods, such as tools, machinery, factories, which have been produced so that other goods and services can be made.

These resources are usually reclassified by economists into four factors of production: land, labour, enterprise and capital.
**Land**

This specific resource is the term used to cover all natural resources. Early economists adopted ‘land’ as it was the main natural resource used in production. It differs from the other factors in several aspects. It is largely limited in supply with technological advances, such as reclamation, expanding the amount available only marginally. However, it can be improved by man, through schemes such as irrigation and the use of fertilisers (capital) in agriculture. Thus the quality of land varies enormously, both within and between countries.

Such differences in the nature of land help to account for the wealth differentials between nations. Clearly, the arid deserts of Central Africa are less useful than the fertile plains of North America. In addition, the discovery of new resources, such as oil, can transform a nation’s economy, as the example of Kuwait illustrates. The colonisation of outer space in the future will increase the ‘land’ available to some nations, in the same way as imperialism did in earlier centuries.

Unless controlled by a government, natural resources can be bought or leased. When the owners of land lease it out they receive rent for its use.

**Labour**

This is a specific category of human resource. In economics, labour refers to humans employed to produce goods and services. The overall supply of labour in an economy is determined by the population size. The USA with 295 million people has a larger potential labour force than Tunisia with 9 million inhabitants. At a micro-economic level, the supply of labour for a specific job will be affected by the wages paid, the hours of work, working conditions and the training needed.

The quality of labour also varies within and between economies. Generally, the quality is usually raised through education and training. In addition, the application of capital, through the use of machinery, will improve labour productivity.

When an individual makes their resource of labour available for production, s/he is rewarded for its use. The reward is labelled wages by economists. This term is used generally to cover specific payments such as salaries, fees, commissions, etc.

**Enterprise**

This term was devised to cover the work done by the organiser of production, who took risks. It is another human resource but one concerned with major decision-making in production. Thus, entrepreneurs supply risk capital, decide what to produce at what scale of production with what combination of resource inputs and in what location.

As the scale of production has increased, the managers of businesses are no longer normally their owners. The organizing role of management and the entrepreneurial role of risk taking have become separated. In most modern businesses, senior management is a very specialised form of labour employed by the shareholders. Interestingly, the growth in the numbers of self-employed in Britain from 1.4 million in 1970 to 3.2 million in 2002 has created an increasing number of entrepreneurs who both own and run businesses. This perhaps shows that the quantity of ‘enterprise’ can be expanded in an economy. In recent years governments have introduced many measures to further this aim.

In return for risk-taking, organizing and decision-making, entrepreneurs receive profit. When these functions are performed by a state agency the reward is termed a surplus. The size of the profits or surpluses reflect to some extent the quality of enterprise in an economy.
**Capital**

‘Physical’ capital (as opposed to money) is composed of man-made resources which aid production, e.g. a pneumatic drill. Capital goods may be fixed (e.g. a factory) or working capital, for example, raw materials and work in progress.

The quantity of capital at the disposal of an economy largely depends on the wealth accumulated from previous production. Thus, America will have millions of tractors in contrast to Tanzania’s thousands. Similarly, the quality of capital will be influenced by a nation’s economic development. Highly developed economies have sophisticated agricultural machinery, whereas poor nations make do with knives and baskets for crop harvesting.

The current value of the capital goods available for production is known as the capital stock. It includes social capital, such as roads and hospitals, and private capital, such as a BP refinery or an office block owned by a firm of accountants. If this stock grows faster than the labour force then there is capital deepening. However, if the ratio of capital to labour remains constant as an economy grows then there is said to be capital widening. The owners of money capital receive interest as a reward for lending that money to others. The rate of return earned by capital must take account of the alternative use (opportunity cost) to which the capital could have been put. Hence the rate of return on capital, usually calculated as a rate of interest, will be the surplus (or loss) of revenue earned by capital once all costs, including opportunity costs, have been taken into account.

In order to produce goods and services these factors need to be combined. However, it is not always possible to distinguish the exact contribution of each to the final output. For instance, although food production is largely dependent on the quality of agricultural land, this can be improved by the use of capital, enterprising organisation and efficient labour.

It also needs to be recognised that the factors vary in their mobility. Land is geographically immobile, although it can be put to several uses. Money capital is clearly more geographically and occupationally mobile. However, some physical capital may be very job specific and thus occupationally immobile, for example, a potter’s wheel.

- The four factors of production are land, labour, enterprise and capital and their reward for their part in the production process is rent, wages, profit and interest.

### 1.1.7 Production possibilities

The production possibilities for an economy can be theoretically examined in a simplified form through the use of a transformation (production possibility frontier) curve. The axes on the graph represent the different types of goods that could be produced, such as capital goods (goods used to produce an output of other goods and services, e.g. a machine) and consumer goods. The curve then shows the maximum of all the possible combinations of the two types of output that could be produced with the existing resources. It assumes an unchanging state of technology. In Figure 1.1, AB represents all the possible output combinations. Thus at point C, existing resources produce a large quantity of capital goods and a small quantity of consumer goods. Point D indicates the opposite combination.

The curve is normally drawn concave to the origin, thereby showing that some resources are better suited to the production of one good rather than another and vice versa.
Output and productivity

These two terms are not synonymous. Output refers to the amount produced over a period of time. This may be for a single company, an industry or the whole economy. It can be measured in physical terms or in value terms. Productivity refers to the output per unit of input over a period of time. Usually labour productivity is considered in terms of wage cost per unit of output. It is sometimes used as a measure of efficiency.

The following example shows the difference between production (output) and productivity:

<table>
<thead>
<tr>
<th>Number of workers</th>
<th>Total output</th>
<th>Output per worker (i.e. productivity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>80</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td>99</td>
<td>11</td>
</tr>
<tr>
<td>10</td>
<td>100</td>
<td>10</td>
</tr>
</tbody>
</table>

In the above example, the increase in the number of workers from eight to nine leads to an increase in both output and productivity. However, when the workforce goes up to ten workers, productivity falls even though output has risen (albeit marginally).

Different economies have differently shaped production possibility frontiers. For instance a nation whose resources are more adaptable to producing capital goods might have point A further from the origin and B a lot nearer. A very poorly resourced country will of course have a curve with A and B both much nearer the origin.

In theory there is an optimum production point (E) where resources are fully utilised at existing prices. All economies are inside this point on the curve and F typifies an economy producing beneath its full potential, and thus operating inefficiently.

It is possible for an economy to move from one transformation curve to another if the constant technology assumption is relaxed. An outward movement, as indicated by the dotted line in the diagram, shows an increase in productive potential and the capacity for long-term economic growth. However, a movement from F to E would not strictly be deemed economic growth, although governments claim any real increases in national income as economic growth. It just represents a better (i.e. less inefficient) use
of existing resources in the short term. A movement from E to G would, however, represent economic growth.

- The production possibility is concave
- Any point on the curve represents maximum current output
- Any point within the curve represents inefficiency
- An outward movement in the curve represents economic growth

1.2 Economic growth and welfare

1.2.1 Economic growth

In its strictest sense economic growth, as mentioned above, is taken to mean the growth of productive potential for the economy. However, the usual definition of economic growth is an increase in real gross national product (GNP).

Economic growth has been given high priority as a policy objective, because if the growth of output exceeds the growth of population, per capita income will rise, that is, the standard of living will rise. In the longer term, the compound effect on output of a constant rate of growth is impressive. For example, if output grows every year by 2 per cent, GDP will double in approximately 36 years; but if the growth of output can be increased to 3 per cent each year, output will double in approximately 24 years.

1.2.2 Economic welfare

This is not necessarily the same as economic growth. Economic welfare takes account of the overall quality of life of all citizens in an economy rather than just the growth in per capita income. Important in this context are externalities. An externality occurs when the costs or benefits of an economic action are not borne or received by the instigator. Externalities are, therefore, the spill-over effects of production and consumption which affect society as a whole rather than just the individual producers or consumers. Externalities might impose costs on society such as air pollution from the operation of motor vehicles or river pollution from the dumping of waste materials. On the other hand, externalities might confer benefits (negative costs) such as the general increase in property values in a particular street that results from individual improvements to property. It is important to note that any costs and benefits resulting from externalities are not solely borne by the individuals or firms responsible for them. Instead they are borne by all individuals or firms affected by them.

Thus to derive the social value of production, one must add the benefits and subtract the costs of these externalities to the private value of production to get a fuller picture of the economic welfare of an economy.

Economic growth should bring about improvements in the living standard of the population. However, the benefits may be unevenly distributed. In the United Kingdom in 2000 the average income of the top quintile group was about 18 times greater than that of the bottom quintile group. After direct taxation and the payment of State cash benefits this disparity is reduced to 6 : 1. When allowance is made for indirect taxation and an estimate is made for the value of benefit received from government expenditure on services such as education and health, the ratio of average final income in the top quintile group to that in the bottom quintile group is 4 : 1. Thus when measuring the economic welfare of a society,
one must take account of the role played by government intervention in affecting the
distribution of gains from economic growth.

Economic policy often requires a trade-off between efficiency and equity. The core of
analytical economics is to obtain an optimum allocation of resources. This represents an
efficiency objective. However questions of welfare relate to equity as well as efficiency and
in a mixed economy economic policy-makers search for acceptable trade-offs between
the two.

- Externalities are the social consequences of production and consumption.

### 1.2.3 Record of economic growth

Rates of economic growth vary from country to country.

Table 1.1 shows that the highest rates of growth are associated with newly industrialised
countries such as Malaysia and Singapore. By comparison the United Kingdom has had a
poor economic growth record.

But one is not just concerned with long-term economic growth but also with short-term
fluctuations in an economy’s growth rate. Thus economic growth in the United Kingdom
over the last 50 years has been as high as 7 per cent and also been negative on three occasions,
as seen in Figure 1.2.

The fluctuations in short-term economic growth can be related to the trade or business
cycle. Economies can experience high levels of economic growth which are referred to as
booms. In other years economies can experience a slowdown in economic growth. In the

<table>
<thead>
<tr>
<th>Growth</th>
<th>Japan</th>
<th>UK</th>
<th>USA</th>
<th>EU(15)</th>
<th>OECD</th>
<th>Brazil</th>
<th>Malaysia</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960–69</td>
<td>10.9</td>
<td>2.9</td>
<td>4.3</td>
<td>3.5</td>
<td>4.6</td>
<td>5.4</td>
<td>6.5</td>
<td>8.8</td>
</tr>
<tr>
<td>1970–79</td>
<td>4.3</td>
<td>2.0</td>
<td>2.8</td>
<td>3.2</td>
<td>3.6</td>
<td>8.1</td>
<td>7.9</td>
<td>8.3</td>
</tr>
<tr>
<td>1980–89</td>
<td>4.0</td>
<td>2.4</td>
<td>2.5</td>
<td>2.2</td>
<td>2.6</td>
<td>3.0</td>
<td>5.8</td>
<td>6.1</td>
</tr>
<tr>
<td>1990–99</td>
<td>1.9</td>
<td>1.6</td>
<td>2.1</td>
<td>1.9</td>
<td>2.2</td>
<td>2.0</td>
<td>7.8</td>
<td>7.8</td>
</tr>
</tbody>
</table>

**Figure 1.2** Fluctuations in UK growth

*Source: Economic Trends*
United Kingdom, if negative economic growth occurs for more than two quarters, it is officially called a recession.

The stages of the business cycle are shown in Figure 1.3.

1. The trough. This is the bottom of the cycle when the level of economic output is at its lowest.
2. The recovery. Here economic growth is at its fastest as it picks up from the lowest level of output in the trough.
3. The peak. Here economic output has risen to its highest level and the gap between actual and potential output has narrowed. Economic growth, however, has slowed down and may have even stopped.
4. The downturn. At this stage there is a decline in economic growth, which if it leads to an actual fall in the level of output, can mean the economy could enter a recession.

1.2.4 Factors influencing economic growth

The growth potential of an economy is dependent upon two things: the amount of economic resources available and their productivity. Thus the more factors of production there are, in the form of land, labour, enterprise and capital, the greater the potential for economic growth.

One of the most important factors which influences economic growth is the quantity of capital per worker. The greater the capital/output ratio, the higher the productivity of labour. The greater the levels of investment, the faster will be the growth in the capital stock.

The quality of the capital is also important. This will be improved if technological progress is rapid in an economy. The productivity of capital can be increased if machinery is updated so that firms use the latest technologies available. Technological progress is encouraged when investment in research and development is high.

The quantity and quality of the labour force will influence economic growth. The quantity of labour is dependent on demographic factors such as the size and gender/age composition of the population. Given the demographic features, the activity rate will affect the size of working population. The activity rate measures the proportion of any age group
which makes itself available for work. The greater this is, the greater the size of the working population.

The quality of labour depends on education and training. An educated labour force is easier to train and is likely to be more adaptable and enterprising. In addition, a highly trained labour force is likely to be more mobile and this can have an important bearing on the growth of productivity.

Improvements in productivity are important for economic growth as it will not only increase output from a given stock of factors of production but it will also improve the competitiveness of an economy. Productivity is the amount of output produced per unit of input. As a result higher rates of productivity would lower unit costs of production for a firm, leading to greater competitiveness. The firm could, therefore, expect to gain sales in domestic and international markets. Lower costs could enable a firm to lower its prices, thereby expanding the market, and encourage it to raise its levels of investment. This in turn would expand productive potential and lead to still higher productivity which in turn can produce a virtuous circle of economic growth. Productivity growth is, therefore, clearly an important ingredient in achieving a higher rate of economic growth in an economy.

- Economic growth arises from improvements in the quantity and quality of factors of production.

### 1.2.5 Policies to promote economic growth

Due to the importance of economic growth in raising standards of living, governments have always taken an interest in policies to promote it. A necessary condition is that levels of aggregate monetary demand are kept sufficiently high to see that existing productive capacity is fully used and that firms are encouraged to expand potential production by further investment. Governments can use fiscal and monetary policy to keep aggregate monetary demand close to its full employment level. Tax rates can be cut and interest rates lowered to encourage consumer and investment spending. Doubts exist regarding the success of such policies. The preferred route in the United Kingdom is to use fiscal and monetary policy so as to control inflation and reduce uncertainty in government economic policy rather than as a way of stimulating aggregate monetary demand. Government policy tries to create favourable economic conditions for firms to thrive, thereby raising economic growth.

However government policies will also seek to encourage aggregate supply in order to expand production in the economy. In the United Kingdom this has been linked to a recognition that productivity in the United Kingdom is lower than in other developed economies. Figure 1.4 shows productivity as measured by output per worker is 13 per cent below that in Germany, 21 per cent lower than in France and 36 per cent lower than in the United States.

Supply side policies attempt to increase the total quantity of factors of production especially capital as well as raise levels of productivity. Such policies can be market driven or interventionist in nature. Market driven policies seek to create as free a market as possible within which private enterprise and entrepreneurial activity can thrive. Such policies aim to reduce the role of government in the economy and place a greater emphasis on the role of the individual in driving economic activity. Thus privatisation of government industries, e.g. electricity, gas and water in the United Kingdom, and deregulation, as with the London Stock Exchange in 1986, have been introduced. Similarly an internal market was
introduced in several public services notably the National Health Service. The intention was to generate competition in sectors previously devoid of it and hence raise efficiency. The dependency culture was also attacked by reducing welfare payments for the unemployed and making it more difficult to qualify for such benefits. This should expand the numbers seeking work as people cannot so readily rely on State benefits for support, thus raising the supply of labour, one of the factors of production.

Supply side policies also seek to offer greater incentives in the economy. Marginal rates of taxation can be cut for workers and firms. This should encourage workers to work harder and longer hours as they will retain a greater amount of their earnings. It might also encourage previously non-active persons, such as housewives, to enter the labour market as the opportunity costs of not doing so has now risen. Consequently the amount of labour as well as its productivity could rise as income tax rates are reduced, thus raising economic growth. Cuts in business tax would raise the level of retained profits, providing more funds for firms to reinvest in the business and thus raising the capital stock in the economy.

Finally, market driven policies will seek to reduce the amount of controls in the economy. This could involve regulations which include unnecessary restrictions on business activity, for example, licensing laws, or the amount of bureaucratic form-filling required from small firms. In the United Kingdom retail restrictions have been lifted so that shops can open seven days a week and the licensing laws on the sale of alcohol liberalised. The VAT threshold on small firms has been raised while all foreign exchange controls were removed in 1979, thereby permitting the free inflow and outflow of capital. The powers of trade unions have also been reduced in the United Kingdom. These include enforced secret ballots before a union can call a strike, restrictions on secondary picketing and the outlawing of union closed shops. The overall impact of these measures has been the liberalisation of labour and capital markets in the United Kingdom.

However not all firms and entrepreneurs automatically thrive in a free market. Consequently supply side policies are often interventionist in order to promote further economic growth in an economy. In most developed economies governments support the infrastructure to give firms a stronger foundation from which to conduct their businesses. This can take the form of modernisation of the transport system, such as the motorway network, which will enhance the distribution networks of firms. Education and training may be upgraded which will provide firms with potentially a more adaptable and productive supply of labour. The government may sponsor research and development in universities in order to provide an economy with an advantage in respect of leading edge
technologies. In the United Kingdom the government recognises the importance of small and medium size firms to the economy. It provides them with assistance in the form of market information, advice on exporting, management training, technical assistance as well as tax concessions. Small firms in the United Kingdom pay a 20 per cent rate of corporation tax compared with a standard rate of 30 per cent. Thus there are many ways in which inventionist policies of government can strengthen the position of firms in a market economy and enhance economic growth.

1.2.6 Sustainable economic growth

In recent years there has been considerable interest in the impact of economic growth on the environment. In particular a view has been strongly expressed that by failing to take the environmental impact of economic growth into account, conventional measures of GNP do not give an accurate indication of sustainable economic welfare, that is, the flow of goods and services that an economy can generate without reducing its future production capacity. Thus GNP figures will include defensive expenditure needed to offset the impact of environmental damage. For example, some double-glazing may be installed to reduce the noise from increased use of lorries needed to move goods around the country. Such expenditure does not represent a gain in economic welfare as it leaves people no better off than they were before the increased traffic.

Environmental depreciation of natural resources is another aspect of sustainable economic welfare. Finite mineral resources can be used only once in the growth process. Their contribution is included in GNP at their current market value. However, the exhaustion of such finite resources impacts negatively on future sustainable growth.

Finally, some expenditures are incurred to overcome pollution damage caused by current economic activity. For example, water companies have to install treatment plants to cleanse drinking water due to the extensive use of nitrates and fertilisers by farmers which then runs off the land into water catchment areas.

Consequently figures of GNP need to be adjusted to arrive at an index of sustainable economic welfare (ISEW). From the discussion above, one needs to subtract from GNP defensive expenditures, depreciation of environmental capital in addition to physical capital, as well as the costs involved in overcoming pollution. When this is done, there is a clear difference between conventional measures of economic growth and sustainable economic welfare. Whereas for the UK 1996–2000, average annual growth in real GNP was 2 per cent per year, the ISEW showed only a 0.5 per cent annual growth. Environmental accounting, therefore, suggests a very different picture of changes in sustainable economic welfare to that provided by unadjusted GNP figures.

- ISEW provides an index of sustainable economic welfare.

Exercise 1.1

Answer the following questions based on the preceding information. You can check your answers below.

1. Why is a choice made when resources are allocated?
2. What is the difference between a need and a want?
3. What role does government play in a market economy?
4. What are the main production decisions which have to be made?
5. What does a production possibility curve show?
6. What are the main justifications for the entrepreneur’s profit?
7. Which factor of production is least mobile?
8. Are the following positive or normative statements?
   (a) Raising unemployment should cut the rate of inflation.
   (b) Policies to reduce unemployment should favour the young rather than the old.
9. At what points of the business cycle are points A, B, C in Figure 1.2?
10. What are the main factors causing economic growth?
11. What types of policy can be used to promote economic growth?
12. Why does the index of sustainable economic welfare (ISEW) differ from gross national product (GNP)?

**Solutions**

1. There are alternative uses to which resources can be allocated, thus a choice has to be made between these competing uses. This choice is made by any economic agent, whether it is an individual or the government.

2. A need is a necessity, such as food, clothing. In contrast, wants are not indispensable because people can do without them. They are luxury goods and services.

3. The government’s role is minimal, because most decisions on the allocation of resources are made in the private sector. Thus market forces are paramount and the government takes a back seat apart from providing basic services such as roads, law and order, defence, etc.

4. The main production decisions are what, where, how and for whom to produce.

5. A production possibility curve is a simple idea which shows the maximum of all possible combinations of two types of output (usually consumer and capital goods) that can be produced with existing resources.

6. The entrepreneur’s profit is the reward for organisation, risk-bearing and decision-making.

7. Land is the least mobile factor.

8. (a) Positive
   (b) Normative

9. A is recovery; B is peak; C is downturn.

10. Economic growth is dependent upon two things: the quantity of resources available and their productivity.

11. The two major types of policies are market driven policies and interventionist policies.

12. One needs to subtract from GNP defensive expenditures, the depreciation of physical and environmental capital, as well as the costs involved in overcoming pollution, to arrive at ISEW.

### 1.3 Chapter summary

On completing this chapter you should have acquired a good grasp of some of the important economic concepts related to economic growth and the growth of economic
welfare. The chapter has identified the nature of growth and some of the factors that influence the rate of growth. In particular the chapter has:

- considered the problem of *scarcity of resources* and the related concept of *opportunity cost*;
- discussed the range of production decisions and questions that have to be undertaken when resources are scarce and the way in which these are resolved in different economic systems;
- identified the types of factor of production needed, the rewards that are attached to them and their importance in determining the production possibilities for an economy;
- discussed the main features of recent economic growth;
- identified the main factors which influence the rate of economic growth in an economy and the possible role of governments in promoting faster economic growth.

The remaining chapters in this text develop these ideas in more depth. Chapter 2 looks at how resources are allocated to and employed in different types of markets and industries and the role of the competitive process for resource allocation. Chapter 3 looks at the economy as a whole and considers how economies function and what determines how well they perform and thus how well they contribute to economic welfare. Chapter 4 looks at these issues in the context of an open economy and the importance of international trade in goods and services and the movement of capital between economies.
This reading deals with issues of economic growth and structural transformation; it discusses the emergence of a new economic superpower as rapid economic growth and industrialisation transforms the Chinese economy.

‘How cheap labour, foreign investment and rapid industrialisation are creating a new workshop of the world’


The Pearl river delta is attracting $1bn of investment a month amid one of the fastest bursts of economic development in history, write Dan Roberts and James Kynge.

Dr Martens, boot-maker to generations of punks, skin-heads and factory workers, will this month quietly end centuries of volume shoe manufacturing in Britain by moving its production to a dusty plain in southern China.

Northampton, where Dr Martens is based, used to be synonymous with footwear, just as other Midlands towns were known around the world for their exports: pottery from Stoke, carpets from Kidderminster, hats from Luton.

Today, the booming cities of China’s Pearl river delta have become the new workshops of the world.

Shunde styles itself the microwave oven capital, with 40 per cent of global production emerging from just one of its giant factories. Shenzhen, the special economic zone, claims to make 70 per cent of the world’s photocopiers and 80 per cent of its artificial Christmas trees. Dongguan has 80,000 people working in a single factory making running shoes for the world’s teenagers. Zhongshan is the home of the world’s electric lighting industry. Zhuhai, until recently a seaside town surrounded by paddy fields, is reclaiming land from the ocean to make more room for factories that already dominate global supply of everything from computer game consoles to golf clubs.

The Pearl river delta – an area the size of Belgium that winds inland from Hong Kong through a series of tightly packed islands – produces $10bn (Ø €9.3bn; £6.1bn) worth of exports and attracts $1bn of foreign investment a month. Already, 30 m people work in manufacturing here; every day thousands more pour off trains from farms further north.

Just as Friedrich Engels wrote of the ‘modern art of manufacture reaching its perfection’ in Manchester in 1845, so the world’s multinationals are bringing over their advanced production techniques to take advantage of cheap labour and low costs in the world’s last great communist state. The gleaming outposts of Microsoft, BP, Honda or General Electric make a nonsense of the stereotype that China exports little more than plastic toys.
Many countries have experienced rapid, export-led industrialisation. But the speed and scale of this region’s transformation is unprecedented. Last year, more goods were exported from China’s Guangdong province, which encompasses the Pearl river delta, than during the entire 13-year period from 1978 to 1990. Total Chinese exports grew 21 per cent in 2002 to $322bn and have doubled in just over five years. In contrast, British exports took 12 years to double after 1838. It took Germany 10 years to double exports in the 1960s and seven for Japan in the 1970s. While past booms eventually stoked inflation, the inexhaustable supply of land, labour and government encouragement has kept costs down and exported price deflation around the world. The Cantonese work ethic that built Hong Kong has created a culture where overtime is endemic and the sound of construction can be heard throughout the night.

The catalyst for the delta’s explosive export growth is globalisation. China joined the World Trade Organisation last year. Increasing competition, falling transport costs and flagging consumer demand are forcing multinational manufacturing companies to flock to the region with the lowest production costs.

In Dr Martens’ case, fierce price competition from rival US brands already produced in China forced the company’s hand. ‘It was absolutely obvious from the moment I arrived that we had to move to China like everyone else,’ says David Suddens, managing director. Dr Martens will outsource production to factories owned by Pou Chen and Golden Chang, Taiwanese companies that moved to the mainland to take advantage of lower labour costs.

Pou Chen’s plants, one in Zhuhai and one in Dongguan, employ 110,000 people and churn out 100 m pairs of Rmn800 ($96; £59; €89) a month, or 36 cents an hour, for up to 69 hours a week and provides dormitories for migrant workers who must obey strict curfews.

Yet the light, well ventilated working conditions are far better than many visitors expect. Stung by complaints of exploitation, Nike and other buyers have full-time local offices monitoring most aspects of employee life. Some of Pou Chen’s older Taiwanese managers seem bemused by their customers’ recent interest in workplace standards. ‘In the past, it was all about whether you could hit the workers or slap them. Now we talk about how we celebrate their birthdays,’ says Thomas Shih, deputy manager.

Nevertheless, older shoe factories are beginning to find it hard to attract and retain workers tempted by better-paid jobs in other plants. Pou Chen is opening a factory further inland where labour is more plentiful. Nearer the coast, the latest boom is in high-technology and capital-intensive industries such as petrochemicals and plastics. Although labour rates are creeping up, the economies of scale keep supply costs down and attract even more companies to relocate.

The ‘great sucking sound’ caused by this rush of inward investment can be heard throughout the world. While the rest of Asia has a glut of electronics factories, many plants in China are doubling output this year. During last year’s global downturn, the port of Shenzhen leapfrogged both Rotterdam and Los Angeles to become the world’s sixth largest container terminal. Last week, Rio Tinto, the global mining group, announced that Chinese consumption of raw materials such as steel and copper had overtaken that of the US, even though the American economy is eight times larger.

Few companies illustrate the Chinese boom as well as Flextronics, a Singapore electronics manufacturer, that acts as contract producer for Microsoft, Motorola, Dell, Palm and Sony Ericsson. Globally, the company has suffered from the bursting of the internet bubble; but its Chinese plant in Doumen has doubled its payroll to 12,000 in 12 months.
Unlike the neighbouring shoe factories, Flextronics uses modern techniques to make products such as Microsoft’s Xbox computer game console. The proximity of suppliers is just as important as cheap labour. Four years ago, only 5–10 per cent of the plant’s components came from local factories. Now it is between 50 and 70 per cent.

‘This area has about the lowest direct labour cost we have found anywhere – at least 15 per cent less than Shanghai and about 30 per cent less than Malaysia – but well under 1 per cent of our costs are labour-related,’ says Tim Dinwiddie, the Doumen manager. ‘It is a myth that companies are coming here just for the cheap labour. It is the efficiency of the supply chain that drives them here, as more and more of worldwide demand is consolidated in this area.’

This relentless competition among local suppliers keeps profit margins almost invisible for many companies, especially those manufacturing branded products for others. Flextronics competes with nearby contract manufacturers making Sony PlayStation and Nintendo game consoles. Pou Chen has to worry about more than 800 other shoemakers in the Pearl river delta. Among Chinese companies, the price war is particularly intense because competitors are often chasing market share rather than trying to improve short-term profitability.

Tiny variations in commodity prices can wipe out profits almost entirely. ‘Generally, our costs go down by 15 per cent every year but this year they have risen because of new Chinese tariffs on imported steel [in retaliation to US anti-dumping measures], which have increased the cost of an oven by Rmn40,’ says Yu Yao Chang, deputy general manager of Galanz, a microwave oven manufacturer. He insists that his 13,000-man production line is still eight times more efficient than those of developed countries. ‘In Europe, people work for five days a week, perhaps six hours a day. Here we have three shifts each working eight hours every day.’

Yet since the margin on a low-end oven can be as little as Rmn2-Rmn3, and domestic steel producers have failed to keep pace with demand from China’s car factories, the new tariffs have caused Galanz’s profits to collapse by Rmn1bn.

Some of the cost can be passed on to the 200 branded suppliers that purchase most of Galanz’s 12 m ovens – but attempts to reduce their power by producing own-brand substitutes for western markets have met with stiff resistance. Apart from General Electric, none is willing even to admit it uses the shabby Chinese factory.

Yet it would be a mistake to assume that the Pearl river delta is destined for a lifetime of servitude to global brands. Many Chinese companies are learning the tricks of the virtual economy and launching their own brands aimed at China’s rising middle class. Other foreign-owned factories are overturning the rule that developing countries make only low-end products already commoditised by more pioneering factories in the rich world. Japanese electronics groups such as Ricoh, which makes most of its photocopiers in Shenzhen, have traditionally used domestic factories to make newer models. But now it makes colour models in Shenzhen only months after they first roll off the production lines in Japan.

‘There are high levels of engineers and college graduates and plenty of girls with good eyes and strong hands,’ says Mitsuhiko Ikuno, managing director in Shenzhen. ‘If we run out of people, we just go deeper into China.’

The flood of US and Japanese money is also pulling much-needed investment away from the rest of Asia’s industrial heartlands. Foreign direct investment in South Korea fell 63.7 per cent last quarter. Indonesia’s figure dropped 35 per cent in 2002.

Even countries that long ago gave up competing with Asia on the price of manufactured goods are not immune to the dramatic impact of China’s integration with the
global economy. In Britain, the trade deficit in physical goods rose in November to a
record £4bn. The US trade deficit with China climbed to a record $83bn last year.

From the banks of the Pearl river, workers look enviously at a western consumer boom
partly fuelled by their falling costs of production. As Galanz’s Yu Yao Chang says: ‘People
in the outside world should say ‘thank you’ to China because we save them money which
they can use to buy high value-added things.’

**Discussion points**

**Discuss these within your study group before reading the outline solutions**

1. What does the article suggest have been the principal forces behind the industrial
growth in this region of China?
2. What might be the effects of this pattern of industrial growth on other countries?

**Outline solutions**

1. The two important forces are:
   - low production costs in China, especially, but not solely, labour costs;
   - the huge inflow of foreign direct investment into the region.

   The two forces are clearly linked: foreign companies are attracted by the low costs
   and bring with them the capital and technology which enable the region to further
   reduce costs and to shift production into more sophisticated goods.

2. The possible impacts of this industrial growth on other countries include:
   - loss of employment as companies move to China (e.g. the example of Dr Martens
     moving from the UK);
   - widening international trade deficits in as China increases its exports of manufactured
good to western economies;
   - increased real income for consumers in western economies as the prices of many
     manufactured goods are forced down by lower costs and intense competition.

Thus the article illustrates the well known phenomenon that most economic processes
produce both problems and benefits.
Revision Questions

You should use these questions for practice and revision for the content of this chapter.

¿ Question 1 Multiple-choice selection

1.1 In economics, ‘the central economic problem’ means that:
   (A) consumers do not have as much money as they would wish.
   (B) there will always be a certain level of unemployment.
   (C) resources are not always allocated in an optimum way.
   (D) output is restricted to the limited availability of resources.

1.2 Which one of the following best describes the opportunity cost to society of building a new school?
   (A) the increased taxation to pay for the school.
   (B) the money that was spent on building the school.
   (C) the other goods that could have been produced with the resources used to build the school.
   (D) the running cost of the school when it is opened.

1.3 The opportunity cost of constructing a road is:
   (A) the money spent on the construction of the road.
   (B) the value of the goods and services that could otherwise have been produced with the resources used to build the road.
   (C) the cost of the traffic congestion caused during the construction of the road.
   (D) the value of goods that could have been produced with the labour employed in the construction of the road.

1.4 In a market economy, the allocation of resources between different productive activities is determined mainly by:
   (A) the decisions of the government.
   (B) the wealth of entrepreneurs.
   (C) the pattern of consumer expenditure.
   (D) the supply of factors of production.
1.5 Which of the following would cause the production possibility frontier for an economy to shift outwards?

(i) A reduction in the level of unemployment.
(ii) A rise in the rate of investment.
(iii) A fall in the price of one factor of production.
(iv) A rise in output per worker.

(A) (i) and (ii) only.
(B) (i), (ii) and (iii) only.
(C) (i), (iii) and (iv) only.
(D) (ii) and (iv) only.

1.6 In a market economy, the price system provides all of the following except which one?

(A) Signals to consumers.
(B) Incentives to producers.
(C) A means of allocating scarce resources.
(D) A store of value.

1.7 Which one of the following is the best measure of the standard of living in a country?

(A) the amount of money each person has.
(B) the surplus on the balance of payments.
(C) gross national product per head.
(D) gross average earnings.

1.8 All of the following are likely to raise the rate of economic growth in a country except which one?

(A) Increased expenditure on education and training.
(B) Tax incentives to encourage business expenditure on research and development.
(C) Encouraging domestic industries by tariffs on imports.
(D) Raising the normal age of retirement for workers.

? Question 2

The following is based on a journal article:

The price of oil has increased dramatically. A barrel sold for $11 in December 1998, but the price in March 2000 reached $29. As a consequence of this price rise, some commentators are worrying that the US economy may be facing an ‘oil price shock’ similar to those in the 1970s and 1980s. Following these earlier shocks, the US economy saw its general price level rise while national output fell – a combination known as ‘stagflation’. Is the US economy facing a similar threat? A closer look at the data suggests not.

The darker line on the chart shows the price of oil deflated by the consumer price index – the real price of oil. In inflation-adjusted terms, today’s oil prices are roughly the same as they were in the second half of the 1980s. Also, the share of oil in GDP has fallen sharply since the 1970s (shown by the lighter line) and so changes in oil prices have less effect on the economy. The decreasing share of oil in the economy reflects both changes in economic structure and increased energy efficiency.
Requirements
Using both your knowledge of economics and material and data in the passage and diagram:

(a) State whether each of the following is true or false.

(i) stagflation is a combination of higher inflation with lower output and employment. (1 mark)

(ii) the production possibility frontier shows the maximum of all those combinations of goods that the economy can produce with existing resources. (1 mark)

(iii) recessions are normally characterised by negative growth, rising unemployment and higher inflation. (1 mark)

(iv) the process of resource allocation is concerned with determining which resources will be used to produce which goods and services. (1 mark)

(v) long-term economic growth occurs whenever the economy moves closer to its production possibility frontier. (1 mark)

(vi) provided national income per capita has risen, everybody would experience a rise in their standard of living. (1 mark)

(b) State whether each of the following processes would increase or decrease the US economy’s dependence on oil.

(i) The shift from manufacturing to service sector industries. (4 marks)

(ii) Rising consumer incomes.

(iii) Safety concerns over nuclear power.

(iv) Increased energy efficiency.

(Total marks = 10)
Solutions to Revision Questions

The answers to the multiple-choice questions given below indicate the single correct answer for each question. The multiple-choice questions used in examinations are a form of objective testing. There is only one correct answer and this is not subject to differences of opinion among economists. The task of the candidate is to identify the one correct answer.

Solution 1

1.1 Solution: (D)

The central economic problem refers to the scarcity of resources relative to human wants. A refers to money rather than real resources and B refers to a real problem but one which, if solved, would still leave resources relatively scarce. This is also true of C; even if resources were optimally allocated, they would still be scarce.

1.2 Solution: (C)

Opportunity cost refers to the opportunity to produce other goods and services which are forgone when those resources are used for a particular purpose. A and B refer to financial considerations rather than real resources and D refers to the opportunity cost of running the school, not of building it.

1.3 Solution: (B)

A refers to the financial implications of road building and D refers to only one of the real resources involved. Congestion, mentioned in C, is a real cost, but does refer to the cost of the road itself.

1.4 Solution: (C)

In a market economy, producers in the search of profits must respond to consumer demand. Thus the allocation of resources reflects consumer preferences as expressed in their expenditure. Governments play some role in resource allocation, but in market economies this is limited. D refers to the availability of resources not their allocation between different uses.

1.5 Solution: (D)

The possibility production frontier shows maximum output given the total resources available and their productivity. Thus (ii) (more resources) and (iv) (higher productivity) would have this effect. A fall in unemployment (i) would move the economy...
closer to its frontier but would not lead to any shift in the frontier. A change in factor prices (iii) would have no effect on the real resources available.

1.6 Solution: (D)

Prices are signals to both consumers and producers which influence their buying and producing decisions and in this way help to allocate resources between different goods and services. However, prices do not act as a store of value; this is a function of money.

1.7 Solution: (C)

The standard of living is a function of income per head; money is stock of financial assets, not income. The balance of payments has no direct relationship to income. Earnings represent only one source of income. Gross national product is the total income received by residents of a country; measured per head, this is the best measure of the standard of living.

1.8 Solution: (C)

Economic growth can only result from acquiring more resources such as labour (D) or raising the productivity/efficiency of resources (A, B). Tariffs on imports would only lead to resources moving from one sector to another; there would be neither more resources available nor better use of resources.

☑ Solution 2

(a) (i)  True.
(ii)  True.
(iii) False; the rate of inflation tends to decline in recessions as aggregate demand falls.
(iv)  True.
(v)  False; long term economic growth is represented by an outward movement of the production possibility frontier itself.
(vi) False; extra income may be used for activities that do not immediately raise the standard of living (e.g. investment) and whether everybody gains depends on the distribution of the extra income.

(b) (i)  Decrease the dependence on oil.
(ii)  Increase the dependence on oil.
(iii) Increase the dependence on oil.
(iv)  Decrease the dependence on oil.
The Market System and the Competitive Process

Learning Outcomes

This chapter seeks to explain the way in which a competitive market works. The roles of the consumer and the firm are examined. The impact of consumer behaviour, both individually and collectively, on demand allows the introduction of concepts such as utility, substitution and elasticity. The idea of time periods is featured as the theory of supply is developed. The derivation of supply by both firms and an industry is demonstrated. Demand and supply are then put together to show how market prices are determined. The concept of market equilibrium is developed.

The theory of the firm is developed. This begins with an understanding of the costs of production. This is considered in some detail and the concept of profit maximisation is thoroughly examined. Alternative theories of the firm and ‘not-for-profit organisations’ are also introduced to illustrate different approaches to production.

The importance of the size of firms is considered, with a separate section on large-scale production and small firms. In the former, the growth of firms through integration is outlined. The consequent economies and diseconomies of scale are then explained. In the section on small firms, their growth, survival and value are highlighted.

Finally, the different forms of market structure are identified and explained. In each case the theoretical model outlining price and output determination is explained. The key economic concepts of allocative efficiency and technical efficiency are applied to the different market structures. This analysis considers both the private and the public sector. Public policy in respect of competition and regulation is considered.

On completion of this chapter students should be able to:

- explain the function of a market economy;
- explain how the price system works by applying appropriate economic concepts;
- explain and illustrate how product and factor markets operate;
- apply basic economic analysis to explain economic and business issues;
- explain the behaviour of business costs in both the short and long run;
- explain the economic factors which affect the structure, behaviour and performance of individual businesses and industries;
- analyse the process of competition in different market structures;
- identify the public issues that are raised by business activity;
- explain how government might respond to the effects of business and the environment.
2.1 Consumer behaviour and demand

2.1.1 Individual demand

Individual demand shows how much of a good or service someone intends to buy at any possible price. This demand needs to be effective in that it is backed by available money, rather than just a general desire without the necessary financial backing. When considering demand at a price, we assume that the conditions of demand (i.e. other variables) are held constant.

For most goods and services, the demand tends to be higher at a low price and lower at a high price. This is shown graphically in Figure 2.1, with the demand curve $D_1$ sloping downward from left to right. When there is a change in the quantity demanded in response to a price change this is termed an expansion or contraction of demand.

The downward sloping demand curve can be explained by reference to utility theory.

(i) Utility theory

This theory assumes that consumers want to maximise the total utility (satisfaction) which they gain when buying a set of goods and services and that they behave rationally. It requires consumers to be able to measure the marginal (extra) utility gained from the purchase of one more unit of a good and evaluate the opportunity cost of that spending.

A consumer’s ability to increase their utility is constrained by three conditions. Principally, her income is usually limited and so choices and sacrifices have to be made. This is termed a budget constraint. In addition, the prices which she pays are outside her control, being set by the sellers (although a monopsonist – a sole buyer of a product – may be able to influence the price). Third, the rationality assumption means that the consumer is expected to behave consistently, for example, if she prefers honey to jam today, she must have the same taste tomorrow.

(a) Normal goods. Generally, when a consumer buys more of a good his total utility rises. However, each successive increase in utility is less than the previous one. For example, a student derives a lot of satisfaction from buying and using his first textbook on accountancy, but his second purchase is slightly less satisfying because some of the chapters duplicate the first book. By the time the student buys his fourth book very little satisfaction is obtained from the purchase. If the student calculates that a fifth book would add no extra satisfaction and may give disutility (e.g. wasted time spent

![Figure 2.1](image)

**Figure 2.1** Normal and inferior demand curves
consulting it) then he would not accept it, even as a gift! Utility is measured theoretically in *utils*, as shown in Figure 2.2. After four books total utility falls as marginal utility becomes negative. Thus, for most normal goods successive increases in consumption raise total utility but at a diminishing rate. The rational consequence of this for consumer behaviour is that individuals will only be prepared to pay less for each successive purchase of a good. Thus more demand will only be forthcoming at lower prices, because of the principle of diminishing marginal utility.

A consumer’s spending on a good will be in equilibrium where his marginal utility = price. The equilibrium condition for a basket of goods will be where

\[
\frac{\text{Marginal utility of good } A}{\text{Price of good } A} = \frac{\text{MU}_B}{P_B} = \frac{\text{MU}_C}{P_C}
\]

For example:

\[
\frac{5 \text{ utils}}{10p} = \frac{25 \text{ utils}}{50p} = \frac{1 \text{ util}}{2p}
\]

The ratio of utils to price is the same for each good – there is *equi-marginal utility*. Thus, at the margin, the consumer gains the same amount of extra utility or satisfaction from each penny of expenditure on every product and cannot secure extra utility by switching expenditure from one product to another.

Clearly, changes in the prices of goods should cause rational consumers to adjust their demand schedules. Ideally, the consumer is trying to get the same satisfaction from each penny-worth spent. If the price of a good falls then the consumer buys more to maximise his total utility from his expenditure.

This *substitution effect*, which occurs when consumers buy more of one good and less of another good because of the relative price changes, partly explains the normal demand curve. It is reinforced by the *income effect*. This shows the effect of price changes on a consumer’s income. If the price of a good falls, other things being equal, the consumer becomes marginally better off because he can buy the same combination of goods as before with less income. His real income has increased.
Generally when real income increases, people’s expenditure on goods rises. Thus for normal goods, substitution and income effects move in the same direction.

(b) ‘Inferior’ goods. When people’s income increases, their demand for certain goods falls, as better quality alternatives are substituted, for example, a consumer buys local bakery bread rather than the prepacked, mass-produced variety. The latter is now deemed to be an inferior good by the consumer. In this case the income effect works in the opposite direction to the substitution effect. The effects may be self-cancelling or imbalanced. Usually, with price falls, the positive substitution effect outweighs the negative income effect. However, in the case of Giffen goods less is demanded when price falls because the negative income effect overcomes the positive substitution effect. The classic example, which Giffen identified, was that of potatoes in Ireland during the 1840s famine, when higher prices for potatoes increased their consumption and created less demand for other goods.

Utility analysis cannot really explain consumers’ behaviour regarding these goods. Giffen goods have an upward sloping demand curve ($D_2$ in Figure 2.1). Furthermore, individual perceptions of a good may change. For example, a good may switch from being inferior to normal to inferior with changing financial circumstances.

(c) Other unusual goods. When the price of a good falls, the substitution effect should be positive (i.e. more is consumed) if consumers are consistent and rational. However, it may be that some consumers:

- do not maximise utility: In reality, people’s limited knowledge of other prices and shortage of time means that they have utility minima which they wish to satisfy within their existing budgets, for example, buy sufficient Leicester cheese for the week irrespective of whether the price is £1 per lb, £1.10 or £1.20. In this case the substitution effect would be neutral.

- are status maximisers: The social value of ownership may be more important than the utility and so when the price of a status symbol good (e.g. private jet) rises, they buy more. This creates a positive substitution effect.

- are influenced by future uncertainty: If consumers see certain goods rising in price, they may buy more in anticipation of future price increases, for example when oil prices rose in 2004 amid fears of future shortages.

In the last two cases, the result is an unusual demand curve which slopes upward left to right. This is a similar shape to a Giffen good but for different reasons. However, the utility analysis can be used to explain the value paradox, that is, water is indispensable for life but low priced, whereas diamonds are an unimportant ostentation but are expensive. The total utility of water is high but its marginal utility is low normally, and therefore so is its price. In contrast diamonds have a low total utility but a high marginal utility, making them a high-priced good.

The marginal utility approach also helps to explain why the prices of identical goods may vary in certain circumstances, for example, a famine-stricken person might pay dearly for a crust of bread (because of its high marginal utility), whereas an affluent person might pay next to nothing for it (low marginal utility or even disutility).

Nevertheless, the utility analysis has a fundamental weakness. It assumes that consumers can place a precise value on satisfaction and make subtle distinctions between the utility gained/lost when goods are substituted because of price changes.

- The normal demand curve shows that as price falls demand rises.
- Normal goods experience a positive substitution and income effect when price falls.
- Inferior goods have positive substitution effect and a negative income effect.
2.1.2 Market demand

Market demand shows the total amount of effective demand from all of the consumers in a market. It is an aggregate, like the supply curve for an industry. ‘Market demand’ is usually shortened to ‘demand’ and represented by a straight-line curve on a graph. The demand curve for most normal goods is downward sloping left to right because of diminishing marginal utility, and the substitution and income effects. However, because the marginal utility varies between consumers, it is possible that some consumers may get a bargain when buying a good. These consumers were prepared to pay more for it than they were charged. They gained a consumer surplus equal to the difference between the two amounts. The total consumer surplus is illustrated in Figure 2.3.

A supplier can also gain a producer surplus. The supplier is prepared to sell certain quantities at less than the prevailing price, as indicated by the supply curve between 0Q in Figure 2.3. Thus, the producer makes extra profit on these sales.

2.1.3 Elasticity of demand

Elasticity generally refers to the relationship between two variables. There are several types which are useful to economists.

Price elasticity of demand

This concept explains the relationship between quantity demanded and price. It explains the responsiveness of demand to changes in price. The coefficient of price elasticity of demand (PED) is calculated by:

$$\text{PED} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$

This formula can be applied either over a range of prices, or at one point (point elasticity), or over the whole curve (arc elasticity).
The coefficient of elasticity calculations for normal goods give a negative result because price and quantity demanded are inversely related. However, for inferior goods and those with unusual-shaped demand curves, the elasticity will be positive, showing an increase in quantity demanded when price rises. A summary of price elasticity is given below:

<table>
<thead>
<tr>
<th>Description of curve’s elasticity</th>
<th>Coefficient value</th>
<th>Actual examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfectly inelastic</td>
<td>0 (zero)</td>
<td>—</td>
</tr>
<tr>
<td>Relatively inelastic</td>
<td>Between 0 and 1</td>
<td>Tea, salt</td>
</tr>
<tr>
<td>Unit elasticity</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>Relatively elastic</td>
<td>Between 1 and ∞</td>
<td>cameras, air travel</td>
</tr>
<tr>
<td>Perfectly elastic</td>
<td>∞ (infinity)</td>
<td>—</td>
</tr>
</tbody>
</table>

The slope and position of the demand curve will determine the actual numerical value of the elasticity. Generally, if the demand curve is fairly steep, a large change in price will cause only a relatively small change in demand, indicating an inelastic demand curve. It is often wrongly assumed that two demand curves with the same shape will have the same elasticity coefficient. The coefficients for the same range of $D_1$ and $D_2$ in Figure 2.4 are calculated for a price fall (triangle $c$).

For $D_1$ (triangle $c$) the quantity demanded increases from 5 to 10 (i.e. $+\frac{5}{5}$) as the price falls from 10 to 5 (i.e. $-\frac{1}{2}$). Elasticity is therefore calculated as $\frac{\frac{5}{5}}{\frac{1}{2}} = -2$.

In contrast, $D_2$ (triangle $c$) shows that quantity demanded increased from 15 to 20 (i.e. $+\frac{1}{3}$) when the price fell from 10 to 5 (i.e. $-\frac{1}{2}$). Elasticity is therefore calculated as $\frac{\frac{1}{3}}{\frac{1}{2}} = -\frac{2}{3}$.

This demonstrates the importance of the position of the demand curve. Generally, a curve further from the origin will tend to be less elastic, as shown above.

The numerical value of the elasticity coefficient also varies according to:

- whether a price fall or price rise is calculated. In Figure 2.4, $D_2$ elasticity $= -\frac{2}{3}$ when price fell from 10p to 5p. However, a price rise of 5p to 10p gives $-\frac{1}{4}$ (i.e. $-\frac{1}{4} / 1$). This occurs because elasticity shows relative percentage changes and the base from which the calculations are made differs.

![Figure 2.4 Elasticity of demand](image)
which part of the demand curve is selected. Elasticity varies from point to point on a straight-line demand curve (but not on a rectangular hyperbola). As calculation moves down a linear curve from top left to bottom right the elasticity value falls, that is, the curve becomes relatively more inelastic. In Figure 2.4 the price elasticity of demand for a price fall of 5p on \( D_2 \) at \( a = -4 \) (i.e. \( 1 \div \left( -\frac{1}{4} \right) \)), whereas at \( b \) it is \( -\frac{3}{2} \) (i.e. \( \frac{1}{2} \div (-\frac{3}{4}) \)) and at \( c \), \( -\frac{2}{3} \) (i.e. \( -\frac{1}{3} \div \left( \frac{1}{2} \right) \)).

The elasticity can also be calculated by examining total revenue. This method is most useful to business people.

- If total revenue increases following a price cut, then demand is elastic.
- If total revenue increases following a price rise, then demand is inelastic.

Conversely, if total revenue falls after a price cut, then the demand is inelastic; and after a price rise it is elastic. If total revenue remains unchanged, then the demand is of unitary elasticity.

There are several factors which determine the price elasticity of demand:

- **Income.** Where a good constitutes a small proportion of consumers’ income spent, then a small price change will be unlikely to have much impact. Therefore, the demand for unimportant items such as shoe polish, matches and pencils is likely to be very inelastic. Conversely, the demand for quality clothing will probably be elastic.

- **Substitutes.** If there are close and available substitutes for a product, then an increase in its price is likely to cause a much greater fall in the quantity demanded as consumers buy suitable alternatives. Thus, the demand for a specific variety box of chocolates may be fairly elastic because there are many competing brands in the market. In contrast, the demand for a unique product such as the *Timeform Racehorses Annual* for racing enthusiasts will tend to be inelastic.

- **Necessities.** The demand for vital goods such as sugar, milk and bread tends to be stable and inelastic; conversely luxury items such as foreign skiing holidays are likely to be fairly elastic in demand. It is interesting to note that improvements in living standards push certain commodities such as televisions from the luxury to the necessity category. However, with luxuries the income elasticity of demand is more significant than the price elasticity of demand.

- **Habit.** When goods are purchased automatically, without customers perhaps being fully aware of their price, for example, newspapers, the demand is inelastic. This also applies to addictive products such as cigarettes, cocaine and heroin.

- **Time.** In the short run, consumers may be ignorant of possible alternative goods in many markets, so they may continue to buy certain goods when their prices rise. Such inelasticity may be lessened in the long run as consumers acquire greater knowledge of markets.

- **Definition of market.** If a market is defined widely (e.g. food), there are likely to be fewer alternatives and so demand will tend to be inelastic. In contrast, if a market is specified narrowly (e.g. orange drinks) there will probably be many brands available, thereby creating elasticity in the demand for these brands.

**Income elasticity of demand**

This concept explains the responsiveness of demand to changes in income. When income rises, people not only increase their demand for existing goods but also start to demand other goods, which they previously could not afford. These goods may be luxuries
The purchase of such goods may be to the detriment of other goods (e.g. frozen chickens) which then become inferior goods. The income elasticity of demand (IED) is calculated by the formula:

\[
\frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in income}}
\]

If an increase in income of 10 per cent causes a 20 per cent increase in the demand for vegetarian food, then its income elasticity is 2 \(\left(\frac{20}{10}\right)\).

A summary of income elasticity is given below:

<table>
<thead>
<tr>
<th>Description of income elasticity</th>
<th>Value</th>
<th>Type of good</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>−</td>
<td>Inferior</td>
<td>Matches</td>
</tr>
<tr>
<td>Zero to inelastic</td>
<td>0–1</td>
<td>Basic necessities</td>
<td>Bread, toothpaste</td>
</tr>
<tr>
<td>Positive (elastic)</td>
<td>+1</td>
<td>Superior</td>
<td>Restaurant meals</td>
</tr>
</tbody>
</table>

Income elasticity can be identified by market research using representative samples and by examining the household expenditure survey statistics published by the government. The evidence collected can be used by a business to plan its production and company strategy. Thus, the British Match Corporation diversified from its main product, matches, into a range of other wood-based products because it recognised matches as an inferior good (even though it is price inelastic).

**Cross-elasticity of demand**

This concept shows the relationship between two goods. It measures the responsiveness of the quantity demanded for one good to the price change in another.

It indicates usually whether the two goods are substitutes, complements or unrelated.

The cross-elasticity is calculated by the formula:

\[
\frac{\text{Percentage change in quantity demanded of good A}}{\text{Percentage change in price of good B}}
\]

For example, if the price of muesli falls by 10 per cent and the quantity of cornflakes bought falls by 20 per cent, then the cross-elasticity is \(+2\) \(\left(\frac{-20}{-10}\right)\). Generally a positive sign indicates that the two goods are substitutes and the size of the number shows the strength of the relationship. High statistics indicate strong relationships, and low ones suggest a weak one. A summary of cross-elasticity is given below:

<table>
<thead>
<tr>
<th>Description of cross-elasticity</th>
<th>Value</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complements</td>
<td>−</td>
<td>Bread and butter</td>
</tr>
<tr>
<td>Substitutes</td>
<td>+</td>
<td>Apples and oranges</td>
</tr>
<tr>
<td>Close substitutes</td>
<td>+high</td>
<td>Worcester apples and Granny Smith apples</td>
</tr>
<tr>
<td>Unrelated products</td>
<td>0</td>
<td>Apples and cars</td>
</tr>
</tbody>
</table>
The interpretation of data on cross-elasticity is difficult because the impact of just one variable on another cannot be isolated in the real world. For example, a business person cannot be sure that the increase in demand for their product is solely caused by the pricing behaviour of their rivals, as other factors such as changes in income and tastes may also have been influential. Such factors are considered in the next section.

2.1.4 Conditions of demand

Individual and market demand consider exclusively the influence of price on the quantity demanded, assuming other factors to be constant. These factors, termed the conditions of demand, will now be considered, with price held constant. Variations in the conditions of demand create shifts in the demand curve. These shifts are falls or increases in demand. They are not to be confused with contractions or expansions which show a change in the quantity demanded resulting solely from price movements. The differences are illustrated in Figure 2.5.

The main conditions of demand are as follows:

(i) Income. Changes in income often affect demand, as the income elasticity section illustrated. Lower direct taxes raise disposable incomes and, other things being equal, make consumers better off. This might cause less demand for necessities and more demand for luxuries. In recent years improvements in the standard of living have led to greater spending on services and leisure activities. A redistribution of income via more progressive and less regressive taxation might have a similar effect. Furthermore, if average wage increases exceed the rate of inflation, consumers will become better off in real terms and thus have greater flexibility and scope in the use of their income.

(ii) Tastes. Tastes, in particular fashions, change frequently and it may make the demand for certain goods volatile. For instance, the demand for jeans had rapidly risen with greater female independence and individualism. Similarly, concern about health and the greater awareness of the causes of senile illness have increased the demand for brown bread and vegetable oil at the expense of white bread and animal fats. Tastes, of course, can be manipulated by advertising and producers to try to ‘create’ markets, particularly for ostentatious goods, for example, air conditioners which our ancestors survived perfectly well without. Some goods are in seasonal demand (e.g. cooked meat) even though they are available all year round, because tastes change (i.e. more salads are consumed in the summer).

Figure 2.5 A change in quantity demanded and a shift in demand
(iii) The prices of other goods. Goods may be unrelated, or they may be complements or substitutes. The former have no effect but the latter two are significant. If goods are in joint demand (i.e. complements such as cars and tyres) a change in the price of one will affect the other also. Therefore, if the price of cars falls, there is likely to be an increase in demand for tyres. Where goods are substitutes (e.g. Quality Street chocolates and Roses chocolates), a rise in the price of one will cause an increase in demand for the other (and thus the demand curve will shift to the right). Sometimes, technological breakthroughs mean that new products come into the market. For instance, the advent of ink cartridge pens reduced the demand for fountain pens, because the former became a cheaper (and less messy) substitute.

(iv) Population. An increase in population creates a larger market for most goods, thereby shifting demand outwards. For instance, an influx of immigrant workers will raise the demand for most essential goods. Changes in population distribution will also affect demand patterns. If the proportion of old people relative to young people increases, then the demand for products such as false teeth, wheelchairs and old people’s homes will increase to the detriment of gripe water, nappies and cots.

- If price changes there will be a movement along a demand curve known as contractions or expansions of demand
- If the conditions of demand change there will be a shift in the demand curve

⚠️ Exercise 2.1

Answer the following questions based on the preceding information. You can check your answers below.

1. Describe the shape of a typical demand curve.
2. What are ‘inferior’ goods?
3. How does a ‘consumer surplus’ arise?
4. What is the price elasticity of demand?
5. The price of a good falls by 10 per cent but the quantity demanded increases from 100 to 120 units. Calculate the price elasticity of demand.
6. List four factors that influence elasticity.
7. How would you classify a good with a high positive income elasticity?
8. What value would you expect from a cross-elasticity calculation where the two goods are complements?
9. What is the difference between a shift in demand and an expansion of demand?

✅ Solutions

1. Downward sloping from top left to bottom right is the shape of a typical demand curve.
2. Goods are ‘inferior’ where demand for them falls as their price lowers. This is because people substitute other ‘seemingly better’ products from the extra income that the price fall generates.
3. A consumer surplus is the aggregated total amount of utility which consumers of a good gain because the market price was less than they were prepared to pay.
4. Price elasticity of demand shows the responsiveness of demand to a change in price.
5. \(20\%/10\% = 2\). Elastic.
6. Income, substitutes, necessities, time, definition of the market.
7. A superior good has a high positive income elasticity of demand, for example, luxury services.
8. A minus (\(-\)) value.
9. A shift in demand occurs when the conditions of demand change, whereas an expansion of demand is the result of a fall in price.

### 2.2 Supply and market

We looked at the cost of production in terms of the cost of resources, whereas now we consider the supply of goods onto a market by a firm and the operation of an industry.

#### 2.2.1 The supply curve of a firm

The supply curve of a firm shows what it will provide to the market at certain prices. This will be motivated by profit. Usually, it is assumed that suppliers are profit maximisers and produce where marginal cost equals marginal revenue.

What a firm will supply onto a market is largely determined by its average cost of production. This will vary between the short run and the long run.

**Short run**

(a) The shape of the supply curve depends upon which theory of the firm is applied. In the traditional theory, where average cost (AC) includes normal profit, the AC curve is U-shaped in the short run with marginal cost (MC) rising more steeply than AC. Assuming one selling price for all firms (perfect competition – see later), the firm’s average revenue (AR) and marginal revenue (MR) will be identical. Thus the firm will supply output where MC = MR in order to maximise profit. This is illustrated in Figure 2.6. If the market price rises, then it is assumed that the firm has the capacity (or stocks) to increase its sales output. In these conditions, the marginal cost curve becomes the firm’s supply curve. Thus, at price \(P_1\) the firm supplies \(Q_1\) output because \(MC = MR_1\). When price rises to \(P_2\) and \(P_3\), then output is also increased to \(Q_2\) and \(Q_3\) respectively. The firm is also prepared to supply at prices above \(P_3\) where MC = MR.

![Figure 2.6](image)

*Figure 2.6 Short-run supply curve based on marginal cost*
However, there is a minimum level below which a firm will not supply. In the short run it will continue to supply even when making a loss, as long as the firm covers all its variable costs. At $P_2$ and $Q_4$, the supplier’s average revenue will be less than its average cost (loss) but greater than its average variable costs. This means that a loss is made but some of the fixed costs are paid for. A complete shut-down would be financially worse because there would be no sales income to pay for any of the fixed costs. At price $P_1$, average revenue ($AR_1$) just equals average variable costs at $Q_1$ and so output will not be supplied onto the market below $P_1$. Thus the firm’s supply curve equals the marginal cost above the average variable cost curve.

(b) The new theories of the firm incorporate the cost-plus pricing approach. In this, a firm adds a profit margin to its average cost, which has been calculated for a planned level of output, to establish a selling price. This approach, which seems to accord with practice, gives a horizontal supply curve. Supply is made elastic at a market price ($P_1$), which is determined for the whole industry.

The minimum and maximum levels of output occur where AR crosses the AC curve. A profit maximizing or loss minimizing firm will supply only where AR exceeds AC, that is, between $Q_1$ and $Q_2$ in Figure 2.7. Below output $Q_1$ and above $Q_2$ losses progressively increase, at price $P_1$.

Changes in the market price (we are still assuming perfect competition) will lead to changes in output. A higher price such as $P_2$ will lead to a new lower minimum level of supply $Q_3$ and a new higher maximum output $Q_4$.

**Long run**

(a) In the traditional theory, the marginal cost curve also becomes the supply curve in the long run. However, it will not necessarily be upward sloping because AC (and thus MC) can be increasing, constant or decreasing in the long run. The AC was increasing in the short run because of diminishing returns caused by the fixed factor assumption. This assumption is relaxed in the long run and so MC (and thus supply) could be downward-sloping left to right (if economies of scale occur), constant or upward-sloping (diseconomies). In the long run all costs of production, not just variable costs, need to be covered, because there is no fixed factor.

(b) The full-cost pricing theory still retains a horizontal supply curve in the long run. It will be at a higher or lower level than in the short run depending on whether or not

![Figure 2.7 Short-run supply curves based on cost-plus pricing](image)
economies or diseconomies of scale are obtained. There will also be minimum and maximum output levels where AC = AR.

The behaviour of suppliers will also be determined by changes in demand and the nature of the markets within which they trade. These factors are considered in more detail later.

- In the short run under conditions of perfect competition, the supply curve of the firm is its marginal cost curve
- In the short run a firm must cover its variable costs if it is to continue in production
- In the long run, when all costs become variable, the firm must cover all its costs to remain in production

2.2.2 The supply curve of an industry

Assuming that all the firms in an industry are identical, a market supply curve is composed of all the supply curves of the individual producers in the industry. The industry supply curve is an aggregate, which shows what producers are willing to offer for sale at any given price. In Table 2.1, the supply schedules of three firms are combined to show the industry supply at each price.

Thus, the supply curve of an industry is similar to that of its individual component firms but at a higher level.

2.2.3 The elasticity of supply

The elasticity of supply refers to the shape of the supply curve. It shows the reactions of supply to changes in price. Thus, if a small increase in price leads to a larger rise in the quantity supplied, then the supply curve is elastic. In contrast, an inelastic supply curve shows a small increase in the quantity supplied when there is a large price rise. A supply curve of unit elasticity demonstrates the same proportionate change in price and quantity supplied.

If the supply curves are linear (straight line) then the points of intersection with the price or quantity axis indicate their elasticity.

It is calculated by the formula:

\[
\pi = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price}}
\]

<table>
<thead>
<tr>
<th>Price</th>
<th>Firm A</th>
<th>Firm B</th>
<th>Firm C</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>30</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>3</td>
<td>30</td>
<td>45</td>
<td>30</td>
<td>105</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>60</td>
<td>35</td>
<td>135</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>75</td>
<td>40</td>
<td>165</td>
</tr>
</tbody>
</table>
In addition, a supply curve parallel to the output axis indicates perfect elasticity, while a supply curve parallel to the price axis demonstrates perfect inelasticity.

There are several factors which affect the elasticity of supply:

- **Time.** Supply tends to be more elastic in the long run. Production plans can be varied and firms can react to price changes. In some industries, notably agriculture, supply is fixed in the short run and thus perfectly inelastic. However, in manufacturing, supply is more adaptable.

- **Factors of production.** Supply can be quickly changed (elastic) if there are available factors, such as trained labour, unused productive capacity and plentiful raw materials, with which output can be raised. Although one firm may be able to expand production in the short run, a whole industry may not, so there could be a divergence between a firm’s elasticity and that of the industry as a whole.

- **Stock levels.** If there are extensive stocks of finished products warehoused, then these can be released onto the market, making supply relatively elastic. Stock levels tend to be higher when business people are optimistic and interest rates are low.

- **Number of firms in the industry.** Supply will tend to be more elastic if there are many firms in the industry, because there is a greater chance of some having the available factors and high stock. Also, it is possible that industries with no entry barriers or import restrictions could expand supply quickly as new firms enter the industry in response to higher prices.

### 2.2.4 Shifts in supply

The analysis so far has just considered the response of suppliers to differing prices. It has assumed that the conditions of supply which determine the costs of production are held constant. In this section, price is assumed to be unchanged and the conditions of supply are varied. These variations cause shifts in the supply curve.

**An upward shift of supply**

This means that the cost of supply has increased. At existing prices less will now be supplied, as shown on the upward-sloping, elastic supply curve in Figure 2.9. At price $P$, the quantity supplied falls from $Q$ to $Q_1$ as the supply curve shifts from $S_2$ to $S_1$. 

![Figure 2.8 Supply elasticity](image)
This results from:

(i) *Higher production costs*. In the traditional theory of the firm this means higher marginal costs, resulting from increased average costs. In the new theory of the firm it may mean a higher average cost of production or a higher profit margin or a combination of the two. To keep matters simple we will assume unchanged profit margins.

The costs of production may increase because the factors of production become expensive. Thus conditions such as higher wage costs per unit, higher input prices and increased interest rates will lead to reductions in supply.

(ii) *Indirect taxes*. The imposition of an indirect tax, or a higher rate charged, or lower subsidies all make supply at existing prices less profitable. A tax means that the profit margin (or normal profit) is lowered directly and the costs of production are raised indirectly (because of the extra administrative costs). The impact of taxation is demonstrated in Chapter 3.

**A downward shift of supply**

In Figure 2.9, a shift in the supply curve from $S_1$ to $S_2$ illustrates an increase in supply with more being supplied at each price, showing that the cost of production has fallen or lower profits are being taken. Lower unit costs may arise from:

- technological innovations, for example, the advance of microchip technology lowered the cost of computers and led to large increases in supply;
- more efficient use of existing factors of production, for example, introduction of a shift system of working might mean fuller use of productive capacity, leading to lower unit costs. Improvements in productivity may be secured by maintaining output but with fewer workers;
- lower input prices, such as, cheaper raw material imports and lower-priced components could bring down production costs.

**Exercise 2.2**

Answer the following questions based on the preceding information. You can check your answer below.

1. Describe the shape of the short-run supply curve.
2. What is the shape of the supply curve called?
3. Which factors affect the elasticity of supply?
4. What effect will higher wages have on the supply curve?
Solutions

1. The short-run supply curve is a straight line from bottom left to top right.
2. The short-run supply curve is the marginal cost curve in the traditional theory of the firm. With cost-plus pricing, the supply curve is the price (average revenue) line.
3. The elasticity of supply is determined by time, the factors of production, stock levels and the number of firms in the industry.
4. Higher wages will cause the supply curve to shift upwards and parallel to the original supply.

2.3 Prices

2.3.1 Definitions and terms

Price is the money paid by the purchaser of a good or service, for example, the £8 entry fee to the cinema. In economics, we are mainly concerned with the prices of new goods, rather than secondhand ones. This market price is made up of the costs of production in the traditional theory of the firm or costs plus a profit mark-up in other approaches to pricing. The price reflects the economic cost, which represents the total sacrifice made in making one good rather than another.

Occasionally the price does not exactly represent the costs. If the price is higher than the costs this could be because of government-imposed taxation. For example, the actual cost of making cigarettes is about 40 per cent of the sale price, because of excise duty and VAT which are imposed.

In contrast, the provision of a subsidy can bring about an artificially low price. Subsidies are less common, and there are few remaining examples. Many medicines and pills bought via prescription charges are subsidised in Britain’s NHS.

- **Transfer price** – an internal price set for sale within a multinational organisation, so that profit is made in the country with lowest taxes.
- **Value** – this is a subjective term and appears in many phrases concerned with prices.
- **Market value** – the exchange value which is determined by supply and demand forces. This term is used by economists to mean the same thing as market prices.
- **Nominal value or price** – the market price at any given time.
- **Relative value or price** – the market price of a good or service relative to some other. Thus the relative value or price of electronic goods has fallen in recent years relative to the values or prices of other goods.
- **Real value (or price)** – since inflation raises all prices, the nominal price or value of a good may rise but its real value (after making allowance for inflation) may not have. Thus the real value of wages may fall if nominal wage rises are less than the rate of inflation.

2.3.2 The price mechanism

The main characteristic of any market is price. It enables a market to operate. The price charged for a good or service conveys information to buyers and sellers. This information may modify their behaviour and change the nature of the market.

Figure 2.10 shows the intended demand and planned supply at a set of prices. (The epithets ‘intended’ and ‘planned’ are also interchangeable with ‘ex ante’.) It is only at price $P$ where demand and supply are the same. If the demand of consumers and the supply plans of
sellers correspond, then the market is deemed to be in equilibrium. When output $Q$ is sold at price $P$ the intentions of both buyers and sellers are realised.

There is only one equilibrium position in a market. At this point, there is no tendency for change in the market, because the plans of both buyers and sellers are satisfied. At prices and outputs other than the equilibrium ($P, Q$) either demand or supply aspirations could be fulfilled but not both simultaneously. For instance at price $P_1$, consumers only want $Q_1$ output but producers are making $Q_2$ output available. There is a glut, the excess supply being $Q_1 - Q_2$ output. Assuming the conditions of demand and supply remain unchanged, it is likely that the buyers and sellers will reassess their intentions. For instance, firms may not want unsold stocks of goods (because of the financial costs which result) and so may be prepared to accept lower prices than $P_1$ for their goods. This change of behaviour may increase the quantity demanded. Eventually, in simple theory, equilibrium will be reached at $P$.

Conversely, at a price of $P_2$, the quantity demanded, $Q_2$, will exceed the quantity supplied, $Q_3$. There will be a shortage ($Q_2 - Q_3$), demonstrating the excess demand. Some consumers will fail to secure the good and they will adjust their market plans and preferences. They might now be prepared to pay a higher price to obtain the good. This will push price towards the equilibrium position. Thus, in any market there will be one equilibrium position where the market is cleared, and numerous disequilibria where there is imbalance between demand and supply.

As well as signalling information in a market, price acts as a stimulant. The price information may provide incentives for buyers and sellers. For instance, a price rise may encourage firms to shift resources into one industry in order to obtain a better reward for their use. In Figure 2.11, the equilibrium is disturbed when the conditions of demand change. Consumers’ tastes have moved positively in favour of the good and a new curve $D_1$ shows customers’ intentions. Supply is initially $Q$, at the equilibrium, and it is momentarily fixed, so the market price is bid up to $P_1$. However, producers will respond to this stimulus by increasing the quantity supplied, perhaps by running down their stocks. This expansion in supply to $Q_2$ reduces some of the shortage, bringing price down to $P_2$, a new equilibrium position, which is above the old equilibrium $P$. 

![Figure 2.10 Price mechanism and equilibrium](image-url)
The longer-term effects of these changes in the market depend upon the reactions of the consumers and producers. The consumers may adjust their marginal utilities (or preferences) and producers may reconsider their production plans. The impact of the latter on supply depends upon the length of the production period. Generally the longer the production period, and the more inelastic the supply is, the more unstable price will tend to be.

The short-run and long-run equilibrium positions vary between the different types of market. The number and independence of the suppliers and the ease of entry to, and exit from, a market have a crucial bearing on price determination. These factors are considered in more detail in Sections 2.8 and 2.9.

- Price acts as a signal to sellers on what to produce
- Price rises, with all other market conditions unchanged, will act as a stimulus to extra supply
- Equilibrium price is where the plans of both buyers and sellers are satisfied.

### 2.3.3 Prices and resource allocation

In a free market economy the prices of demand and supply combine to solve the problem of resource allocation. Prices will act as a means for consumers to signal to the market what it is that they wish to buy. Prices will indicate to producers where their factors of production will be most profitably utilised. If demand increases for a particular product then, other than in the case of perfectly elastic supply, price will rise. This will offer profitable opportunities for producers who will move extra resources into this line of production thereby expanding supply. If price falls because of a reduction in demand, producers will transfer resources to other lines of production where profitable opportunities are greater. Thus consumers and producers pursuing their own self-interest ensure efficient resource allocation in a competitive market economy.

### 2.3.4 Agricultural prices

These are focused upon and sometimes regulated because of the natural instability in supply. The cobweb theory shows the instability to which agricultural prices are subject.
This involves large fluctuations in the prices of foodstuffs and in the incomes of farmers, both of which governments believe to be economically and politically undesirable.

Price fluctuations may also be caused by demand factors. For instance, industrial demand for raw materials varies erratically, depending on consumer demand for the final product, stock levels and the interest and exchange rate cost of holding materials ready for use. It is usually in the primary goods sector, particularly agriculture and raw materials, where price is most unstable. While price changes generally may have beneficial dynamic effects, frequent and large price variations can be harmful. They can create uncertainty, which is bad for trade, and convey misleading information, which might cause market failures. Thus, governments may intervene in the market and adjust prices in certain circumstances.

**Cobweb theorem**

The instability of price is demonstrated by the cobweb theorem, which is illustrated in Figure 2.12. This theory was originally used to explain the fluctuations in pig prices in the United States. At the initial equilibrium \((P, Q)\) pig farmers felt that the market price was too low, so they transferred resources to other activities. This action lowered the following year’s supply to \(S_1\); but the ensuing shortage raised prices to \(P_1\). This price rise acted as a stimulant and so in the following year more pigs were raised \((S_2)\). However, this increase in supply glutted the market, leading to a dramatic price fall to \(P_2\). Thus, a high price was followed by a high supply and therefore a low price (and then a low supply . . .).

To prevent such price fluctuation for primary products, such as cocoa, tin, etc., buffer stock systems have been developed by the world’s main suppliers. They form cartels to regulate prices, which fluctuate within fairly narrow ranges. The bigger stockholders buy surpluses if a large supply threatens to push prices through the floor. Alternatively, they sell stocks if shortages threaten to force prices above the ceiling. Apart from providing fairly constant prices for buyers, the policy also maintains fairly stable incomes for producers.

**The Common Agricultural Policy**

As members of the European Union, Britain participates in the Common Agricultural Policy (CAP). This is a buffer stock system combined with an external tariff. This tariff
protects European suppliers from foreign competition. The European Union sets target prices for foodstuffs and buys stocks at intervention prices if target prices are not achieved.

The intervention price ($P_I$) is usually above the (world) market price ($P_M$) with the result that excess quantities are supplied ($Q_1, Q_3$). These are the famous butter mountains and wine lakes. Thus a stable and high price is sustained to the benefit of European farmers. A tariff, equivalent to $P_M P_I$, is placed on imports to further protect domestic suppliers, (Figure 2.13).

However, consumers pay a price ($P_I$) above the market price ($P_M$). This entails a loss of consumer surplus. The EU stores the surplus quantity of food. Even if a bad harvest shifts supply to $S_1$, then the same price is received by farmers (although their income falls as quantity is lowered); but the Community does not have the costs of storage. The increase in farm efficiency and high intervention prices led to growing stocks in the 1980s. Thus, in the case of butter, milk quotas were introduced in an attempt to limit the excess supply and reduce the costs and waste of intervention. It went further in the 1990s by bringing in set-aside conditions.

Exercise 2.3
Answer the following questions based on the preceding information. You can check your answers below.

1. What is the difference between a ‘real’ price and a ‘normal’ price?
2. When does excess supply occur?
3. What mainly causes the price instability of agricultural goods?
4. How can producers attempt to overcome the problems that the cobweb theory illustrates?
5. What does the operation of the CAP and similar schemes tend to cause?

Solutions
1. A ‘real’ price allows for inflation whereas a ‘normal’ price is the present face value.
2. Excess supply occurs when the amount supplied is greater than the amount demanded at a given price.
3. The price instability of agricultural goods is caused by wide variations in the supply, which is naturally inelastic in the short run.
4. Producers can overcome the fluctuations in agricultural goods prices by price-fixing within a narrow range. This requires them to co-operate through a cartel and storing surplus stocks, which are then released on to the market if there is insufficiency.

5. The operation of the CAP causes higher prices, excess supplies and storage costs, but it does stabilise farm prices.

### 2.3.5 Interference with market prices

There may be occasions when the equilibrium price established by the market forces of demand and supply may not be the most desirable price. The market price might be too low, as in the case of the wage rate, to enable workers to have an acceptable standard of living. Alternatively the market price might be too high, as in the case of the housing rent, to provide affordable accommodation for people. With such cases the government might wish to set prices above or below the market equilibrium price.

**Minimum price**

If the government sets a minimum price above the equilibrium price (often called a price floor), there will be a surplus of supply created. In Figure 2.14 this surplus is $Q_1Q_2$. If this minimum price was applied in the labour market it would be known as a minimum wage and the surplus would be the equivalent of unemployment.

The problem with price floors is that they cause surpluses of products which have to be stored or destroyed, or unemployment which would be a waste of a factor of production. Another way of looking at the same problem is to state that it leads to a misallocation of resources both in the product and/or the factor market which causes lower economic growth. There also may be the temptation for firms to attempt to ignore the price floor, for example, by informal arrangements with workers, which would lead to a further waste of resources in implementing such arrangements as well as raising issues of fair treatment for the workers involved.

**Maximum price**

If the government sets a maximum price below the equilibrium price (often called a price ceiling), there will be a shortage of supply created. In Figure 2.15 this shortage is $Q_1Q_2$. 

![Figure 2.14 Minimum price/wage](image-url)
If the shortages of supply persist then problems can arise. The limited supply has to be allocated by some means other than by price. This can be done by queuing, by rationing or by some form of favouritism, for example, by giving preference to regular customers. The difficulty with any of these alternative mechanisms is that they can be considered arbitrary and unfair by those who fail to secure the product. A consequence of the shortage can be the emergence of black markets. This is where buyers and sellers agree upon an illegal price which is higher than that which has been officially sanctioned at the maximum price.

Maximum prices can also lead to a misallocation of resources. Producers will reduce output of those products subject to price controls as these products are now relatively less profitable than those products where no price controls exist. In the housing market this may lead to fewer apartments for rent as landowners develop office blocks rather than residential houses. Alternatively the quality of the product may be allowed to drop as a way of reducing costs when profits are constrained by price controls. This failure to maintain property can mean that apartments fall into disrepair.

### 2.4 The business organisation

Businesses in the private sector aim to make profits, which can be distributed to their owners. However, in the public sector, firms often have different motivations. For example, British Universities seek to break even.

The aims and activities of firms may also be constrained in practice by factors such as:

- **The law.** The legal status of a firm affects its behaviour. A public company’s line of business is determined by its Memorandum of Association. The responsibilities of public corporations have been specified in the Act which created them.

- **The nature of the business.** Certain enterprises have important social considerations. Thus, subsidies may be given to rural bus services to provide uneconomic services for passengers. On other occasions subsidies may be given to promote environmentally friendly output, such as wind power. For some firms ethical considerations may be important, for example, confidentiality in private health firms. Other firms, such as
airlines, must ensure that safety precedes profit. Consequently although profit-making may be the major driving force behind private firms, other secondary considerations may have an important role to play in the way they operate.

- **Human nature.** No two entrepreneurs or managers are the same. Thus, prediction about decision-making is difficult. Individuals have different values, morals and perceptions. Even if senior management is united on a course of action, this may be thwarted by the behaviour of other key people in an organisation.

### 2.4.1 Profit maximisation

The specific aim of profit-making is rather imprecise and subject to various interpretations. Thus, in theory, economists distinguish between different types of profit.

- **Normal profit.** The amount of profit needed to keep an entrepreneur in his/her present activity. It is the reward gained for skill in risk-bearing and organising the factors of production. For this reason, normal profit is treated as a cost of production and therefore included in total costs.

- **Abnormal profit.** Profits obtained above the normal profit. This is the excess when total revenue is greater than total costs. It could be the reward for successful innovation (Schumpeter) or the result of market imperfections. These could arise from shortages in an industry which enable a firm to raise prices and take extra profits. Whether these surplus profits remain in the long run depends on the nature of the industry and its market conditions. Generally, if entry barriers exist to prevent new firms joining an industry, then abnormal profits will be retained in the long run.

Profit will be maximised where total revenue exceeds total cost by the greatest amount. It is assumed that the output produced is sold when calculating revenue. The amount received in sales depends mainly on the market price. In practice, a firm’s control over price depends on the nature of the market within which it is selling. The possibilities are considered later.

**Total revenue** is thus obtained by multiplying sales (output) by price. **Average revenue** is calculated by dividing total revenue by the total units sold. **Marginal revenue** is the change in total revenue resulting from the sale of one more unit of output.

The relationship between sales, price and the various revenue concepts is shown in Table 2.2.

<table>
<thead>
<tr>
<th>Sales (in units)</th>
<th>Price</th>
<th>Total revenue</th>
<th>Average revenue</th>
<th>Marginal revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100</td>
<td>100</td>
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<td>0</td>
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<td>2</td>
<td>100</td>
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<td>100</td>
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<tr>
<td>3</td>
<td>100</td>
<td>300</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>90</td>
<td>360</td>
<td>90</td>
<td>60</td>
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<tr>
<td>5</td>
<td>80</td>
<td>400</td>
<td>80</td>
<td>40</td>
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<tr>
<td>6</td>
<td>70</td>
<td>420</td>
<td>70</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>60</td>
<td>420</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>50</td>
<td>400</td>
<td>50</td>
<td>-20</td>
</tr>
<tr>
<td>9</td>
<td>40</td>
<td>360</td>
<td>40</td>
<td>-40</td>
</tr>
</tbody>
</table>
Average revenue and price are always the same. If sales can be increased without the price falling then average revenue, price and marginal revenue will all be equal. However, this will occur only in special circumstances. If in order to sell more, price has to be lowered, then marginal revenue will be lower than average revenue. Extra sales could even result in total revenue falling and thus marginal revenue might become negative. In Table 2.2 this occurs when an eighth unit is sold.

The relationship between average and marginal revenue is similar to that between average and marginal cost. Marginal revenue crosses average revenue at the latter’s highest point and rises/falls more quickly.

**Marginal cost and marginal revenue**

The point of profit maximisation (where total revenue exceeds total cost by the greatest amount) is where $MC = MR$ and $MC$ is rising. Increasing output will be more profitable if marginal revenue exceeds marginal cost because each unit of extra output adds more to total revenue than to total cost. In Figure 2.16 this is up to output 30.

Conversely, if marginal revenue is less than marginal cost, then total profit is reduced (output 30–45) and/or a loss is incurred (output + 45).

The maximum profit also coincides with the biggest point of difference between total revenue and total cost, that is, output 30 on Figure 2.16. The shaded area represents the
levels of output within which profits are made. Below output 5 and beyond output 45, losses are suffered. If the firm increased output above 30 it would still be profitable, because TR > TC, but not operating at maximum profitability (which is where MC = MR).

Breakeven occurs where AC = AR and TC = TR (also AC = AR). There are two points where this happens, as shown in Figure 2.16. A firm will expand output beyond the first point (output 5) as long as marginal revenue exceeds marginal cost. This usually means, in the short run, that marginal cost is falling. What is happening to marginal revenue depends on the market structure and this will be discussed later. The second breakeven point is at output 45 and beyond that marginal cost rises, thereby creating losses. However, it is worth recalling that as total cost includes normal profit in theory, then this output level generates profits.

Note: The top part of Figure 2.16 shows total information, while the lower part shows average calculations. It clearly illustrates the link between the two approaches.

The amount of profit obtained and its nature (i.e. whether it is normal or abnormal) depends upon:

- the market structure within which a firm operates;
- the time period involved.

In practice, there are further complications in deciding whether profits have been maximised. These include:

- the type of industry within which a firm operates;
- previous years’ performances;
- changes in technology and consumer demand;
- general economic conditions.

The analysis which has just been undertaken is usually termed ‘the theory of the firm’. It is based on decision-making by an entrepreneur whose sole objective is profit maximisation. It assumes that he/she has perfect knowledge of the market conditions and access to perfectly mobile factors of production in the quantities required. As a result of this he/she is able to fix output where MC = MR.

- Profit maximisation occurs when MC = MR
- Breakeven (zero) profit occurs when AC = AR or TC = TR

2.4.2 New theories of the firm

Although termed ‘new’, each of the following theories was proposed in the 1930s and developed in the 1960s. They were developed because the decision-making entrepreneur owning and organizing a single plant, single product enterprise became an obsolete model. Most large firms in the private sector were now joint stock companies owned by shareholders but run by paid management. The interests of the board of directors were thus often different from those of the shareholders.

Many new theories have been devised. They can fit broadly under three headings – managerial theories, satisficing theories and behavioural theories. In each case cost-plus pricing is used in determining the price charged.
Full-cost pricing (cost-plus)
In this model of the firm, the price charged is based on the usual costs of production plus a mark-up. This profit margin may be varied at the discretion of the management.
Figure 2.17 shows that there is no unique profit maximising output except by accident. As long as sales (output) exceed 30, then profits will be made because the price is fixed (AR). This approach does not assume diminishing returns to scale as average variable costs are kept constant by dynamic management. As fixed costs per unit fall rapidly, so does AC.

Managerial theories
These theories focus on management as the decision-maker with a maximising aim other than profit, but subject to a profit constraint. Baumol proposed a theory in which sales maximisation was the objective but a certain level of profits was necessary to keep shareholders happy. The underlying aims behind sales maximisation varied from the personal motive of higher salary through to the more laudable company objective of increased market share. Others have interpreted the latter as a profit-maximising goal, but in the long run.

Satisficing theories
These theories assume that management needs to achieve a satisfactory target for at least two major variables. Thus, Marris suggests an approach in which managers sought to
satisfy certain goals of company growth and share price value. From the growth goal, management could gain the satisfactions of power, prestige and pay while a high share value would keep shareholders happy, reduce the threat of predatory stock market takeovers, and enable the management to survive.

**Behavioural theories**

These are somewhat similar to the satisficing theories but differ in that they perceive that the firm’s objective is a compatible set of target figures for the major operating variables. The firm is recognised to be a coalition of various groups, each with its own objectives regarding output, sales, profit, etc. The decision-makers in the firm seek acceptable levels of attainment for each major variable. For example, a managerial approach seeking compatibility between various objectives might expand output and sales even though total profits fell as a result, provided that the profit level was acceptable. However, if the output target was incompatible with total profits it would be abandoned in favour of a more compatible level. Once compatible targets have been agreed, then pricing and output decisions would be made accordingly.

Despite all of the above theories, the ultimate goal of many managers is *survival.*

### 2.4.3 Not-for-profit organisations

Most such organisations are found in the public sector. However, interestingly there are some private-sector firms, notably charity shops, that seek to maximise their income. However, their ‘profits’ are termed ‘surpluses’ and are not subject to corporation tax, because of their tax-exempt status. Increasingly the profit motive, and professional management in accordance with commercial principles, has been inculcated into the operation of charities. For example, Oxfam employs specialists, in addition to unpaid volunteers, to run its retailing activities and is prepared to close down unviable shops. In the case of charities, profits are not the be-all-and-end-all of business because for them it is a means to an end, that is, the relief of suffering.

Public-sector bodies, agencies and government departments are examples of not-for-profit organisations. The Conservative government decision in the 1980s to privatise some nationalised industries and hive off certain civil service functions to separate agencies was based on the assumption that only profit-driven organisations could be efficient. This was a very questionable assumption. Many local government services were also privatised and much public spending became cash-flow/budget limited rather than open-ended. Although value for money and less waste were sought, in many practical cases such restrictions meant a poorer service.

Thus, one clear alternative motive to profit in the public sector is service. However, because the costs of providing the service have to be met out of the public purse, most organisations attempt to operate efficiently. This has meant the implementation of modern commercial practices, target-setting and certain minimum standards of work. For example, social workers have referral response rate targets which are monitored as part of a customer care policy. Similarly schools are set targets in respect of the percentage of their students who pass examinations.

Production by the state sometimes does not yield revenue. Merit goods, such as healthcare and education, are sold at zero price or heavily subsidised. They could earn large amounts of revenue, as shown by the fact that similar services provided privately are substantial profit-makers.
Exercise 2.4
Answer the following questions based on the preceding information. You can check your answers below.

1. What is abnormal profit?
2. Where is profit maximised?
3. What profit is made when average cost equals average revenue?
4. What is the term for pricing where a mark-up is added to the costs of production?
5. What are the main characteristics of a not-for-profit organisation?

Solutions

1. Abnormal profit is the profit in excess of normal profit. It is usually the reward for exploiting a market rather than for basic risk-taking and organizing, which are deemed to be ‘costs’.
2. In the theory of a firm, profit maximisation occurs where MC = MR and MC is rising.
3. When AC = AR, normal profit is made.
4. When a mark-up is added to the costs of production in order to establish a price, it is called full-cost (or cost-plus) pricing.
5. ‘Not-for-profit’ organisations have other goals such as service provision.

2.5 The theory of costs

2.5.1 Costs of production

These are the prices paid for the factors of production, and the opportunity cost attributable to factors already owned. Costs are related to output over a period of time. For simplicity the term ‘firm’ will be used for a productive unit which sells its output at a price, irrespective of whether it is producing goods or services or whether it is in the public sector or the private sector of the economy.

Fixed and variable costs

- Fixed costs are costs which do not change with the level of production. For example, the rent of premises, the depreciation of a machine, the managing director’s salary.
- Variable costs are costs which do change with the level of output. For example, more steel is needed for producing 1,000 cars than for making 10 cars. Variable costs arise from using inputs such as labour and raw materials. In practice there are costs such as sales expenses which are semi-variable, but the analysis is simplified by distinguishing only fixed and variable costs.

Short run

- The short run, in economics, is defined as a period of time in which at least one factor of production is fixed. Thus it is not a time period which can be measured in days or months. This fixed-factor definition means that the level of production in the short run can be increased only by adding more long run variable factors to the fixed factor.
**Long run**

- In the long run, all factors are considered to be variable. However, it is assumed that the quality of the factors stays constant. In the very long run the assumption of fixed technology is removed. Consequently advances in technology can lead to improvements in the productivity of factors of production.

**Average costs and marginal costs**

If fixed costs and variable costs are added they give the total cost of production at different levels of output. The average cost is calculated by dividing the total costs by output.

When average cost is at its minimum, a firm is operating most efficiently. This optimum output point is that of technical efficiency. In Figure 2.18 this is where the marginal cost curve intersects the average cost curve. This is always at the bottom point of the AC cost curve.

Thus the marginal cost of producing different levels of output is crucial information for a firm. When considering the best level of output, producers need to know the incremental changes in costs when output is varied. Marginal cost is the extra cost of increasing output by one unit. Table 2.3 illustrates the various costs which have been defined and shows how they are related.

- If average cost is decreasing then marginal cost will be below average cost, for example, outputs 1–4.
- If average cost is increasing then marginal cost will be above average cost, for example, outputs 5–6.
- If average cost is constant then marginal cost will also be constant.

Generally, marginal cost falls and rises more rapidly than average cost.

![Figure 2.18 The relationship of AC to MC in the short run](image_url)

**Table 2.3** Costs

<table>
<thead>
<tr>
<th>Output (units)</th>
<th>Fixed costs</th>
<th>Variable costs</th>
<th>TC</th>
<th>AC</th>
<th>MC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>10</td>
<td>40</td>
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<td>30</td>
<td>250</td>
<td>280</td>
<td>40</td>
<td>70</td>
</tr>
</tbody>
</table>
2.5.2 Short-run production – diminishing marginal returns

The theory of diminishing marginal returns explains why, eventually, in the short run average cost starts to rise. This is illustrated in the ‘U’-shaped MC curve in Figure 2.18. In Table 2.4 labour is being employed to raise output, but it becomes less productive after the fourth worker is recruited. Marginal output starts to fall, ultimately being negative.

The explanation for the eventual rising average cost is as follows. When a firm increases output in the short run it adds variable inputs, such as labour, to a fixed factor, such as land. Initially total output rises rapidly and the average cost of production falls. This is because of greater specialisation in the use of variable factors and the elimination of under-utilisation in their use. The result is rising productivity and hence reduced average costs. In Tables 2.3 and 2.4 this is shown over the range of outputs 1–4. However, there are limits to the process of specialisation, and eventually extra units of variable factors produce diminishing additions to output. To raise output by a given amount thus requires much greater additional inputs of variable factors and thus average costs rise. For example, if land is the fixed factor and more labour is applied to it, eventually efficiency will be limited as workers get in one another’s way. This causes the marginal cost of production to rise and average output to fall, as shown for outputs 5–7.

Furthermore, if extra pay is given to attract the extra labour needed to increase output, the marginal costs rise steeply. This happens because the extra pay over the previous wage is given to all of the workers, not just the additional new recruit. Thus, production in the short run is characterised by diminishing returns and rising average costs eventually. These are different sides of the same coin, given our assumptions about the standard quality of the factors of production.

U-shaped average cost curve

As production increases, total fixed costs remain unchanged in the short run. However, because they are spread over more units of output, average fixed costs fall, as in Figure 2.19.

Variable costs will change with output. They are, therefore, marginal costs and the marginal cost curve will cut both the AVC and ATC curve at its lowest point. When AVC is added to AFC one gets ATC. Note that as AFC gets less, the gap between AVC and ATC narrows.

Table 2.4 Negative marginal output

<table>
<thead>
<tr>
<th>Number of workers</th>
<th>Total output</th>
<th>Average output</th>
<th>Marginal output</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
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<td>20</td>
</tr>
<tr>
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<td>2</td>
</tr>
<tr>
<td>7</td>
<td>119</td>
<td>17</td>
<td>−13</td>
</tr>
</tbody>
</table>
2.5.3 Long-run production – variable returns to scale

In the long run, because all factors of production are variable a firm can change its scale of production significantly. It could for example build a new factory and recruit more labour. The returns from such investment will vary, according to the efficiency shown.

There are three different possibilities:

- *increasing* returns to scale, that is, a given percentage increase in inputs will lead to a higher percentage increase in output;
- *constant* returns to scale, that is, a given percentage increase in inputs will create the same percentage increase in output;
- *decreasing* returns to scale, that is, a given percentage increase in inputs will cause a smaller percentage increase in output.

Clearly a firm seeks the first. If it is achieved we can say that *economies of scale* have occurred. These will be explained later. Conversely, if decreasing returns accrue then *diseconomies of scale* are operating.

**Long-run average costs**

The implication of the variable returns to scale is that in the long run average costs will also be variable. Since there are no fixed factors, there are no long-run fixed costs. The three possible shapes of long-run average cost are shown in Figure 2.20. Clearly LRAC₁ would be a situation of increasing returns to scale and falling average cost.

However, it is usually assumed that the long-run average cost curve will be *saucer-shaped*, as in Figure 2.21. Also, that it is composed of a series of different short-run average cost curves. Each short-run average cost curve shows a different scale of production, and once diminishing returns start, the firm varies its factors, thereby moving to a new short-run curve. Between outputs 0 and A economies of scale will occur as output increases and so average costs fall. From A to B there are constant costs (and constant returns) but after B diseconomies of scale result. If the firm realises the latter, then in theory it could cut back production or seek a more efficient combination of its factors of production.
2.5.4 Short-run and long-run production decisions

The distinction between fixed costs and variable costs is important in deciding whether firms should cease production. The firm is obliged to cover its fixed costs whether it undertakes production or not. For example, even when the firm produces no output it still incurs costs such as insurance charges, depreciation on assets, mortgage repayments, rent on premises, and so on. However, variable costs are incurred only when the firm undertakes production. For example, when the firm produces no output it incurs no costs from purchasing raw materials or charges for power to drive the machinery, etc. Once a firm has incurred fixed costs, its decision about whether to continue producing is therefore...
determined by whether its total revenue (the amount it earns from production) is sufficient to cover its total variable costs. Therefore, we must consider the circumstances in which the firm will be prepared to produce in the short run when fixed costs exist, and the circumstances in which it is prepared to produce in the long run when there are no fixed costs.

In the short run fixed costs are the same whether or not the firm undertakes production. If total revenue just covers the total variable (running) costs incurred by producing, then the firm is neither better off nor worse off if it continues production. Clearly, if total revenue is greater than total variable costs, then the firm makes at least some contribution towards covering the fixed costs already incurred by continuing in production. To cease production would leave the firm with a loss equal to its fixed costs, whereas if the firm undertakes production it will at least have a surplus over variable costs to set against its fixed costs, therefore incurring a smaller loss.

If the total revenue is less than total variable cost on the other hand, then the firm will be better off by ceasing production altogether. In this situation, the firm’s total loss is equal to its fixed cost by not producing, compared with a loss equal to the deficit of variable costs added to the fixed costs if it undertakes production.

If total revenue exactly covers total variable costs this implies that average revenue, that is, price, exactly covers average variable costs.

Firms will therefore undertake production in the short run, if the price at which their product is sold is at least equal to the average variable cost of production. When average revenue and average variable cost are equal, total revenue is exactly equal to total variable cost. However, unless price at least covers the average total cost, firms experience a loss in the long run, where fixed costs count. By definition, when average revenue exactly equals average total cost, firms break even. While they will be prepared to accept losses in the short run as long as total variable costs are covered they cannot accept losses in the long run. In the long run all costs become variable and, hence, all costs must be covered. Therefore, if firms are to continue in production in the long run, the price at which their product is sold must at least equal the average total cost of production.

- In the short run average revenue must cover average variable costs.
- In the long run average revenue must cover average total costs.

### 2.5.5 Economists’ and accountants’ understanding of costs

An accountant will view the cost of producing a product in terms of its historical cost. This means the amount actually paid to factors of production to make the product. An economist, on the other hand, will view the cost of a product in terms of its opportunity cost. This means cost is reckoned in terms of the forgone revenue which would have been earned if the factors of production had been put to their next best alternative use. The economist is concerned with the allocation of resources to their best possible uses and so is measuring cost from a different perspective to that of an accountant. An example will make this distinction clearer.

#### Example 2.A

Suppose that a self-employed trader sells goods worth £500,000. His/her accounts are set out in Table 2.5. In accounting terms his gross profit would be £40,000.
Table 2.5  Self-employed trader

<table>
<thead>
<tr>
<th></th>
<th>£</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
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</tr>
<tr>
<td>Materials</td>
<td>250,000</td>
</tr>
<tr>
<td>Labour</td>
<td>150,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td>40,000</td>
</tr>
<tr>
<td>Other expenses</td>
<td>20,000</td>
</tr>
<tr>
<td>Gross profit</td>
<td>0040,000</td>
</tr>
</tbody>
</table>

Suppose, however, that the premises used for the business could be put to alternative use and earn a rent of £10,000. The capital needed in the business could have been invested and earned £15,000 in interest. Finally the trader’s own labour could have earned income in other employment, earning £35,000. The change in the profit/loss account can be seen in Table 2.6.

Table 2.6  Self-employed trader

<table>
<thead>
<tr>
<th></th>
<th>£</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales less historic costs</td>
<td>40,000</td>
</tr>
<tr>
<td>Opportunity costs</td>
<td>60,000</td>
</tr>
<tr>
<td>Gross loss</td>
<td>(20,000)</td>
</tr>
</tbody>
</table>

From the economist’s perspective the trader has now made a loss. When opportunity costs are considered, the trader should take the decision to put his assets to alternative uses and employ his own labour another way.

Exercise 2.5

Answer the following questions based on the preceding information. You can check your answers below.

1. What is the definition of fixed costs?
2. In what time period are all factors of production variable?
3. What is technical efficiency?
4. Why do diminishing returns occur in the short run?
5. Define constant returns to scale.
6. Using the data in Table 2.3, calculate average fixed cost and average variable cost. Plot these on a graph with the average total cost and briefly explain the result.
7. When should a business cease production in the short run?
8. What costs need to be covered in the long run?

Solutions

1. Fixed costs are those which do not change with the level of production.
2. All factors of production are variable in the long run and in the very long run.
3. Technical efficiency is the point where average cost is at its lowest.
4. Diminishing returns occur in the short run because one factor of production is fixed.

Thus, output can be raised only by adding more units of a variable factor. This
adds progressively smaller amounts of extra output and leads to increases in average cost.

5. Constant returns to scale means that for a given percentage increase in inputs there is the same percentage increase in output (and thus no change in average cost).

6. Costs:

<table>
<thead>
<tr>
<th>Output</th>
<th>AFC</th>
<th>AVC</th>
<th>ATC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>7.5</td>
<td>17.5</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>7</td>
<td>4.3</td>
<td>35.7</td>
<td>40</td>
</tr>
</tbody>
</table>

Graph:

ATC is made up of AFC and AVC. AFC continues to decline as output increases but AVC declines between output 3 and 4 before rising due to the onset of diminishing returns. As a consequence, ATC rises after output 4 as the continued decrease in AFC is not sufficient to counter the rise in AVC.

7. When revenue falls below variable costs, as continued production only increases the total losses being made.

8. In the long run all costs become variable. Therefore all costs must be covered. This will mean average revenue covering average total costs.

2.6 Large-scale production

2.6.1 The growth of firms

Firms grow through internal expansion and integration. A firm may expand by producing and selling more of its existing products or by extending its range of products. Thus, the
general retailer Boots started off as Jesse Boot’s, a Nottingham chemists shop. Such successful firms have often developed through enterprising management, which has utilised a willing workforce, unused capacity and available finance.

Integration occurs when firms join together, by either merger or takeover. A **merger** is an amalgamation of at least two firms into one organisation, for example, Cadbury-Schweppes. It is usual for shareholders in the old firm to exchange their old shares for shares in the new firm in agreed proportions.

The Monopolies and Mergers Commission, renamed the Competition Commission in April 1999, investigates mergers and recommends a decision to the Trade and Industry Secretary. For example, in 1998 it recommended that Bass be allowed to buy Carlsberg-Tetley for £200m, provided that it then sold 1900 pubs. However, trade minister Margaret Beckett blocked the bid and overturned the MMC ruling because of Bass’s ‘significant increase’ in market power as a producer and wholesaler of beer.

A **takeover** differs from a merger in that the initiative for acquisition comes from the offering company and the board of the target company is opposed to, or not fully in favour of, the bid. In March 2000, the Royal Bank of Scotland made a hostile bid for (and took over) Nat West. With mergers there is usually willing co-operation between the two firms. Takeovers are financed either with cash and/or an offer in shares in the acquiring companies, with maybe a cash adjustment. The price offered is nearly always higher than the current Stock Exchange valuation. The Stock Exchange has a Takeover Panel which vets the procedures to ensure fair and equal treatment for all the shareholders of the target company.

The general objective of mergers and takeovers is to increase profits, usually in the short run, and earnings per share. This has been criticised as short sighted as it may reduce longer-term product development and market development.

There are three main types of integration: horizontal, vertical and diversification.

**Horizontal integration**

Firms in the same industry and at the same stage of production join together. This type of merger occurs most frequently in brewing; for instance Scottish and Newcastle Breweries took over many regional breweries in the United Kingdom in the 1980s and 1990s and then merged with Courage Brewery in 1995.

The reasons for such integration include:

- **To obtain the benefits of economies of scale.** A big retailer will have much more buying power than two smaller retailers and so will be able to lower their input costs. The increased financial muscle enables the large retailer to negotiate better terms with their suppliers. In manufacturing industry, horizontal integration was justified in the 1960s as a ‘synergy’ between companies on the basis of ‘2 + 2 = 5’. However, in some cases it was unsuccessful when rationalisation was slow. A notable example of failure was when Asda and MFI demerged.

- **To increase market share.** If a takeover reduces competition, the acquiring company can probably raise its market share. In retailing, mergers usually mean more outlets through which to sell the products of the two companies. Outside retailing, horizontal mergers have declined since the 1970s, partly because of the legislation on monopolies.

- **To fight off imports.** This defensive motive was behind the proposed GEC–Plessey merger (which the Department of Trade supported but the Ministry of Defence opposed in evidence to the Monopolies Commission), as they competed in an electronics industry
which the Americans and Japanese were infiltrating from their dominant international positions.

- **To pool technology.** The wasteful duplication of research facilities can be avoided and the beneficial sharing of technical ‘know-how’ can be developed when manufacturers integrate, for example, Renault–Nissan.

**Vertical integration**
Vertical growth occurs when one firm moves into another stage of production, which might otherwise be independent, in the same industry. This integration may be *backwards* towards the source of supply, for example, Ross Foods, which sells frozen food, purchasing its own fleet of trawlers; or *forwards* when the producer buys out stages nearer the market, for example, Ross Foods purchasing a retail outlet. The reasons for vertical integration include:

- **The elimination of transaction costs.** This will increase cost efficiency between the various stages of production, by reducing delivery costs and eliminating the profits of middlemen. This partly explains the mergers in the brewing industry.
- **Increasing entry barriers.** By gaining more control over supplies and/or sales, it will become more difficult for new competitors to enter the market.
- **Securing supplies.** By controlling its own sources of supply as a result of backward integration, a firm can achieve more flexible production. For instance a brewer experiencing increased demand could readily use his own lorry fleet to collect hops from stock and thereby temporarily raise production levels.
- **Improving the distribution network** with better market access. Forward integration into marketing enables a firm to control the conditions under which its goods are sold. For instance, a brewer can dictate pricing, advertising and display of his beer to a ‘tied’ public house.
- **Gaining economies of scale;** and **making better use of existing technology.**

These benefits are common to vertical and horizontal integration.

**Diversification**
This occurs when one firm expands into an industry with which it was previously unconnected, for example, Virgin records into travel. Some mergers are classed as *lateral* where the goods being newly produced by the expanding firm have a close link with their main products, for example, cars and lorries.

However, increasingly integration creates conglomerates, that is, groups of companies pursuing different activities in different industries. The mergers of the 1980s have led to many of Britain’s most successful enterprises, for example, Hanson Trust, becoming financial holding companies, rather than integrated producers of goods and services. These organisations sell off the inadequate parts of underperforming companies and develop those with potential. The conglomerates thus behave like investment bankers.

A good example is the food and drinks giant Grand Metropolitan, which bought Wimpy beef-burgers from United Biscuits and within a year sold off two-thirds of the outlets (to a group of managers).

The reasons, other than short-term profit motives, for diversifications are:

- **To minimise risks.** If its main line is subject to trade fluctuations or going out of fashion, a firm may diversify into an expanding area to protect itself, for example, British American Tobacco purchasing Eagle Star. Such takeovers seek financial security, and higher corporate growth;
To make full use of expertise. Dynamic management can use the expertise residing in a company in seemingly unconnected areas. Thus Centrica, initially a company selling gas, took over the AA, a motoring organisation, so as to fully utilise its large customer data base and sell a greater range of products.

To achieve economies of scale. Particularly in administration. Thus a merger might lead to the fuller utilisation of, and greater return from, departments such as data processing, accounts and exports.

However, mergers are not always successful. Sometimes diseconomies of scale occur when merged managements experience personality clashes and become divided. Rationalisation does not always lead to lower cost production and may alienate customers and workers. The same is true of takeovers which lead to asset stripping and to less production and redundancies. Indeed, some have argued that the costs to society outweigh the private gains; thus the proponents of a merger should have to ‘prove’ its virtue rather than the critics have to demonstrate its ‘guilt’ (against the public interest) as happens now.

In 1995, the phrase ‘vertical disintegration’ entered the dictionary. This explains the hiving off by a company of many of its service sectors or product centres, often to management buyouts, in order to reduce costs and concentrate on its core business. Such a policy is not quite the same as a demerger, where a firm sells off a brand (or brands) to an existing large company. The latter is often a rival and thus augments its market share. In 1995, Forte sold its chain of Little Chefs, Travelodges and Welcome Breaks to Whitbread, which already owned Beefeaters, Travel Inns, Brewers Fayres and Pizza Huts.

2.6.2 Economies of scale

The advantages of producing on a large scale are known as the economies of scale. Generally, by producing in large quantities, the average cost per unit can be reduced because fixed costs are spread over more units.

It is useful at this point to make a distinction between increased production and increased productivity. Increased production occurs when more is produced, but this may be because more inputs are applied and it does not mean greater efficiency. However, higher productivity means more produced per person, and that is more efficiency. It is interesting to note that Britain experienced increased productivity in the 1980s in many industries at a time of falling production, as a result of the rapid shedding of labour and the slower fall in output. In absolute terms, Britain’s productivity is low compared to other developed countries, especially the United States where productivity is 40 per cent above that in the United Kingdom.

When the advantages of expanding the scale of operation accrue to just one firm, these economies are termed internal. They can be obtained in one plant, belonging to a firm, or across the whole company. The main internal economies are as follows:

- Technical economies. These relate to the scale of the production and are usually obtained in one plant. Large-scale operations may make greater use of advanced machinery. Some machines are only worth using beyond a minimum level of output which may be beyond the capacity of a small firm, for example, robots used in car assembly. Such equipment may facilitate the division of labour. In addition, more resources can be devoted to research in large firms, because the cost is borne over more units of output, and this may lead to further technical improvements and subsequent cost reductions, for the whole company.
• **Financial economies.** It is usually easier for large firms with household names to borrow money from commercial banks and raise funds on the Stock Exchange. Similarly, their loans and overdrafts will probably be charged at lower interest rates because of their reputation and assets.

• **Trading economies.** Large firms may be able to secure advantages both when buying inputs and selling their output. They could employ specialist buyers and, through the quantity of their purchases, gain significant discounts from their suppliers.

  Similarly, bulk selling enables a large firm to make savings in distribution costs, the time and cost of sales people and advertising expenses.

  These savings are more marked when many products are sold together in related markets. Thus, one big advantage of Nestlé’s takeover of Rowntree Mackintosh was that the goods of each could be marketed together, with little extra total cost, thereby reducing the distribution costs of each product sold.

  If a large firm produces several products in different markets, then one failure is unlikely to cause the closure of the whole conglomerate. Thus, trading risks can be spread when a wide range of products is sold.

• **Managerial economies.** These are the many administrative gains which can be achieved when the scale of production grows. The need for management and supervision does not increase at the same rate as output. Specialists can be employed and their talents can be fully utilised in personnel, production, selling, accountancy, etc. Such organisational benefits may lower the indirect costs of production and lead to the efficient use of labour resources.

However, it is possible for general advantages to be obtained by all of the firms in an industry, and these are classed as *external economies of scale*. Most of these occur when an industry is heavily concentrated in one area. The area may develop a reputation for success, for example, computers and electronics in Silicon Glen in Scotland. There may be a pool of skilled labour which is available, and this may lower training costs for a firm. Specialised training may be provided locally in accordance with the industry’s needs. This might be provided by a training board to which firms contribute to gain access to the available expertise. Furthermore, a localised industry may attract to it specialist suppliers of raw materials, components and services, who gain from a large market and achieve their own economies of scale, which are passed on through lower input prices. Occasionally, firms in an industry share their research and development facilities, because each firm individually could not bear the overheads involved but can fund a joint enterprise.

### 2.6.3 Diseconomies of scale

These exist when the average cost rises with increased production. If they are specific to one firm they are categorised as internal.

• **Technical diseconomies.** The optimum technical size of plant may create large administrative overheads in its operation, thereby raising TAC, even though the production cost is lowered.

• **Trading diseconomies.** With large-scale production, products may become standardised. This lack of individualism may reduce consumer choice and lead to lower sales. In addition, it may be difficult to quickly adapt mass-produced goods to changing market trends. Marks & Spencer have experienced this problem in recent years.
Managerial diseconomies. As the chain of command becomes longer in an expanding hierarchy (when productive capacity grows), senior management may become too remote and lose control. This may lead to cross-inefficiency (complacency) in middle management and shop floor hostility. A concomitant of this is the generally poor state of labour relations in large organisations, which are more prone to industrial stoppages than small firms. This is partly because the trade unions are better organised. Other administrative weaknesses faced by increasingly large organisations are the prevalence of red tape and the conflict between departmental managers who have different objectives and priorities.

However, there may also be general disadvantages which afflict all firms as the scale of the industry grows. The main external diseconomy is technical. If a resource is overutilised then shortages may arise. A shortage of labour might lead to higher wages in order to attract new recruits, while a shortage of raw materials might lower output. Both changes would raise the average cost of production.

Exercise 2.6
Answer the following questions based on the preceding information. You can check your answers below.

1. Who investigates mergers and takeovers?
2. Suggest three reasons for vertical integration.
3. Distinguish between internal and external economies of scale.
4. Give an example of a trading economy of scale.
5. Give two examples of diseconomies of scale.

Solutions
1. The Monopolies and Mergers Commission/Competition Commission investigates mergers and takeovers.
2. Vertical integration occurs to eliminate transaction costs, increase entry barriers, secure supplies and improve the distribution network, gain economies of scale and make better use of existing technology.
3. ‘Internal’ economies of scale are achieved by one firm through its own endeavours, whereas ‘external’ economies are advantages available to most firms in that industry.
4. An example of a trading economy would be the supply of various similar products in one market, for example, different brands of chocolate produced by Nestlé.
5. Diseconomies of scale might be administrative duplication and the conflict of objectives between different departments in a large organisation.

2.7 Small firms
2.7.1 Definition
There are various criteria for classifying firms by size – number of employees, turnover, assets. The importance of these criteria also differs between industries, making definition difficult. Thus the 1971 Bolton Committee (updated by the 1979 Wilson Committee) identified three key characteristics:

- relatively small market share;
management in a personal way;
- independent of large enterprises.

These created definitions of smallness such as the following:
- 25 employees or fewer in construction;
- five vehicles or fewer in road haulage;
- annual turnover of £185,000 or less in retailing.

### 2.7.2 Growth

The small firm sector of the economy grew significantly in the 1980s as more people became self-employed (Figure 2.22). The number of self employed peaked in the mid 1990s and has subsequently fallen back slightly.

Apart from self-employment, other types of small firms are worker co-operatives, franchises, management buyouts and private companies. Many small firms are found in retailing, financial and business services and personal services, as opposed to manufacturing, where larger firms predominate, utilising economics of scale.

The revival of the small business sector has been helped by several factors. The enthusiasm for business was encouraged by the ‘enterprise culture’ of the early 1980s. Small firms found it easier to obtain capital with the development of the Alternative Investments Market, AIM, and the availability of new supplies of venture capital. Many new measures were also introduced by government to assist small firms.

Government policy since 1990 has continued to support small- and medium-sized enterprises (SMEs). The 2002 budget cut the corporation tax for small companies by 1 per cent and reduced the red tape and compliance costs imposed on small businesses by the VAT and payroll administrative systems. In conjunction with the Government’s Small Business Service 200 new enterprise areas have been started which receive investment tax credits and small firms do not have to pay stamp duty on all business property transactions in these areas. The 2004 budget simplified and extended research and development tax credit schemes to make them available for small firms. A network of Learning and Skills Councils have been established which support small firms by subsidizing and providing training, for example, by the modern apprenticeship scheme. Greater emphasis is being placed on creating a more skilled labour force complemented by advice on how to be a successful entrepreneur. Alongside this many local authorities provide facilities and workspaces where small firms have access to shared facilities, like fax, receptionist, etc.

![Figure 2.22 Self-employment](image-url)
2.7.3 Survival

These improvements have probably helped to overcome some of the traditional weaknesses of small firms. Loan capital and working capital are now more readily accessible because of the government schemes, and its tax changes, such as the lower rate of corporation tax for small companies, and new tax reliefs allowing start-off losses to be offset against early profits, also help. The ‘workspaces’ idea may help to lessen the administrative burden on small firms, although VAT records still need to be kept. Useful advice is more forthcoming from the advisory services provided by the major clearing banks, but management defects, such as inadequate budgeting and forward planning, will tend to remain. However, no amount of advice, finance and skill can overcome the central weakness which afflicts most small businesses – their dependence on a single good/service makes them highly susceptible to changes in demand.

Despite these weaknesses, small firms survive. They can adapt to customer needs readily, provide an individual service and offer variety in many markets where standardisation is the norm. Small retailers sometimes have a local monopoly, because of the transport limitations on non-car owners, and use their market position to good advantage. Generally, small traders tend to be flexible in approach and gain the benefits of their personal involvement in the business.

2.7.4 Value

The small-firm sector is a significant employer, producer and investor in the British economy. As small firms tend to be service oriented, they are labour intensive. Thus at a time of high unemployment and de-industrialisation, the revival of small business is most opportune. Some empirical evidence suggests that there is a correlation between the number of small firms and economic growth. This ties in with the argument that small firms are the seedbeds of the economy and with the anecdotal illustrations of market traders expanding into retailing supremos. Many important innovations have been made by small firms, particularly recently in information technology. A good example of these points is Quality Software Products. This firm was founded during the recession of the 1980s and developed into a world-leading financial-applications software business.

It is usually claimed that the existence of many small firms in an industry may lead to more competition and lower prices. This may keep inflation down. Similarly, if small firms have better labour relations and exercise closer supervision, as is usually claimed, they will probably be more efficient than some large firms and thus have lower production costs.

Furthermore, small firms tend to be more adaptable to market changes and this flexibility can give them a competitive edge.

Small firms also nurture entrepreneurial talent. James Dyson (Dyson electrical products) and Richard Branson (Virgin) are often cited as examples of this.

However, it is often argued that there are still too many constraints on small firms, inhibiting their development. These include:

- too much red tape, particularly in planning and tax procedures;
- VAT regulations, although successive budgets in the 1990s have raised the threshold for small firms.
- financial discrimination, because of their riskiness, which led to excessive collateral and high capital input being required by British banks.
Exercise 2.7

Answer the following questions based on the preceding information. You can check your answers below.

1. Why has the small-firm sector of the economy grown in the 1980s and 1990s?
2. How has the government helped small firms?
3. How do small firms benefit an economy?

Solutions

1. The small firm sector has grown because of the growth of the service sector alongside the encouragement of the ‘enterprise culture’ which has promoted the growth of self-employment.
2. Government help has taken the forms of reductions in taxation, the extension of advisory services and training faculties and the availability of tax credits for research.
3. Small firms benefit an economy because they provide employment and new ideas/products, create competition and operate flexibly.

2.8 Market structures

2.8.1 Markets in economies

The word ‘market’ is used in many contexts. In economic theory a market is where goods and services are bought and sold, although it may not be an actual place. For instance, foreign currencies are bought and sold through international telephone deals and telex transfers between bank accounts. The buyers and sellers must be in contact and in modern societies the exchange is via the medium of money. The traders involved are willingly participating in the exchange and usually require information on the prices of the goods/services involved.

Most markets in practice are unorganised and decentralised. Governments may influence markets generally through legal constraints but they do not decide how much is traded. This is usually determined by price, which acts as a signal and as an incentive.

There are many markets in all types of modern economy, ranging from large-scale and official, for example, the Stock Exchange, to small and illegal, like a drug addict buying heroin from a street pusher. Some markets are very specialised, for example, the copper exchange on the London Metal Exchange. Markets tend to be dynamic, expanding and becoming more sophisticated to meet particular needs. Thus, not only can major commodities be bought and sold at prevailing prices (spot market), they can also be purchased now for an agreed price to be supplied at a future date. Such a futures market meets industry’s need to plan future production.

Markets are also segmented. They can be divided by:

- **Geography.** The market for primary products may be international, national, regional or local depending on the suppliers and customers involved.
- **Time.** Demand and supply conditions can change, particularly when services are sold. For instance, travel on the railways may be cheaper from Monday to Thursday (than on
Friday) for the same service. Such price discrimination between off-peak and peak times makes the market less homogeneous.

- **Customer type.** Suppliers may discriminate between their customers. For instance, large regular customers may get preferential quantity discounts off the listed prices, which other consumers pay.

Economic analysis needs to simplify the understanding of all these diverse markets. Thus we shall consider the *product or goods markets*. These markets refer to newly produced goods and services, and avoid the pricing of secondhand goods.

### 2.8.2 Forms of market structure

The purpose of this section is briefly to describe the main characteristics and assumptions which define each form of market. The detailed operation of each form is considered in the next section.

There are two extreme and largely theoretical forms of market: *perfect competition* and *monopoly*, which are polar opposites. In between, under the broad heading of *imperfect competition*, there are three other structures which have more grounding in reality. These are *monopolistic competition*, *oligopoly* and *duopoly*. All of these market structures are defined largely in terms of the number of suppliers in the market (Figure 2.23).

**Perfect competition**

This structure describes an imaginary situation in which no one buyer and no one seller can determine the market price. All of the many buyers and sellers wish to trade as much as possible at the ruling market price, which is determined by the interaction of demand
and supply. The buyers and sellers have perfect information about the product. This good or service is homogeneous (uniform) and there is no government interference in its production or sale. Suppliers can freely join or leave the industry, as there are no entry barriers and there is perfect mobility of goods and factors of production. The firms are profit maximisers. The Stock Exchange is often cited as the nearest actuality to this market form.

**Monopoly**
This term is subject to two interpretations. First, in theory, it denotes a market in which there is one supplier and many consumers. Thus in a pure monopoly the firm is the industry, and thereby controls market supply. It can either fix price and let demand determine the amount supplied, or fix supply and let demand determine the market price.

In a capitalist economy, a monopolist would be a profit maximiser. However, in a planned economy it is unlikely that state monopolies would have such a goal. In the UK mixed economy the previously nationalised industries operated like monopolies and sought large profits, for example, gas and electricity. Although facing competition from one another in the market for energy, each had a monopoly in its own fuel since there were entry barriers which limited the ability of new firms to enter the market. However, the law creating the sole supplier right of these public corporations is not sacrosanct, as the Conservative government showed by amending it to allow limited competition in gas supply.

Second, in practice British legislation identifies a firm in the private sector as holding a monopoly if its market share exceeds 25 per cent. As we shall see, this definition includes duopolists and oligopolists.

**Imperfect competition**
Between perfect competition and monopoly, several forms of market exist, exhibiting some of the characteristics of the two extreme structures.

(i) **Monopolistic competition.** There are a large number of producers who supply similar but not homogeneous products. The products are differentiated in style, image and price. There is not one prevailing market price, and thus firms vary their prices in attempting to raise profits and gain market share at the expense of their rivals. Such price searchers are different from the ‘price takers’ of perfect competition and ‘price makers’ of monopoly.

The many consumers lack perfect knowledge but have a choice of products. This choice may be extended when new firms enter the industry, perhaps being attracted in the long run by the prospect of abnormal profits.

(ii) **Oligopoly.** In this structure there are a few large firms who dominate the market. There is usually a very high concentration ratio with price and non-price competition (e.g. free offers, etc.) between the major firms, most of whom produce several branded goods in the same market. Their behaviour is often dependent on their rivals’ actions and hence there can be some degree of uncertainty over how they will act. As a consequence price stability is often associated with oligopolistic behaviour as firms choose not to raise or lower prices as they cannot be sure how rival firms will react to any such price changes. The consumers in oligopolistic markets lack detailed market information and are susceptible to the market strategies of the suppliers. These strategies depend upon whether there is competition or collaboration between the suppliers.
In a competitive oligopoly, the features of monopolistic competition apply. However, the large firms in an oligopoly may collude together; oligopolists may raise the total profits which can be made in the industry and thereby increase their own profits. In contrast, cut-throat competition renders profit-making more difficult. The price-fixing and market-sharing tactics, which could be used by collusive oligopolists, are likely to be investigated by the Director General of Fair Trading as they would constitute restrictive trading practices. However, it could be argued that consumers may benefit from an oligopoly through a wide range of branded goods, price stability and after-sales servicing. In addition if price stability facilitates accurate forward planning by producers, then consumers might gain from better products and lower costs of production in the long run.

It is unlikely that new firms will enter an oligopoly. The entrenched power and dominance of the large firms enables them to fight off new local entrants, as shown in the petrol market, but multinationals may have more impact and success.

(iii) Duopoly. This market form is similar to oligopoly but composed of two, usually large, firms. Each producer has some control over price and output, but must consider the possible reactions of the competitor firm. Duopolists, like oligopolists, can act competitively or collusively. The output of the UK detergent industry is almost completely in the hands of Unilever and Procter & Gamble, each of whom produces many brands.

2.8.3 Efficiency

This much-used (and -abused) term has various adjectives applied to it in economics. However, it is possible to discern two general meanings and associate descriptors with each aspect of economic performance.

- Technical efficiency – production at the lowest cost. This is usually used to describe the efficiency of a firm in the production of a good. An extension of this idea to the whole economy is productive efficiency, which is maximised when an economic system operates at the limit of the production frontier. This general meaning tries to relate inputs to output.

- Allocative efficiency – the best use of resources to produce goods and services which people want. The idea is to maximise the welfare of consumers. When each market in an economy operates so as to maximise consumer satisfaction, there is said to be economic efficiency. This general meaning relates the use of resources to consumer satisfaction.

The issue is further complicated by time. The most efficient firm at one point in time may not be so at a later date. For example the relative technical efficiency of one firm may change over time as a result of investment. For the whole economy, this would be shown by an outward movement of a production possibility curve. Similarly, people’s preferences for goods may change and so utilities alter, thereby affecting allocative efficiency.

The result of such changes is that identification of productive and economic efficiency for the whole economy at a macro level is impossible. Thus, it makes more sense to concentrate on considering technical and allocative efficiency in markets in a micro analysis.

Spotting efficiency

Technical efficiency is shown when a firm (or industry) produces at the lowest point on its average cost curve, that is, where MC crosses AC.
Allocative efficiency occurs when the price charged to the consumer equals the marginal cost of its supply, that is, \( P = MC \). This indicates that the value to the consumer equals the cost of production to the supplier. The price paid indicates the utility gained by the consumer and this satisfaction is represented by the demand curve. Conversely, the marginal cost of the unit of output is shown by the supply curve. Thus, allocative efficiency occurs where demand equals supply. This explanation of allocative efficiency makes a significant simplifying assumption. This is that the cost of the output is the cost to society. In practice, it is the cost to the firm, which is a private cost and not necessarily the total cost to society. This latter includes externalities which may occur from production but are not included in the cost. For example, if the price of a packet of twenty cigarettes is £4.00p, the full cost including the indirect effects of extra healthcare, etc., might be £4.50.

**Exercise 2.8**

Answer the following questions based on the preceding information. You can check your answers below.

1. What is a market?
2. What are the main assumptions of perfect competition?
3. In a monopoly, if a firm fixes the price, what determines the amount supplied?
4. Imperfect competition can be divided into three submarkets. What are they?
5. What is allocative efficiency?

**Solutions**

1. A market is where goods and services are bought and sold.
2. Perfect competition assumes homogeneous products where many buyers and many sellers all have perfect information. In addition, factors of production are perfectly mobile and there are no entry barriers or government influence.
3. Demand for the product.
4. Imperfect competition can be subdivided into monopolistic competition, oligopoly and duopoly.
5. Allocative efficiency refers to the best use of resources producing goods and services which people want. At the level of an individual firm, it occurs when the prices charged equal the marginal costs of production. In theory, it occurs only in perfect competition in the long run (when only normal profit is made). See Figure 2.26.

## 2.9 Price and output determination

For each of the market forms previously described, we will now look at how price and output decisions arise.

### 2.9.1 Perfect competition

In this market, individual buyers and sellers believe that their own behaviour has no influence on market price. As explained earlier, the goods are homogeneous, there is
perfect knowledge of market conditions and there are no entry or exit barriers. These conditions ensure that all firms charge the same price for their product as is seen in Figure 2.24.

The firm in perfect competition is thus a price taker, which accepts a market price which is beyond its control. If the firm charged a higher price than \( P \) it would lose all its customers, who would act rationally and buy the identical good from another supplier at a lower price. Conversely, there is no point selling at a lower price because the firm can sell all of its output at the market price and thereby gain higher profits. Consequently, the demand curve for the individual firm is perfectly elastic at the price \( P \). This horizontal demand curve is also the average revenue curve, because all units are sold at the same price, and the marginal revenue curve, because each additional unit of output sold brings in the same amount of extra revenue (0\( P \)).

The demand curve facing the industry may not be horizontal. It could be of any type of elasticity but it is usually drawn as the normal downward-sloping variety. Similarly, market supply is shown in the traditional way. However, the amount supplied onto the market by an individual firm will be a very small proportion of the total quantity (given the basic assumptions). Whether it is \( Q_1 \), \( Q_2 \), \( Q_3 \) or any other level of output depends on the costs of production. Assuming that the firm is a profit maximiser, it will produce where marginal cost equals marginal revenue. Figure 2.25 shows the cost curves and the derivation of the short-run equilibrium.

At the market price \( P \), the firm supplies quantity \( Q \) (where MC = MR). At this level of output, average revenue \( (P) \) exceeds average cost \( (C) \) and so abnormal profits are made. The firm’s total revenue is \( PEQ_0 \) and its abnormal profits equal \( PEFC \). It is worth noting that these abnormal profits do not equate with technical efficiency, as this would be achieved at output \( X \), where AC is at its minimum.

**Profits**

However, in perfect competition these abnormal profits occur only in the short run. It is assumed in the long run that firms can enter the industry. In the above case the market price signals abnormal profits and gives an incentive to firms to transfer resources to this industry. The advent of many new producers leads to an increase in supply from \( S \) to \( S_1 \) (see Figure 2.26).

![Figure 2.24](Image) The firm and the industry in perfect competition
The extra supply causes a fall in market price to $P_1$ and shifts the firm’s demand curve downwards accordingly. If we assume that the firm’s costs are unchanged, then at price $P_1$, $MC = MR_1$ and profit is maximised. At this output $Q_1$, only normal profit is made. Also, the firm is operating at its most cost-effective point (minimum AC) and the market is cleared with no wastage of resources. For such reasons, long-run equilibrium in perfect competition is lauded as a desirable model for an economy.

**Entry and exit**

(i) *Long run.* Whenever price is between $P$ and $P_1$, new firms will enter the industry to secure a share of the abnormal profits. Conversely, at prices below $P_1$ firms will exit from the industry because of losses, thereby reducing supply and making the market price move upwards. At the long-run equilibrium there will be sufficient (normal) profit to keep existing firms in the industry and insufficient (as no abnormal) profit to attract new entrants.

(ii) *Short run.* A firm may not shut down production, even if it is making a loss. As long as a firm receives enough revenue to cover its variable costs, it will continue production.
The reason for this is that it has to pay fixed costs anyway and any excess revenue over the variable costs can offset some of the fixed costs, thereby reducing losses. The firm’s short-run supply curve is thus the part of the marginal cost curve above the average variable cost curve. (In the long run, the firm’s supply curve is that portion above the AC.)

**Efficiency**
The long-run equilibrium position in perfect competition is unique in that price equals marginal cost. This is significant because it gives allocative efficiency. If consumers take price as their measure of the value of a good and marginal cost measures the cost of attracting resources from alternative uses, then the price of the last unit of output is equal to its opportunity cost of production. Furthermore, as already indicated, these resources are being used to maximum technical efficiency because the firm is producing at the point of minimum average cost.

- Under perfect competition the firm is a price taker
- The demand curve for the film is horizontal so that the price equals AR which is the same as MR
- Competition ensures only normal profits are earned in the long run
- Long run equilibrium position ensures allocative efficiency as price equals MC.

### 2.9.2 Monopoly

In theory, a (pure) monopoly is where one firm is the whole industry. It can be a price maker (and thus quantity taker) or a quantity setter (and price taker). The monopolist cannot fix both price and quantity because it cannot control market demand.

Unlike in perfect competition, the firm’s average revenue does not necessarily equal its marginal revenue. In a monopoly, the firm, being the industry, faces a downward sloping demand curve. Thus, to sell more, a monopolist may have to lower his price. This means that marginal revenue will be less than average revenue. For any given price, average revenue is twice marginal revenue (assuming straight-line average revenue curves). Total revenue is maximised when marginal revenue is zero, that is, at $Q_2$ on Figure 2.27. This is because, beyond $Q_2$, MR becomes negative and thus reduces TR.

**Profits**
The price-fixing monopolist will have the usual U-shaped cost curves in the short run (because of the fixed factor assumption). Production will be at $Q_1$ assuming the monopolist is a profit maximiser and produces where $MC = MR$. The price will be $P_1$, exceeding average cost ($C$) by $PC$, and so abnormal profits are made.

These profits remain in the long run, because of the entry barriers. It is also possible that in the long run a monopolist’s costs may fall (although they could rise or be constant, as the fixed factor assumption is removed) and this could raise profits even further. Similarly, if demand becomes more inelastic then profits may increase as any rise in price produces a smaller proportionate change in quantity demanded, thereby raising total revenue.

**Exit/entry**
As explained earlier, the definition of monopoly means that new firms cannot enter the industry. Thus, there is no need to distinguish between short-run and long-run
equilibrium. Furthermore, it means that abnormal profits are not competed away since monopolists maintain entry barriers.

In practice, a firm may have monopoly power even if there are other firms in the industry. An effective monopoly must be able to exclude potential rivals from the market by creating and maintaining entry barriers.

- **Legal barriers.** Public corporations may be given a monopoly by statute when they are created, for example, public utilities. This prevents wasteful duplication. Patent law also creates a monopoly of sixteen years for new inventions.
- **Geographical barriers.** Markets in different parts of the UK may be separate and different firms may be sole producers in each region. Transport costs may act as a barrier to access. For instance, the village store may have a local monopoly.
- **Economies of scale.** These may give an established firm both cost and technical advantages over potential entrants. High fixed costs of production may deter competitors and keep one firm with a monopoly.
- **Exclusive controls.** A monopolist might have total control over the necessary raw materials for production. For instance, the control of British Telecom over the telephone network has made competition from new entrants to the UK telephone markets more difficult. Similarly, the control over market outlets until recently allowed breweries to have a local monopoly for their beer in tied public houses.
- **Cartel agreements.** An effective monopoly can exist when firms in an industry agree to co-operate rather than compete. Such collusion may be in the form of either price fixing or market sharing. In Germany sixty-two companies in the ready-mixed concrete industry were fined DM320 million in 2000 for operating a quota cartel, while six leading accountancy firms in Italy were heavily fined in the same year for a price-fixing arrangement. Market sharing is rather more acceptable in smaller markets, such as milk and newspaper deliveries in rural areas.

**Efficiency**

In a monopoly there is neither allocative nor technical efficiency. As Figure 2.27 shows, price is higher than marginal cost (at $Q_1$) and the firm is not producing at the lowest average cost (point X).
A monopolist has a downward sloping demand curve
A monopolist can fix price or quantity but not both
Abnormal profits exist in the long run due to barriers to entry

2.9.3 Imperfect competition

In each of the three market structures which follow, the firm is a price searcher. Its behaviour is to seek a price which will maximise profits, given the conditions in the market. The traditional theory of the firm still has MC = MR as the key decision rule for production, although in practice cost-plus pricing is probably more realistic.

Monopolistic competition

This type of market includes features of both perfect competition and monopoly. There are no entry barriers, which is similar to perfect competition. However, each firm has influence over the price of its output, as in monopoly, because the products are differentiated, by style, packaging, brand names and advertising. The newspaper industry is a good example of such a market. Therefore, each firm faces a normal downward sloping demand curve for its product, and so marginal revenue is less than average revenue.

The short-run equilibrium position for a firm in monopolistic competition is very similar to that of a (pure) monopolist. The only difference is that the average revenue (demand) curve is likely to be more elastic. This happens because of the competitive features of the market, when the consumer has a choice between differentiated products and is subject to persuasive advertising.

Nevertheless in the short run, firms in monopolistic competition may earn abnormal profits, as shown in Figure 2.28. However, these profits attract new entrants and so in the long run they are competed away. The competitive rivalry causes the loss of some of the firm’s customers, but not all of them because brand loyalties exist. These loyalties may be genuinely held because of a product’s peculiar satisfaction for a consumer or they may be spuriously created by advertised images. The loss of customers is shown by the leftward shift in the demand curve and the resultant absence of abnormal profit in Figure 2.29. Thus, a firm in monopolistic competition makes only normal profit in the long run.

Figure 2.28 Short-run equilibrium for a firm in monopolistic competition
Although the features of monopolistic competition make it more realistic than perfect competition, the implications for the allocation of resources are undesirable for society in two ways:

- There is no allocative efficiency because price does not equal marginal cost. Price is greater than marginal cost at the equilibrium and so if output were expanded some people could be made better off without others suffering.
- There is no technical efficiency because the average cost ($P_1$) of the equilibrium output ($Q_1$) is greater than the lowest point of average cost ($X$).

This suggests that the firm has excess capacity in the long run and is not at maximum technical efficiency as in Figure 2.29.

**Oligopoly**

In the oligopolistic market structure a few large firms dominate the market, for example, Lloyds, Barclays, HSBC and Royal Bank of Scotland are the leading lights in the UK retail banking industry. There is price and non-price competition between firms, with pricing behaviour being partly determined by how a firm expects its rivals to react. Thus, there is much uncertainty in oligopolistic markets, and greater interdependence between firms than in other market structures.

There are four strategies which an oligopolist firm might adopt:

- **co-operate** with the other large firms. In such a collusive oligopoly, a common policy is agreed on pricing and market sharing and joint profit maximisation is the objective. The market structure then resembles the monopoly model. However, this may not be possible in practice because of restrictive practices legislation. This is considered under competition policy later in this chapter.
- **make their own decisions** and ignore their rivals. A firm could estimate its demand (average revenue) curve and set a price. The effect of this depends upon other prevailing prices for what are broadly similar goods/services, and how the rivals react. A higher price may lower sales and lead to a fall in market share if rivals do nothing. A lower price may increase sales if rivals do nothing but lead to lower profits (as demand tends to be inelastic). If rivals follow suit when the firm initiates a price rise, it becomes the market leader. This position is akin to that of a monopolist, who can make price changes with impunity. If rivals copy a price cut, there may be price warfare. Each firm is seeking to

![Figure 2.29 Long-run equilibrium for a firm in monopolistic competition](image-url)
maintain its market share and protect its profits. The price cuts will benefit the consumer, as may some of the non-price competition.

- become a price follower by awaiting the action of the price leader. (This strategy makes the firm a price taker.)
- do nothing. A firm may feel that any change in its price would be disadvantageous because it faces a kinked demand curve. An increase in price above $P$ will lead to a large drop in revenue, as consumers now buy relatively cheaper alternatives. Conversely, a fall in price below $P$ creates a large fall in revenue, as existing consumers pay less for each unit of output. Thus the curve is relatively elastic above the fulcrum point and relatively inelastic below that point as in Figure 2.30(a).

This kinked demand curve is derived from two separate demand curves, being composed of the upper part of $D_1$ and the lower part of $D_2$. As the demand curve equals the average revenue curve, that too is obviously kinked. However, the composite marginal revenue curve (the top of $MR_1$ and bottom of $MR_2$) displays a vertical discontinuity, along the section parallel to the price axis, between points $V$ and $D$. This reinforces a tendency towards price stability because there is a series of points where $MC = MR$. In the detailed diagram (Figure 2.30(b)) $MC$ crosses $MR$ in the section $VD$. However, $MC$ could shift upward towards $V$ and downwards towards $D$ and still equal $MR$ at this output level and price. Thus, costs can rise or fall within the range $VD$ without causing a profit-maximizing oligopolist to change either price or output. This is unique to oligopoly.

Although some of the above strategies lead to price instability, most create price stability. In addition, non-price competition gives suppliers a chance to influence demand and ultimately profits, without having to change price. The non-price competition can be through special offers, persuasive advertising, extended guarantees, elaborate packaging, free competitions and after-sales service. The intention is either to make demand for their good more inelastic or to shift demand to the right by securing a positive increase in taste and fashion.

Another strategy to maintain abnormal profits is to operate entry barriers, similar to those used by monopolists. In addition, firms could operate as cartels and fix prices and/or market shares.

Given all the caveats regarding oligopolistic behaviour, it is impossible to outline a single set of rules for the equilibrium of either the firm or the industry. There is clearly
great uncertainty and an incentive for oligopolists to collude in order to maximise joint profit. Such behaviour tips oligopoly towards the monopoly model and relative price stability. However, occasionally there is fierce price competition and regularly there is active non-price competition, as the petrol industry vividly illustrates. Unfortunately, none of the theory explains how a firm selects a price in the first place in an oligopolistic market.

- Oligopoly is characterised by uncertainty in the pricing decisions
- Non-price competition occurs

**Duopoly**

In such a market, there is *pure conflict* where the gains of one firm become the losses of the other firm, assuming a constant size of market. Game theory can be applied to this market structure but only with difficulty. Like oligopoly, we assume rational behaviour within the context of the uncertainty, conflict and interdependence which exist. Assume that companies A and B share the market for sugar. Company A considers three possible strategies designed to maximise its market share:

- extensive advertising;
- new brands;
- price cuts.

Figure 2.31 shows the percentage market share that A can expect if B realtime what is happening and counters the strategy in some way. For instance, if A undertakes extensive advertising (strategy 1) B’s best counter would be strategy 5, which keeps the market shares at 50 per cent each. A must assume that B will try to minimise the impact of A’s strategy and find the most effective counter. Clearly, strategies 2 and 3 are inferior to strategy 1 because the worst scenario for each gives A only 45 per cent of the market. In this example, A might deploy strategy 1 because at worst it maintains 50 per cent of the market, which it already held, and could achieve 65 per cent if B selects the ‘wrong’ counter-strategy.

### 2.9.4 Price discrimination

A monopolist may be able to *subdivide one market* into two or more sectors, and then price discriminate between different customers, although selling the same product. There are several ways to discriminate:

- by **time** – a golf club will charge non-members a higher green fee to play at weekends than during the week;
- by **customer** – a golf club will charge non-members playing with a member less than non-members would otherwise pay;

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<thead>
<tr>
<th>Company A’s strategies</th>
<th>Company B’s strategies</th>
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**Figure 2.31** Company A’s market share (%) – game theory
by **income** – a hairdresser may charge a pensioner less than a breadwinner because the former has a lower income;

by **place** – a hairdresser may charge extra for providing the service at the customer’s home, as opposed to what would be charged at the salon.

These pricing strategies are likely to be successful if several conditions are fulfilled:

- **at least two distinct markets** with no seepage between them so that a higher price can be charged in one of the markets. If there was seepage then enterprising consumers could buy the good in the lower-priced market and then resell it in the other market, perhaps undercutting the discriminating monopolist;
- a **market imperfection**, such as transport costs, which gives the supplier a monopoly and thus keeps out competitors who might undercut him in his high-price market;
- **differing demand elasticities** so that the monopolist can gain extra profit from his price discrimination.

The diagrams in Figure 2.32 illustrate the theoretical basis of price discrimination. The total market shows the aggregate AR and MR and the profit maximising output of $0Q$. The price in each market is determined by the intersection of the aggregate marginal cost curve and the specific marginal revenue curve. In market X the price charged is $P_1$, which is higher than $P_2$ in market Y. $P_1$ is higher because the demand in market X is more inelastic than in market Y. Assuming that the costs are similar for each market, the supplier will make more profit in market X than in market Y. The total output of this monopolist is $0Q$, which equals $0Q_1$ plus $0Q_2$. The monopolist increases abnormal profit by selling more in the market where demand is most inelastic (i.e. market X).

### 2.9.5 Perfect competition versus monopoly

Making a judgment between these two extreme theories is really a pointless exercise. Perfect competition is an ideal which does not exist and in which technical and allocative efficiency are both achieved. Long-run equilibrium is obtained at lowest AC, where price equals marginal cost. In contrast the longrun monopoly equilibrium is not at lowest AC and has price above marginal cost. In Figure 2.33 we assume the monopoly firm and the perfectly competitive firm have the same AC and MC curves. The monopolist faces a downward sloping demand curve ARM and produces $Q_M$ at $P_M$ (where MC = MR) making abnormal profits ($P_MYVX$). The firm in perfect competition faces a horizontal

![Figure 2.32 Price discrimination](image)
demand curve \((AR_C = MR_C = D_C)\) and produces \(Q_C\) at \(P_C\). At point \(Z\), \(MC_C\) will equate with \(MR_C\). Thus, the effect of a monopoly seems to be lower output \((Q_M - Q_C)\) and higher prices \((P_M - P_C)\), which means a welfare loss to consumers.

Despite monopoly being inferior to perfect competition in respect of both technical and allocative efficiency, a case of monopoly can be justified on three grounds:

- they may be public utilities, thus organising production in the most cost-effective way;
- they may be necessary when a national producer is required in an industry;
- they may be firms achieving significant economies of scale and thereby selling their products at a lower price than would be charged in perfect competition. This is because the monopolist’s average and marginal cost curves are significantly lower than those of a perfect competitor due to economies of scale. If this is the case then a monopoly can claim a better utilisation of resources although not full allocative efficiency, and greater technical efficiency.

However, on the debit side it is usually argued that monopolists have less incentive to innovate, because they keep abnormal profits in the long run. Also, they may restrict choice, by eliminating uneconomic brands, indulge in price discrimination and use predatory pricing to keep out would-be competitors. As rivals usually start in a small segment of the market, the monopolist might sell his goods in this sector at a loss for long periods to undermine the competition, being fortified by profits from elsewhere. These, though, are relatively minor arguments in comparison with the two fundamental criticisms of monopoly – it is allocatively inefficient and it produces welfare losses for society because there is a divergence between the public interest and the self-interest of the monopolist. Such criticisms do not apply to perfect competition.

### 2.9.6 Contestable markets

This is a relatively new theory which accentuates the importance of entry and exit costs into a market. A contestable market is one in which entry is relatively easy, and so is exit. The latter is possible because there are no (or low) sunk costs. In practice, this means that start-up costs are low and so firms can ‘hit and run’ – that is, enter the market, take a share of the
(excessive) profits and then leave the industry fairly painlessly. Existing firms in the market have no market power to deny new entrants and live in a very competitive environment.

A good example of a contestable market is coach travel since privatisation. The capital costs of entry are low (i.e. buying secondhand buses), the best routes can be cream-skimmed and once (or if) sales begin to diminish, the operator can sell up and leave the industry (i.e. sell secondhand buses).

Exercise 2.9
Answer the following questions based on the preceding information. You can check your answers below.

1. Why does an individual firm face a totally elastic demand at one price in perfect competition?
2. What happens to abnormal profits in the long run in perfect competition?
3. In the short run, why might a firm in perfect competition continue production even though it is making a loss?
4. In which market is the firm a price maker?
5. What happens to abnormal profits in the long run in a monopoly?
6. Suggest three entry barriers in a monopoly.
7. Can a firm in monopolistic competition make abnormal profits?
8. Describe the demand curve in a competitive oligopoly.
9. What is the main type of competition in an oligopoly?
10. What does ‘price discrimination’ mean?
11. What is the aim of price discrimination?
12. Give two reasons to justify monopolies.

Solutions

1. An individual firm faces a totally elastic demand at one price in perfect competition because it is just one small supplier of a small share of a large market. As its product is homogeneous, a price rise will lead to no sales, because consumers will buy other products in the market.
2. Abnormal profits totally disappear in the long run in perfect competition.
3. A firm will continue production in the short run in perfect competition as long as it is covering all of its variable costs. This is because it has to pay fixed costs even if there is no production.
4. A firm is a price maker in monopoly.
5. Abnormal profits can be maintained in the long run in monopoly.
6. Entry barriers to monopoly include legal restraints, geographical barriers, economies of scale and exclusive controls.
7. A firm in monopolistic competition does not make abnormal profit in theory in the long run.
8. In a competitive oligopoly, the demand curve is kinked.
9. In oligopoly, the competition is through non-price factors.
10. Price discrimination means selling the same product/service in different markets at varying prices.
11. The aim of price discrimination is to maximise profits.
12. Monopolies can achieve economies of scale and thereby lower prices, and they may be necessary in an industry which faces strong international competition.

2.10 The public sector

2.10.1 Definition

The public sector contains a range of businesses *sponsored* by the government, and often run by officials who are *accountable* (often very indirectly) to elected politicians. The main organisations are shown in Figure 2.34.

During the 1980s, the public sector shrank as a result of privatisation, both through the sale of state assets and the hiving-off of public services to other agencies. Local authorities were forced to offer some services for tender (e.g. school meals) while others were taken away (e.g. transport). Government departments became subject to market criteria in their operations, while new quangos with commercial ethics and private sector business personnel were encouraged, for example, London Docklands Development Corporation.

2.10.2 Public corporations/nationalised industries

These are state-owned organisations (public corporations and nationalised industries are virtually synonymous except in legal terms) created by Acts of Parliament and given specific responsibilities. They are mainly associated with the Labour government of 1945–51. Their assets are publicly owned but they are not usually required to make a profit. A minister exercises general control and is responsible to Parliament. However, the day-to-day management is by a *board* appointed by the minister.

**Arguments for nationalisation**
- *Low costs* may be obtained through economies of scale, and the avoidance of waste and duplication. These points were particularly true of ‘natural’ monopolies such as gas, water and other public utilities.
- *Sufficient capital* available for investment, because of government support. This was particularly true for aircraft and shipbuilding, which were belatedly nationalised by Labour in 1976.
- *Provides uneconomic services* for consumers. This argument places social benefit above private profit and is the justification for keeping small railway stations open.

![Figure 2.34 Public-sector organisations](image-url)
- **Allows strategic control** over key resources. This was an important factor in the immediate postwar period but is less so today, as privatisations of steel and electricity indicate.
- **Protects employment** and minimises social costs. The keeping open of ‘uneconomic pits’ could be justified on this argument, because of the opportunity cost to the local communities based on coal mines (and steel plants). Not only did closure mean lost output, it also meant extra public spending on unemployment benefit and the intangible social costs of ‘loss of community’, increased marital stress, higher crime, etc.
- **Gives a fairer distribution of wealth** whereby the surpluses could be used for the benefit of society rather than profits being expropriated by capitalist owners. This argument also justified high wages and job security for public employees, as well as more sympathetic management.

**Pricing**

(a) **Commercial principles.** Nationalised industries are monopolies. If they operate like private-sector monopolies then they can make abnormal profits by producing where $\text{MC} = \text{MR}$ (see Figure 2.27). However, because of public service obligations this has rarely happened. As shown earlier such a monopoly is not technically or allocatively efficient. Since 1979 the government has moved nationalised industries in this direction through setting them stiffer financial targets and by requiring managers to be more commercially focused.

An alternative approach, which was tried in the 1960s and 1970s, was breakeven, or meeting certain financial obligations.

Breakeven occurs where total cost equals total revenue, which is also where $\text{AC} = \text{AR}$. However, as shown in Figure 2.35, such a policy is both allocatively and technically inefficient. The price charged, $P$, does not equal MC and so it is allocatively inefficient. Furthermore, the quantity produced, $Q$, is above the optimum output level ($Z$).

Nevertheless, breakeven policy does lead to greater output and lower prices than a policy of profit maximisation. The latter occurs at $P_1Q_1$ and thus creates a much smaller consumer surplus.

(b) **Marginal cost pricing.** This policy will maximise allocative efficiency (as price equals MC) but it could lead to losses if, at the point of pricing, marginal cost is below average cost. Furthermore it does not produce the technically most efficient output because the quantity produced is not at the minimum point of AC.

![Figure 2.35 Breakeven pricing](image)
The above pricing has so far considered purely *private costs*. However, given some of the arguments for nationalisation, it could be argued that nationalised industries should consider *marginal social cost pricing*. The externalities created by nationalised industries can be good and bad. For example, the railways may be beneficial by relieving roads of congestion and maintaining communications for isolated communities, but they may be costly in terms of noise and air pollution. Thus if the pricing policy was to maximise net social benefit (or minimise net social cost) then costs would need to include the above such *externalities*. However, such a policy faces even more complex measurement problems and critics of it argue that governments should seek to obtain their social objectives in other ways. Nevertheless marginal social cost pricing is allocatively efficient in a wider social sense.

(c) *Price discrimination.* A nationalised industry as a monopolist can discriminate to increase its profits/minimise its losses. Thus when the railways in the United Kingdom were a nationalised industry, British Rail at peak travel times and on popular routes loaded the price because demand is highly inelastic, for example, Friday travel and London commuters. This was explained earlier.

### 2.10.3 Privatisation

There were two main strands to privatisation:

- **Sale of state assets**, either whole industries (e.g. gas) or firms (e.g. Jaguar to Ford Motors) or parts of local authorities (e.g. council houses). This is denationalisation.
- **Introduction of competition** into areas previously monopolised by state suppliers, deregulation of various industries (e.g. bus travel) and compulsory competitive tendering (e.g. local authority refuse collection services).

Whole industries have been privatised in the United Kingdom, for example British Telecom (BT) in the 1980s and British Rail in the 1990s.

**Arguments for privatisation**

- **Improved ‘efficiency’** in sleepy state monopolies. Overmanning and wasteful investment had occurred because of demoralised management (and frequently changed government objectives) and immunity to takeover. Thus it was claimed that the fear of takeover in the private sector and competition would lead to *innovation* in the search for profit, for example, use of minibuses after the deregulation of bus services. These pressures would also give managers an incentive to minimise costs and shake out unproductive labour, which might have been featherbedded in the public sector, for instance, BT axed 15,000 jobs in 1993.

- **Wider share ownership.** It is argued that if employees become shareholders they work harder and strike less, thereby engendering economic gains to firms. Furthermore, the increase in the number of adults with shares (7 per cent in 1979 to 25 per cent in 1992) will create empathy with the private profit motive and better understanding of business problems.

- **Improved quality** will result because privatised concerns will have to compete to survive and be responsive to consumer complaints. Long-distance bus travel has seen significant price cutting and better quality coaches.
Greater economic freedom will occur because the privatised companies will not be subject to the ‘dead hand’ of state control. For example, nationalised industry chairmen were sometimes pressured by government ministers to make decisions for political reasons, for example, hold prices steady during a period of incomes policy. Market forces should have more influence.

Will provide funds for the Treasury. This reason brought a record £7.1 billion in 1988–99 into the Exchequer. It allowed a reduction in the public sector borrowing requirement and tax cutting which was part of the government’s overall economic strategy.

**Criticisms of privatisation**

- **Fewer services and higher prices** – for example, rural transport.
- **Private monopolies** have been created. For instance BT had 70 per cent of the domestic market in the 1990s and faced only limited competition. Thus there were few pressures to reduce costs and it was able to raise prices and make over £1 billion profits annually.
- **Quality of service has diminished**, particularly where local authority functions have been contracted out, for instance, costs have been saved by reducing staff, paying lower wages and reducing what was provided, like schools cleaned less frequently. The gains in technical efficiency as cost per unit has fallen is thus an illusion as quality of service has simultaneously declined.
- **Asset sales were underpriced** (to attract buyers) and this created big capital gains for private investors. One estimate of the underpricing of Railtrack shares at the time they were sold was £2 billion.
- **Only the profitable parts of the public sector are sold off**, which means that there is less public income in the future to contribute to government spending.
- The sale of shares to overseas buyers means that other governments can influence the decisions of British firms and dividend payments go abroad, thereby weakening the balance of payments.
- **Markets have been ‘cream-skimmed’** as, with deregulation, the most profitable parts have been supplied and the loss-making elements ignored. The previous tendency of state enterprises to cross-subsidise has disappeared. A good example of this was BT’s attempt to remove rural telephones until partly prevented from doing so by the regulator responsible for the industry.
- Top executives of privatised companies have paid themselves large salaries and generous share options, while simultaneously preaching wage restraint to their trade unionists. This seems most unfair and hardly likely to induce high productivity and employee commitment.
- Competition has not been enhanced.

**Pricing**

As many privatised companies are now private monopolies, they would be expected to conform to profit maximisation principles. Indeed, in most cases they have. However, this does not create technical or allocative efficiency. As the model for such efficiency is perfect competition, the government has tried to create competition. For example, when electricity was privatised, the power generation was split between National Power and Powergen. However, this was rather artificial and still only gave a duopoly. A major problem for the government of creating competition has been that it makes the nationalised industry to be sold less likely to be profitable and thereby depresses the share price, and so raises less money than required. It was for that reason that Mercury was not allowed to become a big competitor against BT while it was being privatised.
A different approach has been to impose price limits on privatised monopolies. For example electricity has a price formula:

\[ RPI - X + Y \]

where RPI is the change in retail prices index; \( X \) is a percentage deduction (designed to squeeze costs); and \( Y \) is a percentage addition (for costs which cannot be passed on).

The regulator for BT has renegotiated its maximum prices. For a period in the 1990s, BT price changes were based on \( \text{RPI} - 7.5 \text{ per cent} \) which in practice meant price cuts. Clearly, such intervention undermines the rationale for privatisation and implies that allocative efficiency is not being pursued, although technical efficiencies are probably being achieved.

### 2.10.4 Public goods and merit goods

These are provided by the government because the free market underproduces them. Public goods are products such as defence where one person’s consumption does not diminish someone else’s (non-rivalry) and that person cannot stop someone else benefiting from it (non-exclusivity). This enables free-riders to take advantage and so the person would not be prepared to pay for the service. Hence the government provides defence at zero price but taxpayers fund the service.

As the government is providing public goods on a nationwide basis, it can benefit from economies of scale. This could lower costs and the industry would strive for technical efficiency. There is no allocative efficiency because consumers do not have a choice – the services, such as police, prisons, fire, are provided whether they like it or not. However, a consumer who seeks more protection could buy additions in the marketplace, like burglar alarms, underground concrete bunkers, security men, etc.

Merit goods are goods which it is generally agreed should be made available to all irrespective of whether everyone can afford to pay for them. They are different from public goods in that their under-provision results from ignorance, lack of information and (perhaps) irrationality. Some consumers possess the means and the willingness to buy merit goods, such as education and healthcare. Government provision is made in the interests of the general well-being of the nation. However, the private sector provides alternatives, although these are often seen as ‘different’, or even superior goods/services, for example, private school education, private health schemes.

In the case of state-provided merit goods, economies of scale could be achieved and technical efficiency sought. The cost of education per student is about three times cheaper in the state sector than in the private sector. However, it is rather difficult to maximise technical efficiency as shown by the failure to close small local hospitals and village schools. Ironically, the support for these threatened organisations comes from local users, thereby indicating that consumer needs are being met. Also, they are making a rational choice because a local service is better than a more distant (alternative) one in terms of time and travel cost. Free marketeers would thus point to the folly of zero pricing, which negates allocative efficiency.

#### Exercise 2.10

Answer the following questions based on the preceding information. You can check your answers below.
1. What caused the shrinkage of the public sector in the 1980s?
2. Give three arguments for nationalisation.
3. What is marginal cost pricing?
4. What were three reasons for privatisation?
5. How do merit goods differ from public goods?

Solutions

1. The public sector shrank in the 1980s because of privatisation.
2. Nationalisation can be justified because it provides low costs of production, uneconomic services which otherwise might not exist and strategic control over key resources.
3. Marginal cost pricing means that price is determined by the interactions of supply and demand. In diagrammatic form, that is where marginal cost (i.e. S) equals average revenue (i.e. D).
4. Three reasons for privatisation are funds for the Treasury, greater economic freedom for producers and improved efficiency within the organisation.
5. Public goods are freely provided by the government as there is non-rivalry and non-exclusivity in their use. Merit goods are provided by the government as it is believed they should be made available to all irrespective of the ability to pay.

2.11 Regulation

2.11.1 Competition policy

There are two aspects to this which involve government regulation:

(i) Consideration of mergers which might create monopolies. These are generally undesirable, as explained earlier, because they lead to allocative inefficiency.

(ii) Investigation of restrictive trade practices which reduce competition within a market and undermine consumer sovereignty. As markets have become more heavily concentrated among fewer firms and competition has become more imperfect, so more controls have been applied to restrictive trade practices and pricing. The economic justifications for such a policy are fairly clear. Collusion by suppliers and the operation of cartels usually lead to higher prices and/or monopoly profits and possibly lower output. These in turn reduce the consumer surplus and thereby reduce consumer sovereignty (but increase producer sovereignty). Furthermore, they are a diminution in allocative efficiency. However, it must be remembered that extra profits may lead to investment in research, which could eventually benefit consumers via new products.

Various legislation established the basis for competition policy in the UK. The most recent major legislation has been as follows:

- Competition Act 1980. Established a new ‘competition reference’ procedure, with the Director General, Office of Fair Trading (OFT) investigating anti-competitive activities, which might restrict, distort or prevent competition. The Director General can either negotiate a voluntary undertaking with a firm to drop the activity within two months or refer an activity to the Monopolies and Mergers Commission (MMC) replaced by the
Competition Commission (CC) in 1999 within 6 months. If the MMC decides that the activity is ‘against the public interest’ then the Department of Trade can prohibit it. In addition, the Department of Trade can refer nationalised industries and other bodies to the MMC for examination of their efficiency, costs and service.

- **Companies Act 1989.** Requires companies planning to merge to notify the Office of Fair Trading in advance of their intentions. Companies have to provide details of the proposed merger. If no merger reference to the MMC/CC is made within twenty days then the merger can go ahead. Rather than refer the merger to the MMC/CC, the Secretary of State can ask the companies involved to sell off some of their assets in order to decrease their market power resulting from the merger.

- **Competition Act 1998.** This came into force on 1 March 2000. It seeks to reform and strengthen UK competition law by introducing prohibitions of anti-competitive agreements and abuses of a dominant position. These prohibitions are modelled on Articles 81 and 82 of the EC Treaty.

- **Enterprise Act 2002.** The competition and consumer provisions of this act came into force in summer 2003. The Act establishes the OFT as a corporate body with independent board members. This replaces the former statutory office of the Director of Fair Trading. The Act builds on the Competition Act of 1998 and also introduces new provisions relating to criminalisation of cartels, disqualification of directors for breaches of competition law and super-complaints. The latter enables certain designated bodies, for example the National Consumer Council, to have enhanced status in drawing to the attention of the OFT any anti-competitive behaviour.

Up to the Competition Act 1998 the legislation has presumed that restraints on competition should be permitted unless found to be against the public interest. Since 1998 the presumption of legislation is that any anti-competitive arrangements are against the public interest and will be outlawed.

Since 1946, the British government has been increasingly involved in vetting the operation of markets in the United Kingdom. The approach has been discretionary and pragmatic. Each case has been judged on its merits, although increasingly general guidelines and supervisory institutions have been created. Critics of this approach argue that it has been inconsistent, weak and ineffective in dealing with mergers, monopoly power and exploitative pricing. America has much tougher legislation which can break up monopolies (i.e. trust-busting). It is the American approach that current legislation seeks to mimic.

### 2.11.2 The work of the MMC/CC

The Monopolies and Restrictive Practices Commission was established by the Monopolies and Restrictive Practices (Inquiry and Control) Act 1984. The Commission ceased to be responsible for restrictive practices in 1956. These were handled by the DGFT and the Restrictive Practices Court. The title of Monopolies and Mergers Commission (MMC) came from the Fair Trading Act 1973 (the ‘FTA’).

The **Competition Commission (CC)** is a public body established by the Competition Act 1998. It replaced the Monopolies and Mergers Commission (MMC) on 1 April 1999.

The Commission has two sides to its work: a reporting side which has taken on the former MMC role; and an appeals side which will hear appeals against decisions made under the prohibition provisions of the new Competition Act 1998.
The CC investigates situations where one firm controls at least one-quarter of the market, and mergers involving worldwide assets exceeding £70 million. However, firms are not automatically investigated as it depends on a reference from the Director General. Investigations are carried out by experts, within a limited time. However, critics feel that too long is often taken over this work. The CC reports to the Minister, who may implement its recommendations, ignore them or do something to the contrary.

The CC seeks to promote competition and stresses the need to extend consumer sovereignty, efficiency and enterprise. It opposes most entry barriers, vertical integration and aggressive competition. However, it recognises the benefits which large-scale enterprises enjoy from economies of scale and accepts that abnormal profits may be a justifiable reward for research and development and the risks associated with innovation. Usually, the government complies with the spirit of a CC report, although occasionally recommendations have been ignored and public criticism has resulted. Sanctions have been imposed only rarely, for example, Hoffman LaRoche was ordered to repay £3 million to the National Health Service. Proposed mergers have been stopped, for instance, Imperial Tobacco (makers of Golden Wonder crisps) and Smiths Crisps because of the monopoly power which would have resulted. In September 2003 the Trade and Industry Secretary accepted the conclusion of the CC that the proposed acquisition of Safeway by Asda, Sainsbury’s and Tesco would operate against the public interest and should be prohibited. The proposed acquisition of Safeway by Morrisons would be allowed to proceed, subject to Morrisons agreeing to sell 53 stores in areas where local competition concerns would arise as a result of the acquisition. By this outcome a fourth major firm would be established in the UK supermarket sector thereby enhancing competition.

However, not all eligible mergers are investigated by the MMC/CC. On average about five out of 150 were referred by the Office of Fair Trading (OFT) and the Board of Trade to the MMC for consideration. Although it could be argued that the OFT’s guidance to firms deters unacceptable mergers from being attempted, the procedure can lead to apparent anomalies and bias. For instance, in 1985 Imperial Tobacco’s bid for United Biscuits was remitted (because it would give 45 per cent of the total snacks market to them and create a virtual duopoly with Nabisco holding another 45 per cent) but Hanson Trust’s hostile bid for Imperial was allowed. The latter did not raise any competition worries, although it promised the creation of a giant conglomerate.

Since 1980 the role of the MMC/CC has changed. The Conservative government’s Competition Act gave it the power to make efficiency audits of public sector enterprises. By the end of 1984, fifteen references had been made and reports published on eleven. In every instance, the MMC made recommendations as to how the state concern could improve its performance. While praising the Civil Aviation Authority’s standard of service and safety (1983), the MMC found forty-nine ways in which performance could be improved, largely by making more effective use of manpower.

With privatisation MMC investigations were less necessary, as each industry’s regulator (see later) undertakes a watchdog role and reports annually. Interestingly, the conflict between British Gas and OFGAS led to an investigation by the MMC in 1993. This recommended ending the British Gas monopoly of supply to domestic users by 31 March 1997 and to all consumers by 2002. It also suggested, again subject to the Trade Secretary’s approval, splitting British Gas into two separate companies, one covering transportation and storage assets and the other being responsible for sales of gas and appliances to industrial, commercial and domestic consumers.
In 1997, the MMC arbitrated between the regulator and Transco and British Gas, but largely supported OFGAS’s recommendations over transport prices. It proposed a 21 per cent first-year cut, followed by RPI minus 2 per cent over the next four years.

Improved efficiency can result from MMC proposals. For example, the Post Office Letter Service made £23 million annual savings by implementing MMC recommendations.

The weakness of the MMC and its reliance on ministerial support to drive through its recommendations was epitomised by the brewing industry fiasco. The government accepted the MMC recommendations in 1990 then gradually retreated on most of the issues, in the face of the brewers’ intransigence, over the next three years.

The 1998 Competition Act established the Competition Commission in April 1999. The 1998 Act made the prohibition of abuse of a dominant market position the principal tool for dealing with anti-competitive conduct by monopolies. These prohibitions will be enforced primarily by the Director General of Fair Trading who can impose fines of up to 10 per cent of UK turnover. The CC has taken on the investigating functions of the MMC but will also hear appeals against the Director General’s decisions.

2.11.3 Restrictive practices

The Restrictive Trade Practices (RTP) Court considers *registered agreements* under which at least two persons support restrictions relating to the price of goods, the conditions, quantities, processes or areas and persons supplied. It operates on the principle of guilty until proven innocent, assuming that restrictive practices are against the public interest. The court could uphold the agreements or have them banned. Originally, there were eight defences (nicknamed ‘gateways’) which could be legitimately used to justify the restrictive practice. In addition, the benefits to the consumer needed to outweigh the costs of the practice. Gradually, investigations have been widened as more trading activities have been seen to offend against the public interest.

However, there are major differences of opinion over the precise nature of ‘the public interest’ and which actions promote or undermine the public interest. The 1983 RTP Court report on the Association of British Travel Agents’ (ABTA) stabiliser illustrates these issues. The stabiliser was an agreement between tour operators and retail travel agents which was aimed at limiting destructive competition and protecting consumers against the effects of bankruptcies. This agreement restricted price competition between tour operators within the season and thereby reduced the possibility of financial collapse. This kept prices higher but consumers benefited from a stable market in which there was less risk of tour operators going bankrupt. The RTP Court decided that price agreements between tour operators and resale price maintenance between travel agents should be abandoned. This helped the consumer through price competition in the short term. However, if the long-run effects of competition were fewer operators and agents (with larger market shares) and some dramatic failures, then certain unlucky consumers would suffer immediately and most might lose out as the market became oligopolised.

ABTA also operated an entry barrier – *exclusive dealing*, where ABTA operators sold tours only through ABTA agents, who in turn only sold ABTA tours. The objective of this restrictive practice was to enforce default rules and maintain a quality service, thereby minimizing company failures and ultimately benefiting the consumer. The RTP Court accepted that this was in ‘the public interest’, although a few minor limitations, such as the requirement that travel premises should house two ABTA-trained staff, were outlawed.
Undoubtedly, many restrictive practices still exist, but in secret. The Office of Fair Trading regularly discovers anti-competitive behaviour, particularly when frustrated retailers are threatened by manufacturers that their supplies of products will be curtailed if they continue to sell them at cut prices or as loss leaders (against the maker’s wishes). This suggests that competitive policy in the area of restrictive trade practices needed to be strengthened.

In response to this the government has placed ‘fostering competition’ at the centre of its policy towards business. The 1998 Competition Act, which came into effect on 1 March 2000, outlaws any agreements, business practice and conduct which have a damaging effect on competition in the United Kingdom. Such prohibition applies to both informal and formal arrangements whether or not they are set out in writing. These include agreements to fix prices; to limit production and technical development; to share markets; and to make contracts subject to unrelated conditions. Equally the prohibition covers the abuse by one or more undertakings of a dominant position in a market. Examples of abuse of a dominant position include unfair pricing, limiting production and attaching unrelated supplementary conditions to contracts. Although there are exemptions from the Act, the emphasis increasingly is being placed on the assumption that any restriction of competition is undesirable. The Act gives the Director General wide-ranging powers to investigate infringements of the prohibitions. Where an undertaking is found to have breached any prohibition, the Director General may order it to terminate or amend the offending agreement. Undertakings may be liable to a financial penalty of up to 10 per cent of their turnover in the United Kingdom. However, smaller firms will be immune from financial penalties unless they are involved in price fixing.

In 2003 Argos and Littlewoods were fined £22 million by the OFT for fixing the price of toys and games together with Hasbro in breach of the Competition Act 1998. Similarly ten businesses including Manchester United, were fined a total of £18.6 million in October 2003 for fixing the price of Umbro replica football kits in breach of the competition Act 1998.

2.11.4 The European Commission

The Commission of the European Union can use its powers, directly derived from the Treaty of Rome, to control the behaviour of monopolists and to increase the degree of competition across the European Union. It has long had powers, similar to those now adopted by the United Kingdom in the 1998 Competition Act, to prohibit price fixing, market sharing and production limitations. In this context they do not allow ‘dual pricing’.

This is a system whereby exports to other EU countries are not allowed to be charged at different prices. For instance, Distillers sold whisky at higher prices in France and tried to restrict British buyers from purchasing the whisky more cheaply in England for resale at lower prices in France. The European Court adjudged that Distillers was distorting competition by trying to prevent its dual pricing being undermined.

The European Union also agreed in 1989 to cross-border merger regulations. There were three criteria for judging such mergers. First, the merging companies needed to have a combined world turnover of over 5 billion ECU. Second, the companies involved in the merger must have a turnover in the EU of at least 250 million ECU each. Third, if two-thirds of the business of the companies in the merger is within one country of the European Union, the merger would fall within national rather than EU regulations.
Proposed mergers must be notified to the Commission of the European Union and will be judged against any potential abuse of a dominant position. Decisions regarding the merger will be made within five months of notification. Finally, to enhance competition the European Union does not allow government subsidies to industries or firms which will distort competition. In this respect Ryanair faced regulatory pressure from the European Commission to repay financial support it received from the Wallonia region in Belgium in establishing its operations at Brussels–Charleroi airport.

### 2.11.5 Specific industry regulators

As privatisation of large nationalised industries usually transformed public monopolies into private monopolies, the government accepted the need to create regulatory watchdogs. These bodies, such as the Office of Telecommunications (OFTEL) to supervise British Telecom, were performing a role which government departments did formerly. They were created in the 1980s as privatisation grew, and operated independently of any other investigatory body, such as the MMC. For example, British Gas was privatised in 1986 and then investigated by the MMC in 1988 and again in 1993. This latter report resulted from the long-running dispute between British Gas and OFGAS, its regulator.

On 28 December 2003 the Office of Communications (OFCOM) was established. It is now the regulator for the media and telecommunications industries and replaces five other regularity bodies including OFTEL. OFCOM will regulate standards of taste and decency on all TV and radio channels. It will licence commercial TV and radio. It will also oversee the telecommunications industry, where OFTEL was seen to have performed poorly particularly in relation to the regulation of BT and the deregulation of directory inquiries.

The role of specific industry regulators (SIRs) is essentially twofold. First, when large state monopolies were privatised, they lacked effective competition. SIRs can introduce an element of competition by setting price caps and performance standards. In this way consumers can share in the benefits of competitive behaviour even if competition does not actually exist in the market. Second, SIRs can speed up the introduction of competition in such markets by reducing barriers to entry for new firms.

The SIRs have enjoyed some success in limiting price rises and in getting some price reductions and freezes (e.g. British Gas 1992–93) and ending anti-competitive practices (e.g. BT preventing new telephone companies, such as Cable and Wireless, having access to its network). The regulators have also made recommendations to change the structure of their industry to improve competition, e.g. OFGAS’s call to split British Gas into twelve regional distributional companies. As a result of more effective competition, the share of their respective markets for BT and British Gas have fallen considerably since privatisation.

### Exercise 2.11

Answer the following questions based on the preceding information. You can check your answers below.

1. What is the main weakness of the Monopolies and Mergers Commission/Competition Commission?
2. Name one gateway (defence) against the charge of restrictive practice?
3. What do the regulatory watchdogs supervise?

✔ Solutions

1. The main weakness of the MMC/CC is that it can only recommend changes, and ministers have often ignored its proposals, for example, the brewers.
2. There are many defences to the charge of restrictive practice, but the main one is ‘public interest’.
3. The main regulatory watchdogs are OFWAT, OFGAS, OFTEL, OFFER, OFLOT and OFRAIL, and they supervise recently privatised former nationalised industries.

2.12 Chapter summary

This chapter has dealt with the way in which the individual markets which make up the economy function. The primary model is that of market price determined by the interaction of supply and demand. However the exact mechanisms by which this occurs varies from market to market and from industry to industry. Thus price and output determination under different market structures, including the public sector, were investigated. In particular, the chapter considered:

- the factors influencing individual and market demand;
- the importance of the price, income and cross-elasticity of demand;
- the structure of costs and supply;
- costs in the short and long run and the size of business organisations;
- price and output determination, and the competitive process in competitive, oligopolistic and monopoly-dominated markets;
- government policy towards competition including public-sector activities, regulation and competition policy.

The analysis in this chapter will equip you to understand the workings of particular markets and the issues of policy related to them. However, the economy as a whole may function differently from individual markets. The behaviour of the economy as a whole is the subject of macroeconomics, and is the subject matter of the next chapter.
This reading considers competition in the UK supermarket business and discusses the nature and impact of competition law on proposed mergers in the industry.

How drive times gave Green a clear run at Safeway
Julia Finch, The Guardian, 29 March 2003

The office of fair trading (OFT) yesterday spelt out the reasons behind its surprise decision to send all the rival supermarket bids for Safeway to a competition commission inquiry – leaving entrepreneur Philip Green with a clear run to mount a quick bid.

Trade secretary Patricia Hewitt accepted the OFT advice, which will tie up the supermarket bidders at the competition commission for five months. Mr Green now has time on his side to persuade Safeway shareholders to accept his bid rather than wait for a higher offer – assuming the commission allows one.

The big surprise in the OFT’s conclusions, revealed earlier this month, was that Bradford-based Morrisons was referred to alongside Sainsbury’s, Asda and Tesco. It was a foregone conclusion that the three giants of the grocery business would face a long inquiry. However, most City analysts and competition lawyers had expected Morrisons to escape, on the grounds there was little geographical overlap between Morrisons and Safeway and that a merger might actually increase competition by creating a fourth national player equal in size to Asda.

When Morrisons announced its bid it estimated it might have to sell only eight stores from the 600-strong combined portfolio of its own and Safeway stores. That estimate was calculated using the local competition test laid down by the commission in 2000, which said there should be three competing fascias within a 10-minute drive in urban areas and 15 minute in rural areas.

But the publication of the OFT inquiry report yesterday suggested the number of stores where Morrisons faced a local competition issue was nearer 50 – and if the drive times were stretched by just five minutes the total could reach 70.

However, the OFT also made it clear that while there were concerns about local competition, the Morrisons bid presented no national competition problems. The other three potential bidders, however, were judged to pose substantial problems – locally and nationally.

After reading the OFT report analysts said they were convinced Morrisons would eventually be allowed to bid – but most now believe there are clear signals that the other
three would be blocked. One analyst said Mr Green was now the firm favourite: ‘It’s his if he wants it. If he bids sensibly he’ll get it, and if he bids offensively investors will wait.’

Last night a spokesman for Morrisons said they were encouraged by the report: ‘We steam ahead, with the intention of announcing a full bid in due course,’ he said.

The number of ‘overlaps’ uncovered by the OFT does not equal the number of stores each bidder would have to sell, but in all cases it is likely to be a higher number than the bidders had expected. The OFT said there would be 200 trouble spots with a combined Tesco/Safeway, 100 with an Asda bid and 150 with Sainsbury’s.

However, the Safeway prize is considered so great that all the bidders would probably accept big sell-offs.

All the bidders had promised lower prices and Sainsbury’s suggested it would increase choice by offering better food. Asda told the OFT if it won it would force Tesco to cut its prices. But the OFT rejected all those arguments, saying competition was not just about price.

The OFT said its task had been made harder by the supermarkets providing non-standard interpretations of drive time – Sainsbury’s and Tesco assumed faster motoring speeds, for instance, meaning shoppers could get to more stores in the same time.

**Why the OFT said no…**

**Wm Morrison**

*Convenience stores.* Morrisons has no convenience stores, so no competition issues.

*Petrol.* A merged company would have 5–10% of the market – so irrelevant.

*One-stop shopping.* National competition – After merger Morrisons/Safeway would have 15–20% of the market. The OFT points out that this increase in market share might reflect the creation of a new national rival.

*Local competition.* Morrisons originally calculated it might have to divest about 8 stores. The OFT has calculated there are 50 overlaps, and with a small change to existing competition commission criteria there could be 70. The OFT points out that is a very large proportion of Morrison’s estate of 119 outlets.

*Buyer power.* The OFT points out that Morrisons has not signed the code of practice governing supermarkets’ dealings with suppliers, even though it has promised to do so.

*Conclusion.* ‘At the local level the merger would appear likely to reduce competition … Turning to the national picture, we believe it is unlikely the merger would have significant detrimental effects.’

**Tesco**

*Convenience stores.* Safeway and Tesco combined would have 15% of the market – not a concern.

*Petrol.* A merged company would have 10–15% of the market – again, not a concern.

*One-stop shopping.* National competition – After merger Safeway/Tesco would have 40–45% of the market. It would be twice as big as Asda or Sainsbury’s – its nearest rivals. In some areas – the south-west, Wales, and eastern England – Tesco would have 55–60% of the market.

*Local competition* – The OFT identified 200 stores where Tesco and Safeway overlap.

*Buyer power.* The OFT says a merged Tesco/Safeway would be so huge ‘buyer concerns could arise’. Customer benefits Uncertain and not substantial.
Conclusion. ‘The merger may result in an increase in prices or a reduction in competition in non-price parameters across the board.’

Asda/Wal-Mart

Convenience stores. Asda has so few small stores, the issue was judged irrelevant.

Petrol. Combined share of the market would be only 5–10% – so irrelevant.

One-stop shopping. National competition – After merger Asda/Safeway would have 30–35% of the market. The merged group and Tesco would together have 60–70% of the national market, with higher proportions elsewhere – up to 80% in Wales and up to 90% in Scotland.

‘The merger seems likely to reduce competition at the national level substantially.’

Local competition. Asda had estimated it would have to divest less than 80 stores, but the OFT says there are potential problems at 100.

Buyer power. Asda claimed own label manufacturers would benefit because of bigger orders. The OFT said there was no evidence savings would be passed to customers.

Customer benefits. Asda claimed it would cut prices by 15% and that Tesco prices could be driven down because more than 60% of its stores would be up against an Asda. The OFT thought that unlikely.

Conclusion. On balance the OFT thought an Asda takeover might have some customer benefits – but not enough to outweigh competition problems.

J Sainsbury

Convenience stores. Safeway and Sainsbury’s would have 10–15% of the market – not a case for concern.

Petrol. Combined share of the market would be just over 10% – small and no competition problems.

One-stop shopping. National competition – As a result of the merger the combined group would have 30–35% of the market. Sainsbury’s/Safeway and Tesco would together have 60–70% of the national market and up to 80% in London and the south.

‘The merger seems likely to reduce competition at the national level substantially.’

Local competition. There are potential overlaps between Safeway and Sainsbury’s at 150 stores. Sainsbury’s claimed it would have to divest only 90.

Customer benefits. Sainsbury’s claims it would cut prices and provide better quality food. The OFT said there was no evidence that was the case.

Philip Green

Overlaps. Product overlaps between Safeway and Mr Green’s businesses are limited. There are some overlaps between Safeway and Bhs in merchandise for the home, toiletries and in-store cafés – but they are small and irrelevant.

Safeway would remain a competitor within the supermarket sector. Philip Green told the OFT he would improve Safeway and therefore increase competition in the sector.

Portfolio effects. The OFT acknowledges that Mr Green might offer discount schemes across his various outlets, but decided they were unlikely to lead to ‘consumer detriment’.

Third party concerns. The OFT said it had received submissions suggesting the company would be too highly geared and that Mr Green might break the business up. However, the OFT said there was no reason to think the borrowings were unsustainable and that if a break-up appeared likely it would consider the move separately.

Conclusion. ‘No competition concerns are raised by this merger.’
Discussion points
Discuss these within your study group before reading the outline solutions

1. Why have the proposed mergers between the four supermarkets and Safeways been referred to the Competition Commission but the merger between Philip Green and Safeways has not?

2. What issues would you expect the Competition Commission to consider when investigating the proposed mergers?

Outline solutions

1. The mergers have been referred to the Competition Commission because mergers between existing supermarkets would increase the degree of concentration in the industry and raise the market dominance of the merged company. This would raise fears of monopoly powers within the market. This would not apply to Philip Green since this business does not operate in the supermarket industry.

2. The issues that one would expect the Competition Commission to consider would include:
   - the effect on local competition hence the importance of ‘drive times’;
   - the impact on prices which might rise as a result of reduced competition, but might fall if the merged company can secure economies of scale;
   - the impact on the quality of the product and the service provided to customers;
   - possible impact on suppliers (e.g. farmers) if they are faced by very powerful buyers (e.g. a giant supermarket) with monopsony powers.
Revision Questions

This section of the chapter contains examination-standard questions drawn from past CIMA examinations. You should use these for practice and revision. As in the previous chapter, the multiple-choice questions have only one correct answer and this answer is not subject to debate by economists. This section also contains data-response questions; each of these have both objective-testing elements and discussion elements. You should remember that the discussion elements are not open invitations to discuss issues using general knowledge; they are an opportunity to use economic principles and concepts to discuss certain specified issues.

Question 1 Multiple-choice selection

1.1 A business, currently selling 10,000 units of its product per month, plans to reduce the retail price from £1 to £0.90. It knows from previous experience that the price elasticity of demand for this product is (−)1.5. Assuming no other changes, the sales the business can now expect each month will be:

(A) 8,500
(B) 10,500
(C) 11,000
(D) 11,500

1.2 If the demand for a good is price elastic, a fall in its price will lead to:

(i) a rise in sales.
(ii) a fall in sales.
(iii) a rise in total expenditure on the good.
(iv) a fall in total expenditure on the good.

(A) (i) and (iii) only.
(B) (i) and (iv) only.
(C) (ii) and (iii) only.
(D) (ii) and (iv) only.

1.3 Which one of the following would not lead to a shift in the demand curve for overseas holidays?

(A) An advertising campaign by holiday-tour operators.
(B) A fall in the disposable income of consumers.
(C) A rise in the price of domestic holidays.
(D) A rise in the exchange rate for the domestic currency.
1.4 The ‘law of diminishing returns’ can apply to a business only when:
(A) all factors of production can be varied.
(B) at least one factor of production is fixed.
(C) all factors of production are fixed.
(D) capital used in production is fixed.

1.5 Which of the following is not a source of economies of scale?
(A) The introduction of specialist capital equipment.
(B) Bulk-buying.
(C) The employment of specialist managers.
(D) Cost savings resulting from new production techniques.

1.6 Which of the following is not normally a characteristic of an oligopolistic market?
(A) Heavy expenditure on advertising.
(B) Abnormal profits in the long run.
(C) Barriers to the entry of new firms.
(D) A preference for price competition.

1.7 Which one of the following would not act as a barrier to the entry of new firms into an industry?
(A) Perfect consumer knowledge.
(B) Economies of scale.
(C) High fixed costs of production.
(D) Brand loyalty.

1.8 Which one of the following is not a valid economic reason for producing a good or service in the public sector?
(A) The good is a basic commodity consumed by everyone.
(B) It is a public good.
(C) There is a natural monopoly in the production of the good.
(D) It is a merit good.

1.9 Which one of the following is not a feature of an industry operating under conditions of monopolistic competition?
(A) There is product differentiation.
(B) Producers operate at below full capacity output.
(C) Firms maximise profits where marginal cost equals marginal revenue.
(D) There is one dominant producer.

1.10 Which of the following statements about a policy of privatising a public-sector industry are true?
(i) It will permit economies of scale.
(ii) It is a means of widening share ownership.
(iii) The industry would become more responsive to the profit motive.
(iv) It is a source of funds for the government.

(A) (i) and (ii) only.
(B) (i), (ii) and (iii) only.
(C) (ii) and (iii) only.
(D) (ii), (iii) and (iv) only.
Question 2

The following data refer to the UK economy:

*Estimates of price* elasticities of demand for goods and services

<table>
<thead>
<tr>
<th>Broad category</th>
<th>Narrow category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel &amp; light</td>
<td>Dairy produce</td>
</tr>
<tr>
<td>-0.47</td>
<td>-0.05</td>
</tr>
<tr>
<td>Food</td>
<td>Bread &amp; cereals</td>
</tr>
<tr>
<td>-0.52</td>
<td>-0.22</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Entertainment</td>
</tr>
<tr>
<td>-0.83</td>
<td>-1.40</td>
</tr>
<tr>
<td>Durable goods</td>
<td>Travel abroad</td>
</tr>
<tr>
<td>-0.89</td>
<td>-1.63</td>
</tr>
<tr>
<td>Services</td>
<td>Catering</td>
</tr>
<tr>
<td>-1.02</td>
<td>-2.61</td>
</tr>
</tbody>
</table>

*Estimates of income* elasticities of demand for goods and services

<table>
<thead>
<tr>
<th>Broad category</th>
<th>Narrow category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel &amp; light</td>
<td>Coal</td>
</tr>
<tr>
<td>0.30</td>
<td>-2.02</td>
</tr>
<tr>
<td>Food</td>
<td>Bread &amp; cereals</td>
</tr>
<tr>
<td>0.45</td>
<td>-0.50</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Vegetables</td>
</tr>
<tr>
<td>1.14</td>
<td>0.87</td>
</tr>
<tr>
<td>Durable goods</td>
<td>Travel abroad</td>
</tr>
<tr>
<td>1.47</td>
<td>1.14</td>
</tr>
<tr>
<td>Services</td>
<td>Wines &amp; spirits</td>
</tr>
<tr>
<td>1.75</td>
<td>2.60</td>
</tr>
</tbody>
</table>

Requirements

Using *both* your knowledge of economic theory *and* the data above:

(a) From the data state whether the following goods have ‘price elastic demand’ or ‘price inelastic demand’

(i) Fuel and light.

(ii) Services.

(iii) Catering.

(3 marks)

(b) Which of the following statements best describes the concept of ‘income elasticity of demand’?

(i) The extent to which the demand for goods and services changes in response to a change in income.

(ii) The impact on consumer income of a change in the price of goods and services.

(iii) The extent to which the demand for a good or service rises when consumer incomes rise.

(1 mark)

(c) State whether each of the following are true or false:

(i) In a recession, the demand for goods which have high income elasticities of demand will fall the most.

(ii) If an indirect tax is placed on a good with a high price elasticity of demand, the main burden of the tax will fall on the producer.

(iii) Inferior goods are those good with a price elasticity of less than −1.

(iv) A price elasticity with a negative value shows that the good in question has a very low price elasticity.
(v) If the demand for a good has a very low price elasticity of demand, an increase in
the supply of the good will lead to a steep fall in its price.
(vi) If a good or service has a negative income elasticity of demand, the demand for it
will rise when incomes rise but at a less rapid rate.

(6 marks)
(Total marks = 10)

**Question 3**

The following data refer to the costs of a firm and the demand for its product:

<table>
<thead>
<tr>
<th>Quantity sold</th>
<th>Price</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>£34</td>
<td>£12</td>
</tr>
<tr>
<td>2</td>
<td>£30</td>
<td>£20</td>
</tr>
<tr>
<td>3</td>
<td>£27</td>
<td>£34</td>
</tr>
<tr>
<td>4</td>
<td>£25</td>
<td>£53</td>
</tr>
<tr>
<td>5</td>
<td>£23</td>
<td>£75</td>
</tr>
<tr>
<td>6</td>
<td>£21</td>
<td>£102</td>
</tr>
<tr>
<td>7</td>
<td>£19</td>
<td>£131</td>
</tr>
</tbody>
</table>

**Requirements**

Using both your knowledge of economic theory and the data above:

(a) State which are the correct values for the following:

(i) Marginal cost at output level 3. Is it £14, £7 or £11.33?
(ii) Marginal revenue at output level 4. Is it £2, £19 or £25?
(iii) Average cost at output level 5. Is it £15, £22, or £75?
(iv) The profit maximizing level of output. Is it 4, 5 or 6?
(v) The price elasticity of demand for a fall in price from £25 to £23. Is it -3.125, -2 or -0.5?

(5 marks)

(b) State whether each of the following would lead to a high or a low price elasticity of
demand for the good or have no effect on price elasticity.

(i) The existence of many substitutes.
(ii) A low proportion of income spent on the good.
(iii) A long time period under consideration.
(iv) Effective differentiation of the good by strong advertising.
(v) A high indirect tax placed on the good.

(5 marks)
(Total marks = 10)

**Question 4**

The following passage is based on a newspaper article:

British cod – the staple of fish and chips – is on the verge of becoming an endangered
species, according to the Worldwide Fund for Nature (WWF), the conservation group.
It stressed that the crisis in the fishing industry was due to poor management and to
over-fishing. The total weight of cod caught in the North Sea had halved since the 1960s. Similar falls in catches had occurred for other types of fish.

The WWF proposes the establishment of fishing free zones to protect areas where young fish grow and develop. The WWF said that such a strategy would lead to increased fish stocks and a larger fishing catch for fisherman within five years. However, the problem may become less urgent as consumer demand for this type of fish may decline in the long run. Higher prices themselves may discourage consumers and some observers believe that for many consumers fish and chips may be an inferior good and, in many cases, faces a growing number of alternatives.

Requirements
Using both your knowledge of economic theory and material contained in the above passage:

(a) State whether each of the following would lead to a shift in the demand curve for fish or a movement along the demand curve for fish.

(i) An increase in the number of substitutes for fish.
(ii) A rise in the price of fish.
(iii) An outward shift in the supply curve of fish.
(iv) A rise in income of fish consumers.

(b) State whether each of the following is true or false.

(i) If the demand for fish is very price elastic a fall in supply will raise prices a great deal.
(ii) If the supply of fish is price inelastic, a reduction in supply will have a smaller effect on price than if the supply were price elastic.
(iii) Price changes affect demand by leading to a shift in the demand curve for the product.
(iv) Effective advertising might raise sales by shifting the demand curve to the right.
(v) If the demand for fish was perfectly price inelastic, a change in income would have no effect on demand.
(vi) The longer the time period considered, the greater becomes the price elasticity of demand for goods.

(Total marks = 10)
Solutions to Revision Questions

The answers given for the data response questions are what might reasonably be expected of a candidate in an examination in order to achieve a good pass mark. You should also pay particular attention to the extracts from examiners’ reports indicating what were the common errors in answering these questions.

Solution 1

1.1 Solution: (D)

\[
\text{PED} = \frac{\text{Percentage change in demand}}{\text{Percentage change in price}}
\]

A value of \((-\)1.5 implies that a 10 per cent price cut will raise demand and sales by 15 per cent, that is, from 10,000 per month to 11,500 per month.

1.2 Solution: (A)

If the demand for a good is price elastic, the demand for it will change more than proportionately to the change in price. Thus a price fall will raise sales and will increase total expenditure on the good.

1.3 Solution: D

Responses (A), (B) and (C) all involve changes in the conditions of demand and hence would lead to a shift in the demand curve. However, response (D) involves a change in the price of the holiday (a rise in the exchange rate would reduce the price of the holiday), and thus demand would rise as a result of a movement along the demand curve.

1.4 Solution: B

The law of diminishing returns states that if more units of a variable factor are added to a fixed factor, the increment in output will eventually decline. Responses (A) and (C) are therefore incorrect. Response (D) is also incorrect, since the law applies for any fixed factor, not only capital.

1.5 Solution: D

Economies of scale are the cost savings resulting from any activity or process which is made possible by increasing the scale of output. This applies to responses
(A), (B) and (C), since these are made possible as the size of companies increases. Response (D), however, is incorrect since it refers to technical change, and this would reduce costs for all producers, large and small.

1.6 Solution: D

A typical feature of oligopoly is the desire to avoid price cutting, because other firms will react with similar price cuts. The preference in oligopolistic markets is for non-price competition.

1.7 Solution: A

Perfect information for consumers would provide them with information about new entrants into the industry as well as about existing producers. This would remove a barrier to entry. The other responses all represent significant difficulties for new entrants and thus act as barriers to entry.

1.8 Solution: A

Because a commodity is consumed by everyone (e.g. food), it does not follow that it has any special features such that it cannot be produced efficiently in a competitive market in the private sector. All other responses are valid reasons why a good or service should be produced wholly, or partly, in the public sector.

1.9 Solution: D

Monopolistic competition is a situation where a market has many suppliers producing similar, but differentiated goods. A typical result is that no firm has a share of the market large enough to produce at the optimum level. Response (C) applies to all markets including monopolistic competition. Response (D) is the correct response since this refers to a monopoly market.

1.10 Solution: D

Privatisation does not produce larger firms and often leads to smaller firms when public-sector monopolies are broken up into smaller companies (e.g. railways) on privatisation. Thus the privatisation process cannot increase the scope for economies of scale. All the other responses are valid reasons for privatisation.

Solution 2

(a) (i) price inelastic demand
     (ii) price elastic demand
     (iii) price elastic demand

(b) Statement (i)

(c) (i) True
     (ii) True
     (iii) False
     (iv) False
     (v) True
     (vi) False
Solution 3

(a) (i) £14
(ii) £19
(iii) £15
(iv) Output level 4
(v) −3.125

(b) (i) high elasticity
(ii) low elasticity
(iii) high elasticity
(iv) low elasticity
(v) no effect

Solution 4

(a) (i) a shift of the demand curve.
(ii) a movement along the demand curve.
(iii) a movement along the demand curve.
(iv) a shift of the demand curve.

(b) (i) False; price will rise much more if demand is price inelastic.
(ii) True; because supply is inelastic, the reduction in supply is mitigated as is the effect on price.
(iii) False; price changes lead to movements along the demand curve.
(iv) True; advertising may get consumers to buy more at every price.
(v) False; a change in income would lead to a shift in the demand curve.
(vi) True; the longer the time period, the easier it is to find substitutes.
3.1 National income

3.1.1 Measurement

National income is measured in order to assess the performance of an economy over a period of time, usually a year. This, in turn, will give some idea of changes in living standards and enable international comparisons to be made.

The definition of the national income is the total value of the goods and services produced by a country’s resources over a year. In order to make meaningful comparisons
between years, allowance is made for inflation. This enables real changes to be identified.

The accounting needed to measure national income is very complex. Measurement is done in three ways:

- national output;
- national income;
- national expenditure.

Each method is subject to error, so final figures need adjustments in order to tally.

When goods and services are produced, people receive incomes, and thus in theory the addition of the prices of all the goods and services should equal the sum of all the income of the population. Similarly, those figures should equate with the total amount of spending by the population on goods and services. However, numerous adjustments have to be made when calculating by each method.

National income can be used for a variety of purposes. When we wish to measure the productivity of an economy the appropriate measure of national income is gross domestic product. When we wish to measure the standard of living in an economy the appropriate measure is gross national product.

**Gross domestic product (GDP)**

This term is often referred to by economists because it shows the value of the output produced in the UK during one year. If it increases in real terms, then there has been economic growth.

If we take all the domestic spending and adjust for trade as in Table 3.1, we can calculate GDP at market prices. However, because the government interferes in the market system through indirect taxes and subsidies, this does not show the actual factor cost. So, as taxes exceed subsidies, a deduction from GDP at market prices gives the valuation of GDP at factor cost.

### Table 3.1 GDP by expenditure method 2003

<table>
<thead>
<tr>
<th>£m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumers’ expenditure</td>
</tr>
<tr>
<td>Consumption by non-profit organisations and other</td>
</tr>
<tr>
<td>General government expenditure</td>
</tr>
<tr>
<td>Gross domestic fixed capital formation</td>
</tr>
<tr>
<td>Changes in inventories</td>
</tr>
<tr>
<td>Statistical discrepancy</td>
</tr>
<tr>
<td>Total domestic expenditure</td>
</tr>
<tr>
<td>Exports</td>
</tr>
<tr>
<td>Less imports</td>
</tr>
<tr>
<td>Statistical discrepancy</td>
</tr>
<tr>
<td>GDP at market prices</td>
</tr>
<tr>
<td>Less taxes on expenditure plus subsidies</td>
</tr>
<tr>
<td>GDP at factor cost</td>
</tr>
<tr>
<td>Net property income from abroad</td>
</tr>
<tr>
<td>GNP at factor cost</td>
</tr>
</tbody>
</table>

*Source: Economic Trends*
A similar figure can be computed, using the income method, as it comprises the total incomes derived from the use of the resources to produce the goods and services.

**Gross national product**

This term refers to the value of the output produced (and incomes earned) by all British residents in a year.

- Income earned by UK companies and individuals abroad and remitted back to the UK raises GNP.
- Income earned by overseas companies and individuals in the UK and remitted back to their countries of origin reduces GNP.
- The overall difference is shown in the calculations by the expenditure method as net property income from abroad.

**Capital consumption**

Each year the nation’s capital assets suffer wear and tear, and thus lose value, as they are used to produce goods and services. The deduction for this depreciation is termed *capital consumption*. It is deducted from GNP to get national income (Table 3.2), or net national product as it is sometimes termed.

Gross capital formation refers to *new investment*. Thus the difference between gross capital formation (total new investment) and capital consumption (depreciation) gives net investment during the year. The higher this figure, the greater is the future productive potential of the economy.

Some economists feel that the traditional emphasis on the depreciation of physical assets is too narrow and that human capital should be considered too. After all, the productive resources of any economy include the skills of its workers. However, the great difficulty of assessment and qualification makes such adjustments impractical and unlikely.

Similarly, the depletion of national assets is not included in the national income accounts. If there are social costs such as pollution resulting from production, natural assets like clear air and clear rivers may be diminished and become increasingly scarce. A valuation of such an amenity loss and resource depletion could be added to capital consumption.

When irreplaceable resources, such as fossil fuels, are consumed in production this weakens the economy for the future. Hence, some economists have suggested that a deduction from national income should be made, in the same way as for depreciation of capital equipment. Hence some measure of *sustainable* national income might be derived.

<table>
<thead>
<tr>
<th>Table 3.2 National income 2003</th>
<th>£m</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNP at factor cost</td>
<td>996,604</td>
</tr>
<tr>
<td>Capital consumption (estimated)</td>
<td>122,212</td>
</tr>
<tr>
<td>National income</td>
<td>874,392</td>
</tr>
</tbody>
</table>

*Source: Economic Trends*
3.1.2 National income calculation

The three methods used to calculate national income are described below.

(i) The expenditure method This calculation adds together the spending on consumption and investment goods and services by consumers, firms and the government. It is the expenditure on current output, rather than secondhand goods, and final goods/services rather than wholesale, which is aggregated. Furthermore, changes in stocks and work in progress are included in the totalling process, with additions to stock/work in progress being treated as spending by the firms holding them.

As shown earlier in Table 3.1, an additional adjustment is made for internationally traded goods. Spending on our exports is added and expenditure on imports to Britain is deducted when calculating the national spending.

There are two main technical problems with this method:
- transfer payments, such as income support, pensions, etc., are deleted from government spending because they are a transfer from taxpayers to recipients via the government;
- taxes and subsidies distort market prices and so need to be allowed for. Thus taxes are deducted so that the true prices of output are determined.

Usefulness of the expenditure method. The expenditure method is useful for detecting changing trends in consumption and investment. Thus, it could reveal any changes between the shares of public sector and private sector, or between current and capital spending. However, some economists feel that certain public expenditure on administration, policing, environmental repair and defence inflates the real value of national income. This spending may be just making good the degradation of the environment and preventing the misuse of resources rather than increasing the amount of finished output. Thus, this method may overestimate national output.

(ii) The income method In this method, the incomes received by the owners of resources are totalled. Out of the four factors of production, wages account for approximately two-thirds of total income and self-employment earns about 12 per cent. The gross payment to the factors are added, with direct taxes and national insurance contributions being ignored because they do not affect the price of the output. Private-sector profits are distinguished from public-sector surpluses in the accounts. Other factor incomes are interest, dividends, etc., and the imputed consumption of non-trading capital. The latter is an adjustment made for the free use of assets by people for themselves which they might charge other people to use.

The income method is illustrated in Table 3.3.

<table>
<thead>
<tr>
<th>Table 3.3 GDP by income method 2003</th>
<th>£m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross trading profits of companies</td>
<td>235,324</td>
</tr>
<tr>
<td>Gross trading surpluses of government</td>
<td>7,149</td>
</tr>
<tr>
<td>Self-employment and mixed incomes</td>
<td>101,866</td>
</tr>
<tr>
<td>Income from employment</td>
<td>614,917</td>
</tr>
<tr>
<td>Statistical discrepancy</td>
<td>16,982</td>
</tr>
<tr>
<td>GDP at factor cost</td>
<td>976,148</td>
</tr>
</tbody>
</table>

Source: Economic Trends
There are three technical adjustments with this method:

- transfer payments are excluded as income because the people receiving them do not produce anything;
- stock appreciation is deducted from the total, because when inflation makes existing unsold stocks more valuable, production has not increased;
- residual error is added to make the statistics from each method balance. This figure is likely to include incomes gained in the black economy, and thus illegally earned, and so not showing up as factor income in the Inland Revenue’s calculations. There are various estimates of the size of the black economy, with 4 per cent of GDP being the average.

Usefulness of the income method. The income method is useful in showing the changes in share of income between different factors of production. For example, the 1980s have shown an increasing share attributable to self-employment. However, as the latter is a significant contributor to the black economy, total domestic income may have become underestimated (despite the residual error adjustment).

(iii) The output method In this calculation, the value of the production from each industrial sector is ascertained and added. To avoid double counting, we take the value added at each stage of production. If the gross values of each firm’s output were added, the total would be in excess of the actual national income because the output of some firms becomes the input of other firms at the next stage of production.

This method requires detailed knowledge of pricing. However, in the public sector, merit goods are provided at zero price while public goods, such as defence, are not marketed. So the value of these outputs is based on the factor cost of production. The weakness of this method is that an increase in public sector pay shows up as higher value output, irrespective of the productivity of the workforce. For example, higher police pay shows up in the national income accounts as higher ‘output’, but if there is more crime and lower clear-up rates, consumer satisfaction may have fallen. This creates a tendency for GDP to be overestimated.

Two technical adjustments are also needed:

- statistical discrepancy is included to achieve balance;
- adjustment for financial services is made because some financial services (e.g. fees paid to accountants) cover all stages of production. Thus, this is usually a large deduction from the total.

Usefulness of the output method. The output method shows the changing shares of the industrial sectors in the British economy. For instance, the de-industrialisation of the 1980s is illustrated by the fall in the contribution of manufacturing to the total and the rise in ‘banking, finance, insurance and business services’.

However, there are deficiencies with this method:

- it excludes output produced but not sold such as DIY and other self-provided goods and services;
- the output represented by housework is not included although paid domestic help is included;
- increased leisure time resulting from quicker production methods does not show up in the output statistics;
- improved quality of output is not always reflected in output data.

Thus it is possible that the output method may underestimate or overestimate the real output of the economy.
3.1.3 The use of national income statistics

The difficulties of measurement and the discrepancies between the three different methods mean that the national income figure is really just a sophisticated estimate. In addition, in order to make valid comparisons, it requires further adjustments for inflation and population changes. Therefore, the most useful figure is probably real national income per head. Variations in this statistic give a general idea of changes in living standards, both through the years and between countries.

- An increase in real national income per head indicates a rise in living standards. However if taxes have risen a higher per capita national income would be required to maintain living standards and a measure of disposable income might be more useful.
- The data might hide a change in income distribution such that a rising per capita income can occur while some groups of people and some areas of the country have become poorer.

Despite these qualifications, which need to be made to national income calculations, it is universally agreed that the average British citizen is better off in terms of real income, personal assets and leisure time than in earlier decades. There may be concern regarding the pace of life, the environment and social standards but, financially, life for most people is now much improved compared with the inter-war years and the post-war years.

However, there is dissatisfaction that this improvement has not matched the gains in real income made in many other developed nations. International comparisons have shown that UK per capita income, although rising at about 2 per cent a year for much of the last 50 years, fell relative to that of many other developed economies. However in the last decade UK performance has greatly improved and per capita income has risen faster than in many OECD economies.

Difficulties

There are many problems when making such comparisons of economic development. There are two underlying differences which affect all others. First, cultural differences mean that the way of life will place different values on different goods and services. For example, if barter, subsistence and mutual help are part of the culture then the official figures may underestimate the true level of output per head. Second, the accuracy of the data will vary in quality and quantity. For instance, items included in one economy may not be included in another country’s calculations. The integrity of the officials and the resources devoted to collection will determine the efficiency of the statistics.

There are many other factors which make comparing living standards through a comparison with GDP problematic:

- Climatic and geographical differences affect what is needed and what is produced; in warm climates, less output of energy for heating is required. Thus lower national income in these economies does not necessarily mean lower economic welfare.
- Political factors may affect the structure of output. The end of the cold war led to lower defence spending in many countries thus releasing resources to produce output that generates consumer welfare. For example, the UK is currently engaged on a large-scale
programme of public expenditure on health, education and transport. It is possible that increases in defence spending in some countries since September 11th may reverse this process.

- Social indicators of the quality of life do not feature directly in national income statistics. Social problems, such as crime or pollution, may even lead to the need for expenditures to deal with these social costs, thus producing an apparent increase in welfare as national income rises.

It is clear that making international comparisons of national income is fraught with difficulty. Technical adjustments are made for the variations in inflation between economies and changes in exchange rates against the standard of currency (the dollar) which is used. These adjustments facilitate more accurate comparison but the use of the mathematical mean (average) rather than the median can produce unrepresentative results (e.g. Kuwait has the highest average national income but most of its population receive less than what would be considered as low wages in Britain). This arises because of the high concentration of income in a few hands and the unevenness of income distribution.

All of the above problems and qualifications have led to comparisons using selected items which feature in most economies. Items such as major consumer durables (e.g. cars, telephones), divorce rates, doctors, stress-related illnesses and participants in higher education can be calculated per head and used for relative measurement. Although this latter method lacks precision, arguably it indicates the quality of life better than the bald national income per head figures.

### 3.1.4 Economic growth

Increases in real national income per head are usually taken by people to indicate economic growth and thus better living standards. However, this is a gross simplification and subject to many reservations if deductions are to be made from it. For instance, we have seen that increased output per head is an aggregate figure which does not show which type of production has expanded at what cost and to whose benefit. This means that economic growth by this measure cannot necessarily be equated with increased economic welfare. A distinction can be made between short-term and long-term economic growth. The latter is about raising the long-term capacity to produce output while the former concerns employing existing resources more fully and productively.

The most common measurement of economic growth is by calculating GDP at constant prices. This measure can increase generally for two reasons:

- First, production can increase when spare capacity and unused resources are utilised. This enables an economy to operate at full potential. This is a movement towards the production possibility frontier.
- Second, increased output can occur if the potential itself is raised by greater efficiency in the use of existing resources. This would create a new production possibility curve further to the right.

To the economist, the latter is economic growth but in practice the contribution of each of the two sources cannot be distinguished, although the former is really just a one-off improvement while the latter is a permanent change.

The growth rate of the British economy in the post-war period has been criticised. Until the 1990s, it has been inferior to most of our OECD rivals, averaging about 2 1/4 per cent per annum. Growth over 4 per cent per annum has been achieved for short periods but
not sustained, as either balance of payments or inflation problems have resulted and remedial action has been undertaken.

Some possible causes of Britain’s poor economic development have been suggested.

(a) The structure of the British economy. Some economists have argued that productivity in the UK:
- grew more slowly than in other European economies as there was little low productivity labour left in agriculture which could be shifted into higher productivity activities in industry and manufacturing;
- was lower than in some other European economies because of a large and unproductive public sector.

(b) The management of the British economy. It has been claimed that successive governments have mismanaged the economy. In particular it is argued that stop-go policies have damaged the long term growth potential of the economy by:
- excessive expansionary policy in the ‘go’ phase of the trade cycle leading to an unsustainable growth of consumption and of inflationary pressures;
- excessive deflation in the ‘stop’ phase of the trade cycle depressing business investment. Moreover, the trade cycle was sometimes made worse by governments attempting to create economic booms in the run-up to elections.

(c) Low levels of investment. For much of the period up to the 1990s, the proportion of national income devoted to investment in the UK was low by European standards. There was also evidence that British investment was less productive in terms of the extra output generated than in some other countries. The factors that appear to have inhibited investment in the UK include:
- small markets, especially prior to entry into the European Union, which discouraged large scale investment;
- lower willingness of Banks to lend risk capital, especially to manufacturing industry, preferring to lend for the purposes of property development where returns were more certain and quicker;
- the uncertain economic environment and the stop – go nature of economic growth in the UK.

However, since the mid-1990s UK GDP has grown steadily with an average of almost 2.75% per annum. This is faster than the EU average and has been achieved without any serious inflationary pressure and with no recessions. The period 1993–2005 has been the longest period of continuous economic growth in the UK since before 1914. This improved growth performance is seen as a consequence of a range of factors including:
- the ‘new economy’ of high technology based on computing, the internet and e-commerce;
- the supply side reforms adopted since the early 1980s.

The latter helps to explain the non-inflationary growth achieved and the better growth and employment performance of the UK compared to most of its EU partners.

For and against economic growth
Generally, people prefer more goods and services rather than fewer, other things being equal. The evidence of twentieth century Britain shows that the poorest families are now better off in a material sense than their nineteenth-century equivalents. This advance has
not been at the expense of others whose well-being might have suffered. However, cynics suggest that the quality of many mass-produced goods and services has declined because of modern industrial processes, while advertisers create ‘unnecessary demands’ and new consumer durable markets, e.g. double glazing. Absolute poverty has been eliminated in the UK by economic growth and the development of the welfare state. However the desirability of economic growth has been questioned.

- The costs of economic growth have become more apparent. The social costs of congestion and pollution may rise when national income increases. Some of these costs, such as exhaust emissions, road accidents and acid rain, may cause irreversible damage. Other social costs, such as noise, crime and the loss of natural beauty, may have less obvious economic consequences but they diminish the quality of life and their prevention involves the use of scarce resources.
- There is also concern over the consumption in production of irreplaceable resources, such as fossil fuels. In addition, alternatives such as nuclear fuels pose problems of waste disposal, transport and public safety. The Chernobyl disaster in the USSR (1986) emphasised the dangers of this form of power to the world as a whole.
- Although economic growth leads to the provision of more goods and services per capita it is argued that the lifestyle of citizens may change, causing less desirable attitudes to develop. These attitudes are deemed to be complacent, carefree and selfish and may arise from the depersonalised nature of modern production, the insatiable demands of many consumers and the safety net of state benefit and welfare provision.
- A further concern regarding growth is that its benefits may not be fairly distributed. For instance, in Britain the well-established post-war trend towards greater equality in wealth holding was reversed from 1979, partly as a result of the Conservative government’s taxation policies. Thus, certain groups, notably the unemployed, pensioners, single parent families and the disabled, have made smaller gains than the most wealthy.

### 3.2 The circular flow of income

This refers to the movement of money resulting from economic transactions between different groups of people in an economy.

A simple model can be devised to show the income flows. It assumes a two-sector economy of firms and households. There is no government and no overseas sector. Furthermore all income is spent on consumption and all production is sold to the households. In this model (Figure 3.1) firms pay an income to households who become consumers of the firms’ production. The households earn the income by work and the firms by selling their production. As the firms spend money on wages, etc., it becomes the households’ income and the households’ spending on goods/services becomes the firms’ income; the model is ‘circular’.

Clearly, more complex models can be devised. Households may save, as well as consume. This saving may be transferred to firms for investment, so that production can take place. A government can be introduced and it can operate as a producer and a consumer. In order to obtain funds it will tax, thereby influencing the consumption behaviour of households and the production patterns of firms.
The flow of income also becomes more complicated when overseas trade is introduced. Payments are remitted overseas to foreign producers but extra income is generated when domestic firms accumulate earnings from foreign sales.

Therefore, when the simplifying assumptions are dropped and a more complex model is adopted, the circular flow becomes subject to withdrawals and injections. An injection is spending undertaken by outsiders who are neither domestic firms nor households. It increases the amount of income in circulation. Thus government expenditure on investment, consumption and transfer payments is an injection into the flow. These are labelled as benefits in Figure 3.2. Similarly, export earnings add to the flow.

In contrast, a withdrawal is a loss of income from the circular flow. It covers spending by households which is not returned to domestic firms, i.e. import purchases and taxation to the government. A further withdrawal is savings undertaken by households. However, these may return ultimately, via the financial system, to firms as investment.

**Equilibrium**

An economy making full use of its resources will be moving towards a state of rest, or equilibrium. For equilibrium to be established, planned injections must equal planned withdrawals. If planned withdrawals from the circular flow are greater than planned injections into it, then national income will tend to fall. This occurs because planned spending is less than predicted income (derived from output) and producers will accumulate stocks. In the next period of decision-making producers will reduce output, because they have existing unsold stocks, thereby lowering national income. The reverse
will happen when planned withdrawals are less than planned injections. Taking the injections and withdrawals outlined in this chapter, this equilibrium condition is:

\[
I + G + X = S + T + M
\]

where:

- \( I \) = investment
- \( G \) = government spending
- \( X \) = exports
- \( S \) = savings
- \( T \) = taxation
- \( M \) = imports

In examining national income, economists consider large aggregated markets. Monetarists do not accept that such markets need regulating by the government, as they believe in the automatic stability of market forces. On the other hand Keynesians attribute to the government a stabilising role, particularly in the goods market. The other two main aggregated markets are the labour market and the money market. Although monetarists accept the need to make supply less rigid in the labour market, they are concerned with the ‘real’ economy rather than the money markets. In this chapter, the conventional Keynesian analysis is developed in the main, beginning with an examination of the components centrally involved in the determination of national income.

### 3.2.1 Consumption

The spending by people, or households in the simple model, is termed consumption.

The single most important determinant of consumption is income. This is true both for the individual and for the economy as a whole. Thus, the Keynesian consumption function is written as:

\[
C = f(Y)
\]

(i.e. consumption is a function of national income, designated by the letter \( Y \)).

If the amount of income which is not consumed is saved, then it follows that:

\[
S = f(Y)
\]

This is illustrated in Figure 3.3.

Earlier, the importance of planned actions was emphasised in the search for equilibrium. This leads us to consider in more detail what factors determine planned consumption. Keynes suggested that part of consumption was autonomous (denoted by \( a \) in Figure 3.3) and did not vary with income. For instance, someone with no income will need to consume goods and services to survive. They might find the funds from their
savings. This action is known as dis-saving. However, most of people’s consumption is dependent on their disposable income. Generally, as income rises so does consumption, with a tendency for a larger part of the extra income to be saved, rather than consumed, as a person becomes better off. The extent to which consumption changes with income is termed the marginal propensity to consume (MPC) and is the non-autonomous element in consumption (denoted by $b$ in Figure 3.3).

It is calculated by the formula:

\[
MPC = \frac{\text{Change in consumption, } \Delta C}{\text{Change in income, } \Delta Y}
\]

Thus, if a person’s disposable income increases from £100 to £120 per week and her consumption increases from £90 to £105 per week, her MPC would be 0.75 (i.e. 15:20). The MPC for the British economy is usually given as approximately 0.7. Generally, it is assumed that the MPC is positive but likely to fall as income rises.

From these observations about autonomous and income-related consumption, Keynes devised an algebraic equation: $C = a + bY$. This is again illustrated in Figure 3.3. The 45° line locates the points where income on the horizontal axis equals expenditure on the vertical axis.

In Figure 3.3, at income $Y_1$ a small proportion of income is saved. It is noticeable that if income were 0, there would be consumption of the autonomous amount funded by dis-saving. The triangle 0ZX shows that up to income level $Y_1$, savings have to be utilised to finance consumption. However, beyond $X$, savings rise.

The slope of the consumption curve indicates the value of the marginal propensity to consume. If the MPC increased, the line CZ would be steeper. An increase in the MPC causes an increase in the average propensity to consume (APC). This term describes the proportion of disposable income which it is planned to consume. It is calculated by the formula:

\[
\text{MPC} = \frac{\text{Consumption}}{\text{Income}}
\]
Thus, if a person spends £90 out of her disposable income of £100 then her APC is 0.9 (90/100). The APC for the British economy is positive and tends to fall as GDP rises. In Figure 3.3 the APC is more than 1.0 between 0 and \( Y_1 \), equal to 1.0 at \( Y_1 \) and less than 1.0 beyond \( Y_1 \). In each case the MPC is lower than the APC.

In an economy, the consumption of goods and services is undertaken by households, firms and the government.

**Households**

Factors influencing the level of household consumption are as follows:

- **Income.** The Keynesian approach uses present component of income. Another possibility is that people’s consumption is determined by their previous income. Duesenberry formulated a relative income theory in which peer culture is a determinant.

- **Wealth.** Changes in wealth affect consumption spending. At an individual level, an increase in wealth may raise MPC because less saving is needed. Conversely, at low income levels, wealth allows dis-saving, thereby pushing the APC above 1.0. In the economy as a whole, a more egalitarian wealth distribution is likely to raise consumption. The nature of wealth may also be significant. Liquid wealth, such as savings under the bed, is likely to raise consumption, whereas illiquid wealth will probably have little effect on consumption.

- **Government policy.** By taxation and public spending, the government can influence the level (and pattern) of consumption. An increase in direct taxation lowers disposable incomes and thereby reduces the capacity for consumption. Alternatively, higher government spending, particularly on state benefits, raises incomes and stimulates consumption.

- **The cost and availability of credit.** The cheaper the cost and the greater the availability of credit, the more likely it is that consumption will occur. Credit is particularly influential when consumer durables are purchased. The UK has high levels of consumption financed by credit partly because of the wide range and sophistication of the credit instruments available.

- **The rate of interest.** High rates of interest tend to deter borrowing for consumption while low rates tend to encourage borrowing. However, the impact of money and real interest rates on consumption is probably very slight in practice.

- **Price expectations.** In certain circumstances, when price rises are anticipated, consumption might be brought forward. This temporarily raises MPC.

These factors can be described as ‘objective’ influences. In contrast there are ‘subjective’ influences which determine individual behaviour, irrespective of the other factors. For instance, the comic portrayal of Scots as reluctant to spend (low APC) suggests that nationality could be a subjective factor. It is usually argued that consumption by individuals in urban areas is higher than in rural areas.

**Firms**

The consumption undertaken by firms is determined by very similar factors. Their income is mainly sales revenue and borrowing and it can be boosted from accumulated reserves. Government tax and spending policies will influence sales revenue while the rate of interest and credit availability will affect borrowing policies.
Government

The government’s consumption of goods and services is less determined by its income and more determined by need and political preference. One of the fastest growing areas of government spending is social security, in which transfer payments are made to such as the old and unemployed to give them spending power. However, this is not consumption of goods and services. In contrast, spending on defence involves the purchase of goods and services, as does the provision of merit goods and public goods. Government consumption includes central government and local authority spending.

Households’ and firms’ total spending on consumption accounts for about 60 per cent of domestic expenditure at market prices. The government’s share is 23 per cent, while investment accounts for the remaining 17 per cent.

3.2.2 Saving

Saving is the amount of income not spent. Both for the individual and the economy, the level of saving is determined mainly by income. The average propensity to save (APS) is the proportion of disposable income which is saved. It is calculated by saving divided by income. When the person in the earlier example consumed £90 of her £100 income, her APS was 0.1 (10/100). The APS added to the APC always equals unity (1.0) in the Keynesian model. APS is negative (dis-saving) at low income levels. In Figure 3.3 the APS is negative up to Y1 and then positive and increasing.

The main savers in the British economy are the household sector and the firms sector, mainly industrial and commercial companies. The latest Treasury model suggests a 10 per cent saving ratio. Evidence from the British economy indicates that personal saving is more volatile than the retained earnings of firms, although each contributes roughly half to the total. Furthermore, saving by households can be subdivided into discretionary and contractual. The latter tend to be stable and uninfluenced by changes in the economy, partly because the saving is committed and the gains may be sacrificed if the contract is terminated. Examples of contractual saving include pension schemes and life assurance endowment policies. Discretionary savings are influenced by several factors:

- **Interest rates.** In theory, an increase in the rate of interest will mean that people need to save less in order to achieve a given target of income earned in interest. However, this income effect can be offset by the substitution effect. With higher interest rates, people might save more and spend less, as saving is now more attractive. However, the effect of interest rate changes tends to be lagged rather than immediate. Lloyds Bank research suggests that a 1 per cent point rise in the deposit interest rate raises savings by 0.6 per cent after a one-quarter lag.

- **Inflation.** However, to rational consumers the money rate of interest is less important than the real interest rate (i.e. allowing for inflation). In Britain, saving increased from 1988 to 1990 after a decade of falling savings rates when inflation started to increase. The explanation for such seemingly irrational behaviour is that people increase their savings in order to maintain the real value of their wealth. This is further substantiated by the fact that saving declined rapidly from 1980 to 1988, and again in 2001/2002 as house prices escalated (i.e. people experienced wealth rise). This perhaps implies a precautionary motive behind saving, rather than a speculative one.

An alternative explanation for the small increase in APS in 1988–90 could be that people suffered the money illusion; being attracted by the high money (but not real)
interest rates. Another feature of household behaviour is the growth of consumer credit. UK households appear willing to accept very high levels of consumer debt, especially when interest rates are low, as they have in the UK since 2001, and when rising house prices raise the asset values of households.

- Consumption. Savings tends to be a residual after consumption spending has taken place. Thus the factors which determine household consumption also indirectly influence the amount saved.

3.2.3 Investment

Expenditure on investment covers fixed capital formation (e.g. plant, machinery, roads, houses) and the value of the physical increase in stocks of raw materials, work in progress and finished goods. Investment is undertaken by the public sector and the private sector (the latter featuring firms and households) and it enhances the capacity of the economy. The capital stock of the economy is increased by the amount of net investment undertaken each year. Net investment is the difference between gross (total) investment and replacement investment (capital consumption), which accounts for the deterioration of the existing capital equipment stock.

In the Keynesian model, investment \((I)\) refers to planned net investment. Planned and realised investment are only equal at the equilibrium level of national output. At least one-third of all investment is undertaken by the government \((G)\), but in the simple Keynesian approach, investment \((I)\) represents the private sector’s intended net investment.

In Figure 3.4, investment is shown as constant, being autonomously determined and not related to national income levels. Saving has been added as a separate function and equal to investment at the equilibrium level of national income \(Y_e\). The curve \(C+I\) represents aggregate demand (as the government is ignored at present) and it equals aggregate supply (45° line), which is assumed to be elastic in that it responds to increases in aggregate demand, at \(Y_e\), too. \(Y_1\) is a disequilibrium position because the planned demand of firms and households (AMD) exceeds the output produced (AS). This demand can be met by destocking and so output plans in the next period are raised to meet the extra demand and

![Figure 3.4 Equilibrium national income](image-url)
replenish stocks. The effect of this is to raise national income eventually to the equilibrium position $Y_e$. At $Y_2$ the reverse process would work via unintended stock accumulation and lowered production levels.

Saving equals investment at the equilibrium level of national income in the simple Keynesian model, because it is assumed that a savings withdrawal can be transformed into an investment injection. Between $Y_1$ and $Y_e$ investment exceeds saving and so planned injections exceed planned withdrawals, causing national income to increase. At $Y_e$ the injections equal the withdrawals and so there is national income equilibrium. When saving exceeds investments at $Y_2$ there is disequilibrium and a tendency for national income to contract. Savings become potential funds for investment via the financial sector.

**Determinants of investment**

The simple Keynesian model in Figure 3.4 has investment as a constant amount, which is clearly unrealistic. The general determinants of private investment by firms are:

- expectations about future profit flows. These expectations will be influenced by the anticipated revenue from the output of the investment compared with the anticipated costs of the investment;
- the current valuation which the firms place on the likely future profits, i.e. the opportunity cost of the investment.

Both of these determinants are incorporated in two very similar theories of investment discussed below.

**Discounted cash flow**

(a) A firm is concerned with the net rate of return from its investment. The main factors determining this are the expected revenue when the output is sold and the estimated operating costs. If the former does not exceed the latter, then the investment will not be undertaken.

(b) The rate of interest is also crucial. If the funds to be used for investment could earn interest elsewhere, this interest is forgone when the investment is undertaken. Thus, the income stream which the investment generates needs to be reduced (discounted) to a present value (PV) so that the net return can be compared with the supply price of the investment. The cash flow which the investment generates is therefore discounted. If the present value of this discounted cash flow exceeds the supply price (current cost of the investment), then the investment is likely to be profitable. Clearly the higher the rate of interest, the lower the present value of the investment.

The formula used to calculate the present value shows this inverse relationship:

$$PV = \frac{Q_1}{1 + r} + \frac{Q_2}{(1 + r)^2} + \frac{Q_3}{(1 + r)^3} + \cdots + \frac{Q_n}{(1 + r)^n}$$

where $Q_1, \ldots, Q_n$ are the anticipated yearly returns; $r$ is the rate of interest; $n$ is the number of years in which returns are expected.
The value of the denominator increases with each successive year, thus making interest received later in the life of the investment progressively less valuable than that received at the beginning, assuming it is the same amount each year.

**Marginal efficiency of capital**

This investment theory is associated with Keynes. It differs from discounted cash flow in that the necessary rate of interest needed to make the present value of the income stream equal to the supply price is calculated. This rate of discount is termed the *marginal efficiency of capital* (MEC). If the MEC exceeds the current rate of interest then the investment will be profitable.

- *The shape of the MEC curve*. The marginal efficiency of capital can be represented diagrammatically. In Figure 3.5, at a high rate of interest the amount of investment is lower than at a low rate of interest, because MEC needs to be higher. This in turn means that expected returns on the investment need to be greater. The MEC is relatively interest inelastic in Figure 3.5, suggesting that the rate of interest is a relatively unimportant influence on investment decision-making. For instance, with long-term projects the rate of interest may vary frequently and so other factors will take precedence.

- *Shifts in the MEC curve*. The expected yield probably carries more importance than the rate of interest. There are several factors which determine its value:
  - *the state of business confidence*. If businesses are optimistic, they are likely to expect greater returns than if they are pessimistic. Thus changes in business confidence can push MEC to the right as shown in Figure 3.5.
  - *the substitution of other factors*. If wages costs rise, then capital may be substituted, thereby shifting MEC to the right. Similarly, if the cost of capital falls, then MEC will shift to the right, as the profitability of the project will increase.
  - *technological innovation*. If capital becomes more productive this is likely to raise the level of investment at any given rate of interest. This will also push MEC to the right.
  - *government policy*. The ‘stop-go’ economic policies were argued to have increased business uncertainty and thereby deterred investment. In contrast, reductions in corporation tax and improved tax allowances will increase the expected income stream and encourage investment.

*Investment can be affected by more general factors.*

- the availability of credit especially when governments adopt restrictive monetary policies.

![Figure 3.5 Marginal efficiency of capital](image)
technical innovations which can encourage investment.
- high and growing income that can stimulate investment through the accelerator effect.
- political and social objectives which influence investment in the public sector.

### 3.2.4 The accelerator theory

This is a theory showing that changes in the level of output (and income) may partly determine the level of planned investment.

It is assumed that firms try to maintain an optimal relationship between the amount of capital and the volume of output. If this capital/output ratio is kept constant, then clearly changes in final demand for goods will change output levels and thereby change the amount of capital needed.

In Table 3.4 a capital-output ratio of 3:1 is assumed and capital assets have a life of five years. The firm maintains its capital stock each year so the capital required in one year becomes the existing capital of the next year. In Year 1 under consideration the firm has sufficient existing capital to produce the output demanded by sales. However, the Year 2 increase in sales requires new investment of £2,400 to maintain the capital-output ratio. Total investment covering new and replacement investment doubles from £2,400 to £4,800, although sales have only increased by 20 per cent (£4,000 to £4,800). In Year 3 sales continue to expand but total investment is unchanged, while in Year 4 a slower increase in sales leads to an absolute fall in total investment. In Year 5 static sales cause a larger fall in gross investment because no new machines are needed and just replacement takes place. However, in Year 6 not all of the existing machines are replaced because the fall in sales has given the firm excess capacity of £1,500 capital. Ironically, in Year 7, although sales fall again, investment increases because the higher investment of Year 2 now needs replacement, as it has ended its five-year life span. The fall in sales in Year 7 means that £600 of the £4,800 needed to maintain the capital stock is not replaced.

This example shows that the demand for investment varies with the rate of change of demand in the economy. Thus an increase in consumption leads to an increase in the demand for investment goods, and a decrease in the demand for consumer goods leads to a decrease in the demand for investment goods. However, the effect on investment may be magnified ("accelerated").

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales</th>
<th>Capital needed</th>
<th>Existing capital</th>
<th>Net inv'mnt (2–3)</th>
<th>Replacement investment</th>
<th>Total investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>£4,000</td>
<td>£12,000</td>
<td>£12,000</td>
<td>£0</td>
<td>£2,400</td>
<td>£2,400</td>
</tr>
<tr>
<td>2</td>
<td>£4,800</td>
<td>£14,400</td>
<td>£12,000</td>
<td>£2,400</td>
<td>£2,400</td>
<td>£4,800</td>
</tr>
<tr>
<td>3</td>
<td>£5,600</td>
<td>£16,800</td>
<td>£14,400</td>
<td>£2,400</td>
<td>£2,400</td>
<td>£4,800</td>
</tr>
<tr>
<td>4</td>
<td>£6,000</td>
<td>£18,000</td>
<td>£16,800</td>
<td>£1,200</td>
<td>£2,400</td>
<td>£3,600</td>
</tr>
<tr>
<td>5</td>
<td>£6,000</td>
<td>£18,000</td>
<td>£18,000</td>
<td>£0</td>
<td>£2,400</td>
<td>£2,400</td>
</tr>
<tr>
<td>6</td>
<td>£5,500</td>
<td>£16,500</td>
<td>£18,000</td>
<td>£0</td>
<td>£900</td>
<td>£900</td>
</tr>
<tr>
<td>7</td>
<td>£5,300</td>
<td>£15,900</td>
<td>£16,500</td>
<td>£0</td>
<td>£4,200</td>
<td>£4,200</td>
</tr>
</tbody>
</table>
The implication of this theory is that investment demand will tend to be more cyclical and unstable than demand in general. This might provide an explanation of the onset of recessions such as the 2001 recession in the USA which was initially triggered by a sharp fall in business investment.

**UK performance**

Between 1979 and 1982 manufacturing output had a decelerating effect on manufacturing investment in the UK. Output fell by 14 per cent but investment fell by 40 per cent. The recovery of manufacturing investment in the mid-1980s is shown in Figure 3.6, but it was still not strong compared with our European rivals. For example, output per head in British factories is still 25 per cent below that in Germany and France and this is mainly the result of insufficient investment, because there have been significant labour productivity gains.

### 3.2.5 The multiplier

This idea shows the change in national income resulting from a change in planned investment (in the simple model) or a change in government spending or a change in the overseas trade sector (in the five-sector model of Figure 3.2). It looks at the effect of injections (less withdrawals) into the circular flow of income.

The simple Keynesian model featured earlier in this chapter can be extended to include a government sector and an overseas sector. Government spending \( G \) is usually added to consumption \( C \) and investment \( I \) to give aggregate monetary demand (AMD). As Keynesian demand management gives the government a central role in economic management, manipulations of government spending are often used in the Keynesian national income model. Increased government spending and/or tax cuts are injections into the circular flow and may cause a more than proportional increase in national income. This is termed the **multiplier effect**.

Multiplier effects can occur in many ways. When any planned injection into the circular flow increases and other injections and withdrawals remain unchanged, then national income will lead to the use of more factors of production whose earnings will be spent, thereby adding to the income of others who may then spend more, and so on...
**Simple economy**

The effect of a multiplier can be quantified. Its value depends on the number of withdrawals from the circular flow and the assumption about their size. The formula for the multiplier ($K$) is $1$ divided by the marginal rate of withdrawal.

In a simple two-sector model:

$$K = \frac{1}{1 - \text{MPC}} = \frac{1}{\text{MPS}}$$

where MPC is the marginal propensity to consume and MPS is the marginal propensity to save. If the government increased its spending by £10m and £8m was spent on consumption this would circulate around in the economy. Assuming an MPC of 0.8 and MPS of 0.2, the £8m consumption would provide £8m extra income, of which £6.4m ($8m \times 0.8$) would be consumed. Again 80 per cent of this £6.4m would be consumed elsewhere in the economy and so on. The £2m initial saving would be a withdrawal, as would the subsequent £1.6m ($8m \times 0.2$) and so on. In this case $K = 5$, i.e. $(1/0.2)$, meaning that the extra £10m would raise national income by £50m in total. This change can be illustrated diagrammatically (Figure 3.7). The steep slope of the AMD curve shows the high MPS. The small increase needed in AMD to generate a large increase in national income ($Y - Y_f$) indicates the power of the multiplier on the above assumptions. Thus, a government faced with a deflationary gap, such as $ab$ (in Figure 3.7) might raise AMD to $AMD_1$ so that the full employment level of income/output ($Y_f$) might be obtained.

**Open economy with government sector**

The usual more complex model of the economy identifies three significant withdrawals — savings, taxation and imports. In this case $K$ is calculated by the formula

$$K = \frac{1}{\text{MPS} + \text{MRT} + \text{MPM}}$$
It is assumed that the marginal propensity to save (MPS), the marginal rate of taxation (MRT) and the marginal propensity to import (MPM) are all dependent on the level of income. In such a model, the value of the multiplier is very low. For instance, if the marginal rate of taxation is 30 per cent (disposable income becomes 70 per cent of gross income), the marginal propensity to save is 15 per cent and the marginal propensity to import is 30 per cent, then:

$$K = \frac{1}{0.105 + 0.3 + 0.21} = 1.63$$

In the above calculation MPS = 0.105 because saving is 15 per cent of disposable income (70 per cent) not of gross income. A similar calculation is made for the marginal propensity to import (i.e. 30 per cent of 70 per cent).

Such a low multiplier is likely in an open economy such as Britain’s (one actual estimate gave a value of 1.35). However, it reduces the scope for the government to influence national income because of the numerous and relatively large withdrawals.

This partly explains the reluctance on the part of UK governments to use active fiscal policy as a means of managing the economy. The low value of the multiplier reduces the effectiveness of any fiscal stimulus and the high marginal propensity to import would lead to a significant worsening of the trade balance.

**The balanced budget multiplier**

This is a special case of multiplier where the government, despite leaving government borrowing (now measured as the public sector net cash requirement and equivalent to the old PSBR), still can affect the size of national income. If the government increases both its spending and taxation by £50m, the effect will be to expand national income. This is because whereas all government income is spent, i.e. government expenditure is £50m, not all taxation results in a fall in private domestic consumption. The rise in taxation of £50m leads to some reduction in private consumption but also to falls in expenditure on imports and to falls in savings. Thus there is a net increase in domestic expenditure and, as a result, national income rises.

**Other fiscal multipliers**

The multiplier effect of budget changes varies with the type of taxation and spending which are manipulated. In a recession with large-scale unemployment, public works schemes are argued to be effective because they can be directly targeted, provide useful social capital and avoid large import withdrawals because domestic goods and services are largely bought. However, they may take time to initiate and they are difficult to stop, if circumstances change.

In contrast, raising social benefits and other transfer payments can be effective in the short run because they can be speedily activated with immediate impact. Higher state benefits have a greater multiplier effect than (say) top rate income tax reductions because the recipients of the former have higher MPCs than the latter and so the likely withdrawals are lower. Such discretionary tax and spending changes are a key feature of the Keynesian demand management style. The monetarists believe that the multiplier is very low, approaching zero. They argue that a higher budget deficit will pre-empt resources from the
private sector and displace private spending. The public sector spending ‘crowds out’ the private sector and in the long run it may be counter-productive. This happens if the public sector uses the funds in less productive ways than the private sector would have done. Furthermore, the monetarists argue that the effect of an expansionary fiscal policy will be to raise prices rather than output, through the effects on money supply.

**Exercise 3.1**

Answer the following questions based on the preceding information. You can check your answers below.

1. Name two withdrawals from the circular flow.
2. What is an injection into the circular flow?
3. When, in theory, is an economy in equilibrium?
4. What does the consumption function show?
5. What does the equation ‘\( C = a + bY \)’ mean?
6. Apart from households and firms, what else is a major consumer of goods and services?
7. Define net investment.
8. What does the accelerator theory show?
9. What does the multiplier show?
10. What is the formula for calculating the multiplier, \( K \)?

**Solutions**

1. Withdrawals from the circular flow are: savings, taxes and imports.
2. An injection into the circular flow is any additional expenditure that does not arise from the circular flow of income itself.
3. At equilibrium, injections and withdrawals are equal.
4. The consumption function shows how the level of consumption changes as the level of income changes.
5. This means that there is some consumption that is independent of the level of income (\( a \) (autonomous consumption)) and some which is a proportion of and determined by income received (\( bY \)).
6. There are two other major consumers of goods and services: the government and overseas consumers (via exports).
7. Net investment is the volume of investment in capital goods over and above that required to replace worn-out capital, i.e. depreciation.
8. The accelerator theory shows that changes in consumption expenditure may induce much larger proportional changes in investment expenditure and thereby contribute to the trade cycle.
9. The multiplier shows that an increase in expenditure (e.g. investment, government expenditure or exports) will produce a much larger increase in total income and expenditure through successive rounds of spending.
10. The multiplier can be calculated as \( K = \frac{1}{1 - MPC} \) where MPC is the marginal propensity to consume.
3.3 Inflation and unemployment

3.3.1 Causes of inflation

Inflation can be explained in various ways. The three main causes usually identified are discussed below.

**Demand-pull inflation**

This term is used when increases in aggregate demand pull up prices because supply is constant or very inelastic. Supply may have been constrained by a lack of capacity in the economy, or insufficient trained labour, or lack of capital investment.

The underlying causes of significant increases in demand may be either fiscal or monetary. If a government relaxes its fiscal stance and/or runs a large PSNCR, then total demand in the economy is stimulated. For example, a cut in income tax rates will increase spending power, thereby raising AMD, and have a multiplier effect on the economy. This will stimulate employment, but if supply is relatively inelastic not all of the extra spending will be translated into output. Some of the extra demand will lead to rising prices and an inflationary gap will be created. This is shown in Figure 3.34 towards the end of this chapter. Increases in government spending, other things being equal, have a similar effect.

Aggregate demand can also be increased by changes in monetary conditions. When extra credit is available to consumers, spending on goods and services will also increase, with the same likely effects on output and prices. The credit may be made available by the banks and other financial institutions primarily, although in the 1980s retail shops were an increasingly important source of credit. Most economists seem to agree that the resurgence of inflation in Britain in 1988–90 was the result of the consumer credit boom stoked up by the private sector. Similarly, cheaper credit encourages consumer, and to a lesser extent investment, spending with the same consequences. In contrast, deflationary conditions were widespread in the world economy during the second half of the 1990s, and thus contributed to the low rates of inflation in many countries. What is more difficult to explain is why the UK rate of inflation stayed low since 1997, despite strong growth in demand and falling unemployment.

**Cost-push inflation**

This inflation occurs when there is an increase in costs not matched by productivity, which raises prices. However, the cost rise should be exogenous (from outside the system) rather than endogenous (part of the system itself). An endogenous stimulus might be (say) higher demand, which makes it difficult for supply to keep pace, thereby causing producers to pay by wage increases to attract labour. These big wage increases might then push up costs. Supporters of cost-push explanations of inflation argue that the increased power and greater militancy of trade unions in the 1970s was a genuine cost push, because it was not related to the state of aggregate demand. This trade union power forced employers to concede high wage rises and so costs rose. The costs were then passed on in the form of higher prices because of the monopolistic power of the producers in many markets.

Conversely, the low rate of inflation in the early 1990s could be attributed to the weakness of trade unions and the very low level of pay settlements. However, critics of cost-push theory would argue that this was related to the general economic weakness and there being three million unemployed.
A second major contributor to cost-push pressure is imported raw materials. Britain’s open economy, which is dependent on such goods, makes our prices susceptible to changes in primary product prices. Oil price rises in 1972 and 1981 thus contributed to domestic inflation but the high exchange rate for sterling since 1997 reduced import prices and helped to limit inflation.

**Quantity theory of money**

Demand pull and cost push were essentially Keynesian explanations of inflation. However, monetarists reject the idea of cost-push inflation, believing that inflation is caused by increases in the money supply leading to excess demand for goods and services. In their view, changes in the money supply affect prices but not output and employment, except in the short run.

Monetarism is based on the quantity theory of money. The volume of expenditure in an economy over a period of time can be identified in two ways. It is the medium of exchange used to buy the output produced \((M)\) multiplied by its velocity of circulation \((V)\). The velocity of circulation measures the average number of times that the money is used each year. Also, the volume of expenditure is calculated by the number of transactions \((T)\) multiplied by the average price of each sale \((P)\). This can be written as \(MV = PT\). This is really a truism, showing that total spending is the same as total receipts in the economy.

Fisher modified the above identity and slightly redefined the terms to formulate the equation of exchange \(MV = PT\). This states that money supply multiplied by the velocity of circulation equals the price level multiplied by total transactions. Keynesians accept the equation of exchange but disagree with the powerful assumptions made by the monetarists. The monetarist assumptions are that:

- \(V\) is constant and/or predictable. \(V\) is not determined by money supply and it is unchanging in the short run;
- \(T\) is constant. Total output is fixed in the short run, at full employment.

Thus:

- the money supply determines prices. Causation is in this direction because the government can control the supply of money in the economy.

In contrast, Keynesians argue that \(V\) may not be constant, as people may circulate their money more often if there is a fall in the money supply. In the modern monetarist equations ‘\(T\)’ is replaced by ‘\(Y\)’, which symbolises real national income. Keynesians, who do not recognise a difference between monetary and real forces, see no reason why \(T\) or \(Y\) should be constant; for instance, being a synonym for output, it might fall irrespective of money supply changes.

However, more significantly, Keynesians dispute that money supply determines prices. They accept that an increase in money supply might lead to inflation, but they argue a different sequence of causation. Keynesians argue that the money supply adapts to changes in demand at current prices. Thus, the price level determines the money supply. Some Keynesians would also argue that a change in the velocity of circulation can change prices, irrespective of changes in the money supply.

**Transmission mechanism**

Clearly the relationship between the supply of money and prices is at the heart of the disagreement between Keynesians and monetarists. This process is known as the
transmission mechanism, and centrally involves the demand for money. Keynesians argue that this demand is elastic, as money could be held for speculative motives so that an interest rate change could be seized upon. Also, because demand is relatively elastic, an increase in money supply may not be spent and so price changes cannot be predicted. Furthermore, any expansion in money supply could increase output rather than prices if there are unemployed resources in the economy.

The monetarist view of the transmission mechanism is obviously different. They see the demand for money as stable, being mainly for transactions reasons. Thus an increase in the supply of money raises the stock of money held by individuals and organisations above the equilibrium level. The excess money is spent, and, because total output has not changed, prices are pulled up. Financial assets are no different from other goods and services in the monetarist view of things and they are not money substitutes. The demand for them is stable and related to national income, rather than to interest rate changes.

Defining and measuring the supply of money has been fraught with difficulty in practice and there is little evidence in British experience that the central bank is able to control the money supply. For example, the upsurge in British inflation in 1988–90 was probably the result of private sector borrowing induced by easy credit, particularly in the high street retail shops. Such money growth, with broad money over 15 per cent, was clearly against government intentions.

Regarding the direction of causation, there is much circumstantial evidence that the demand for money is not determined by the supply of money, as monetarists claim. It could well be that the demand for money is created exogenously as the Keynesians claim. For example, in the 1990–92 recession, demand fell as people became over-burdened with debt, which was the result of higher interest rates (in order to keep sterling stable in the Exchange Rate Mechanism) and the falling value of their wealth (which resulted from the property slump). It is very difficult to link these causes to the supply of money.

### 3.3.2 The effects of inflation

If the rate of inflation is low then the effects may be beneficial to an economy. Businesspeople are encouraged by fairly stable prices and the prospect of higher profits. However, there is some argument about whether getting inflation below 3 per cent to, say, zero, is worth the economic pain (of, say, higher unemployment). There is agreement, though, that inflation above 5 per cent is harmful – worse still if it is accelerating. The main arguments are that such inflation:

- *Distorts consumer behaviour.* People may bring forward purchases because they fear higher prices later. This can cause hoarding and so destabilise markets, creating unnecessary shortages;
- *Redistributes income.* People on fixed incomes or those lacking bargaining power will become relatively worse off, as their purchasing power falls. This is unfair.
- *Affects wage bargainers.* Trade unionists on behalf of labour may submit higher claims at times of high inflation, particularly if previously they had underestimated the future rise in prices. If employers accept such claims this may precipitate a wage–price spiral which exacerbates the inflation problem.
- *Undermines business confidence.* Wide fluctuations in inflation make it difficult for entrepreneurs to predict the economic future and accurately calculate prices and investment returns. This uncertainty handicaps planning and production.
• **Weakens Britain’s competitive position.** If Britain’s inflation exceeds her competitors’ then it makes exports less attractive (assuming unchanged exchange rates) and imports more competitive. This could mean fewer sales of British goods at home and abroad and thus a bigger trade deficit. For example, the decline of Britain’s manufacturing industry can be partly attributed to the growth of cheap imports when the UK was experiencing high inflation in 1978–83.

• **Redistributes wealth.** If the rate of interest is below the rate of inflation, then borrowers are gaining at the expense of lenders. The real value of savings is being eroded. This wealth is being redistributed from savers to borrowers and from creditors to debtors. As the government is the largest borrower, via the national debt, it gains most during inflationary times.

### 3.3.3 Causes of unemployment

In some books, the words ‘causes’ and ‘types’ are used interchangeably. However, it is useful to make the following distinction:

- **Type** is the label given to describe the main common characteristic of some unemployment.
- **Cause** is more analytical, referring to a chain of reasoning with a central theme which attempts to explain how some unemployment has arisen.

#### Types of unemployment

(a) **Seasonal** Some occupations experience large fluctuations in demand for their service during a year. For instance, agricultural labourers will be needed less in the winter months, whereas ski instructors will not be required much in the summer. Such seasonal unemployment is less of an economic problem nowadays because of changes in employment legislation, the increased use of part-time staff and improved storage and freezing facilities which enable production in many industries to be continuous. The published unemployment statistics are seasonally adjusted to reduce the impact of seasonal unemployment and school leaving dates.

(b) **Frictional (search)** There is sometimes a transition period between a worker leaving one job and starting another. Each month nearly 300,000 join the unemployment register and slightly fewer leave it. This indicates the imperfections in the labour market, such as lack of knowledge of available job opportunities, the geographical immobility of labour and the mismatch between the requirements of the employers and the available skills of the unemployed. If the unemployed are successful in searching for jobs, then unfilled vacancies will fall and frictional unemployment will decline. The relatively small and unchanging number of vacancies in the British economy indicates that there is little frictional unemployment at present.

(c) **Structural** When there are significant long-term changes in the pattern of demand and techniques of supply in an economy, then unemployment occurs in many parts of the labour market. If those becoming unemployed lack the skills to take up the job vacancies, because the industrial structure has changed, then the average duration of unemployment increases and temporary frictional unemployment becomes permanent structural unemployment.
A detrimental fall in demand for a good may cause structural unemployment (e.g. the use of plastic instead of steel has reduced the demand for steel workers permanently). The wholesale decline in British heavy industry (de-industrialisation) has created much of this type of unemployment. As some of these industries were localised in particular areas, the unemployment may be regionally concentrated. When this occurs, the term *regional unemployment* is used.

Structural unemployment may result from changes in production methods. The installation of capital equipment may cause less demand for labour which, without retraining, will remain unemployed. For instance the new technology used in printing has produced unemployment, even though the industry is expanding. This form of unemployment has been termed *technological unemployment* because the improvements in science and technology lead to workers being replaced by machines. Technological unemployment has largely been a product of manufacturing industry, with the service industries remaining largely unscathed because of the personal attention often needed. For instance, the impact of information technology on the financial services industry was to expand business by 8 per cent annually in 1975–85 and increase employment by 2 per cent annually. This indicated labour saving but not to the detriment of employment.

(d) *Cyclical* Fluctuations in economic growth create variations in demand in the economy. Assuming that the demand for goods/services and the demand for labour are positively related, a boom in the economy will probably lower unemployment while a slump will raise unemployment. These changes will probably affect most industries, and they occur in cycles. Hence the words ‘general’ and ‘cyclical’ have been used to describe the extra unemployment occurring in a slump or recession such as those of the 1930s and 1980s. Keynes used the phrase demand deficient to explain the same phenomenon because he argued that extra demand could be created by a government through deficit budgeting to make good the deficiency and thereby maintain employment levels.

The British economy is rather susceptible to cyclical unemployment because it is dependent on world trade and more open than most. Thus a decline in world trade, as occurred in 1979–80, adversely affects British exports with domestic unemployment repercussions. The rapid increase in British unemployment in the 1980s was partly the result of a world trade slump following the 1979 oil price hike. However the rise in the exchange rate for sterling which led to falling exports, rising imports, and government attempts to reduce public spending also contributed to the fall in aggregate demand.

(e) *Voluntary* This is a relatively new type of unemployment which has been defined following the work of the monetarist school of economics. It is said to occur when people are unwilling to work at existing wage rates. Some argue that relatively high levels of income support deter the unemployed from seeking jobs because the gain in income may be marginal. In contrast, workers are involuntarily unemployed when they would be willing to accept a job but there are no vacancies for what they can do.

**Causes of unemployment**

(a) *Demand deficiency* Lack of demand for goods and services causes workers to be laid off. Usually unemployment follows a fall in economic activity, with a lag of 12–18 months. The demand in Britain’s case is both national and international. The oil price crisis in 1973–74 helped start the world recession because funds were transferred to the oil producers, but this finance did not find its way back to the developed economies in the
form of increased demand for their exports. Thus trade declined, spending fell and redundancies increased – a negative multiplier effect.

Also the oil price hike caused inflation in many industries reliant upon oil. These pressures caused balance of payments difficulties in the West and strict monetary policies were used to deflate and protect exchange rates. Such policies intensified the recession. A similar chain of events happened following the 1978–79 oil price increase. Some economists believe that in a recession it is a government’s responsibility to increase spending, thereby making good any general demand deficiency. Empirical research by Layard and Nickel indicated that demand factors alone accounted for over 70 per cent of the increase in unemployment in Britain in 1975–83. This implies that government policies could have been tailored to keep unemployment down without accelerating inflation. The government’s strict monetary policy and tight fiscal stance between 1979 and 1987 were focused on the priority of inflation to the neglect of unemployment. Monetarists claim that the relaxation of monetary policy, in particular from 1987, led to the halving of unemployment between 1988 and 1990. Conversely, higher interest rates and an overvalued exchange rate were primary factors in the recession of 1990–93.

(b) Supply-side factors

These include the activities of trade unions and the level of import prices.

(i) Trade unions. It is argued that strong trade unions can cause unemployment in two ways:

- By pushing for and obtaining wage rises for their members, they may reduce the willingness of their employers to replace people who leave and/or to take on new recruits. The analysis of this argument is undertaken in the next chapter. Conservative politicians claim that workers are being ‘priced out of jobs’ by the high wage demands made by trade union leaders.
- By resisting improvements in efficiency, trade unions have contributed to rising costs and prices which produce lower sales and less employment. The maintenance of established working practices, rigid demarcation and closed shops have been cited as barriers put up by trade unions to protect the short-term interests of their members. These barriers create imperfections in the labour market and are claimed to be detrimental to employment in the long run. The opposition to new technology may be short-sighted, if the experience of the financial service industry is typical.

A lot of these barriers have now been removed. Furthermore, the advent of short-term contract labour (now 10 per cent of the labour force) has further weakened trade union influence. The 1990s also saw a ‘new realism’ among trade union leaders, who put jobs before pay.

(ii) Import prices. In the open British economy, firms are vulnerable to changes in raw material prices and exchange rates. In the period 1967–79 import price increases, prompted by the oil crisis, accounted for over one-third of the increase in unemployment. Higher input prices raise the costs of production and final prices, thereby undermining competitiveness and losing customers. This, in turn, will reduce the demand for labour. A similar effect occurs when the exchange rate depreciates dramatically (Britain 1985), raising the price of imports. In contrast, an overvalued
currency, such as sterling in 1981, makes the export price of final goods too high and reduces demand for them, thereby causing redundancies.

One particular import has been identified as a major cause of unemployment – oil (Figure 3.8).

The argument is that higher oil prices raised production costs and led producers to reduce real wages and labour costs in order to increase productivity and maintain profits. The means of this adjustment was through higher unemployment. There is significant evidence for this analysis from the British and Canadian economies 1961–91.

(c) State benefits In the view of some economic theorists, high benefits encourage voluntary unemployment. It has been suggested that lower levels of income support would reduce the ‘unemployment trap’ where some people are ‘better off’ being unemployed than in low-paid jobs. Income support has fallen in real terms during the 1980s and this has probably reduced its impact on unemployment. However, unemployment benefit provides a reference floor for any fall in real wages and discourages some measure of ‘effort’. Professor Minford has argued that such benefits and wage council minima prevent the labour market working flexibly. If this happened, as wages fell the demand for labour would increase and so unemployment would be reduced.

(d) Real interest rates This is the actual interest rate less inflation. If real interest rates rise, the costs of production are increased and British experience suggests that in order to maintain profits, adjustment is made in the labour market, via more unemployment. This unemployment is in addition to the effect of higher interest rates on demand, which will be depressive.

3.3.4 The effects of unemployment

There are economic, social, financial and political costs of unemployment.

Unemployment means that economic resources are not being utilised. Thus, the opportunity cost of unemployment is the goods and services not produced. This means that output is not maximised and economic growth is slowed. Unemployed labour deteriorates
through non-use and this undermines the training and previous investment made in people. The quality of the workforce is likely to diminish if large parts of it are out of work for long periods.

There is a direct financial cost to the state. The government loses about £9,000 per year per unemployed person. The unemployed do not pay income tax and spend less than normal, thereby lowering VAT payments, and these losses reduce government income. In contrast, the unemployed qualify for a whole range of state benefits, thus raising public expenditure. It is likely that there are also additional indirect financial costs to the government, such as extra administration spending to process claims, handle tax rebates, check frauds, etc.

There are significant social costs associated with unemployment. The mental and physical health of the unemployed tends to deteriorate. For instance, the male unemployed are twice as likely as the male employed to commit suicide. In addition, the unemployed are more likely to die through cancer and fatal accidents. There is a clear link between rising unemployment and rising crime, while the inner city riots of 1982 in Toxteth and Brixton and 1985 in Handsworth were not uncorrelated with unemployment levels. All these social consequences produce costs which society bears through higher spending on health, police, law and order and training schemes.

### 3.3.5 The relationship between inflation and unemployment

It is generally believed that unemployment and inflation are linked. Phillips correlated changes in UK money wages and the level of unemployment. The relationships suggested that when unemployment was 2.5 per cent, money wages would be non-inflationary. As wages accounted for 70 per cent of production costs and it was assumed that cost-plus pricing was adopted, it was concluded that prices and unemployment were also correlated. If an economy was run at a 2.5 per cent level of unemployment, it was suggested that the general price level would be stabilised. Furthermore, at 5.5 per cent unemployment, money wages would not rise and there would be no inflation. For this reason some diagrams of the Phillips curve plot unemployment against prices (Figure 3.9).

![Figure 3.9 Phillips curve](image)
Thus the Phillips curve seemed to show a stable relationship between inflation and unemployment. This means that

- the lower the rate of unemployment, the higher the rate of inflation
- the higher the rate of unemployment, the lower the rate of inflation
- there was a trade off between employment and price stability; governments could not simultaneously achieve price stability and full employment

The Phillips curve was neutral between the cost-push and demand-pull theories of inflation and between the Keynesian and monetarist schools of thought. It only showed a link between wage inflation and unemployment levels and did not specify causation. Many made inferences from the statistical evidence that price and unemployment, which is not the same relationship, were inversely correlated, assuming that prices were determined by wages.

The demand-pull theorists interpreted low unemployment as an indication of excess demand which served to ‘pull’ up wages in the labour market. In contrast, the proponents of cost push saw a low level of unemployment as a measure of trade union strength, enabling them to ‘push’ up wages when employers were vulnerable because wage costs could be passed on as higher prices in the buoyant economy.

For a government, the Phillips curve seems to offer the option of lower unemployment and higher inflation or higher unemployment and lower inflation. This gave policy-makers a choice, but still meant that one major economic objective could not be fulfilled. Price stability and full employment were mutually exclusive.

### 3.3.6 Keynesian demand management

Keynes emphasised the importance of aggregate demand in the economy and advocated management of the level in order to achieve major economic objectives. Aggregate demand was the total expenditure on goods and services in the circular flow of income. In the Keynesian cross diagram (Figure 3.10) AMD slopes upward because of consumption’s dependence on income, while investment \((I)\) and government spending \((G)\) are assumed to be exogenous.

In Figure 3.10, equilibrium is achieved for each level of AMD at only one point where the AMD curve intercepts the 45° line which represents aggregate supply, e.g. AMD\(_1\) at

**Figure 3.10** Unemployment and inflation
This equilibrium is not necessarily compatible with price stability and full employment. For instance, if FE represents the level of national income/output at which the labour force is fully employed, then $Y_1$ output is obtained with some unemployment. In this situation, Keynesians would advocate raising the $G$ component of AMD by running a budget deficit. Such a fiscal policy would increase AMD$_1$ to AMD$_2$, thereby restoring full employment, at a new equilibrium position.

However, if the fiscal boost was too great, inflation might be created. If AMD rose to AMD$_3$, it would exceed AS at the maximum level of output (the full employment level of FE). The excess demand would create the classic case of ‘too much money chasing too few goods’. This would be demand-pull inflation and in the Keynesian theory it is illustrated by the inflationary gap between AMD$_3$ and AS at FE. Deflation would be required to close the gap and restore equilibrium at FE. This gives rise to the idea that governments should attempt to predict changes in the economy and, by using fiscal and monetary devices, to ensure the smooth growth of national income. In the short term, this might mean contracting and expanding demand (i.e. counter-cyclical budgeting) so that new equilibrium positions are reached at progressively higher rates of output.

Unfortunately, such a discretionary policy became labelled stop-go. It was destabilising and seen as an explanation of Britain’s relatively poor growth rate. Discretionary demand management required detailed up-to-date knowledge, a clear understanding of complex economic relationships and excellent timing so that lag problems did not arise. Several assumptions in the model, particularly regarding saving and investment, were queried and the government’s ability in an open economy to deal with exogenous international factors was obviously limited. All these factors undermined the virtues of Keynesian demand management. Furthermore, the existence of inflation at times when full employment had not been reached led to modifications of the demand management approach.

**Aggregate supply**

The shape and position of the aggregate supply curve in Figure 3.10 have been significantly modified, as newer models have been developed. The model illustrated in Figure 3.11 has three significant differences from the Keynesian cross diagram.

First, national income (output) is plotted against prices. Second, aggregate monetary demand is downward sloping, showing its inverse relationship with prices. Third, the

![Figure 3.11 Modified macro-model](image-url)
aggregate supply curve is no longer consistently at 45° and becomes very inelastic as the full employment level of national income is approached (because less efficient factors of production are brought into use and bottlenecks occur). This model facilitates the existence of inflation and unemployment.

When aggregate demand exceeds aggregate supply, the general price level rises. However, when the economy is producing at less than full capacity, unemployed resources are utilised and output expands, with little impact on the general price level. In Figure 3.11 the expansion of output from $Y_1$ to $Y_2$ creates only a small price increase $P_1 - P_2$. As the economy nears full employment the increased demand cannot be as easily, or quickly, met, and so some of the increased demand is dissipated in the form of higher prices. The expansion of output from $Y_3$ to $Y_4$ is achievable, but at the expense of much higher inflation $P_3 - P_4$. Although the costs of production may have risen, as factors become scarce and unemployed resources are sought, the resultant inflation is still of the demand-pull variety. This is because the higher costs are caused by the excess demand and thus determined endogenously (i.e. within the system).

However, cost-push inflation can also be incorporated into this model. When higher prices occur because of an exogenous factor (i.e. from outside) such as expensive imported raw materials, rather than an endogenous factor, the aggregate supply curve will shift to the left. This new AS curve would lead to a fall in output and a rise in the price level.

In these circumstances, with unchanging aggregate demand, a new equilibrium will be achieved at a lower output with more unemployment and higher inflation.

**Supply-side policies**

Monetarists claim that by introducing supply-side policies, AS can be increased (AS$_2$ in Figure 3.12). The impact of this would be that output is increased from $Y_2$ to $Y_3$ and inflation is lowered from $P_1$ to $P_3$. This would mean there is not necessarily a trade-off between inflation and unemployment.

In general, supply-side policies aim to remove *market imperfections* and encourage economic *individualism* in order to increase efficiency and raise competitiveness. They are *micro* in orientation, unlike Keynesian policies, which tend to be *macro*.

Some of the best known supply-side policies are:

- lower income taxes;
- privatisation;

![Figure 3.12 Aggregate supply changes](image-url)
The shape of aggregate supply

Keynesians and monetarists disagree over the shape of the aggregate supply curve in the long run. Keynesians would draw an inverted L-shaped aggregate supply curve (Figure 3.13). This means that an expansion in aggregate demand will lead to an increase in output and employment \((Y_1-Y_2)\), rather than prices, until full employment level. At full employment \(Y_3\) the increase in demand to AD3 leads to higher prices \(P_2\).

In contrast, monetarists define aggregate supply as vertical (Figure 3.14). Thus any increase in aggregate demand (AD1) leads to higher prices \(P_1\), rather than less unemployment. This means, in their view, that the solution to the problems of inflation and unemployment is to move aggregate supply to the right (AS1). The effect, as shown in Figure 3.14, is to create lower inflation and less unemployment (i.e. \(P \rightarrow P_2\), \(Y \rightarrow Y_1\)).
3.3.7 Development of the Phillips curve model

By the time the Phillips curve had become established, 1970, the inverse relationship between unemployment and inflation began to break down. Monetarists were not surprised, as they had argued that the trade-off was at best temporary. As unemployment grew at higher rates of inflation (stagflation), Keynesian demand management was discredited. However, in the 1980s, the trade-off reappeared but at a higher absolute level.

Several explanations have been put forward to explain why the trade-off relationship ended:

- **Structural unemployment.** One argument was that the level of unemployment was no longer a good indicator of pressure of demand in the labour market. The growth of structural and voluntary unemployment meant that there could be high pressure of demand for labour even if the unemployment figures suggested otherwise. This would mean a higher level of unemployment for each level of inflation.

- **Increased trade union power.** This would suggest that trade unions were able to secure higher wage increases at any given level of unemployment, thus generating higher inflation. This increased power might have been the result of increased membership in the 1970s and a belief that governments would accept the higher rate of inflation rather than see unemployment rise.

- **Cost pressures.** External cost rises such as that resulting from the oil price rises in the early and late 1970s would cause a higher rate of inflation at every level of unemployment. Administered prices in uncompetitive markets would contribute to this process.

Both of these arguments would suggest that the Phillips curve had moved outwards to the right as shown in Figure 3.15. Thus the employment/inflation trade-off still existed but that the inflation price of full employment had greatly risen.

The process illustrating these effects is shown in Figure 3.15. Initially the economy has $u$ unemployment and $P$ inflation. Cost-push pressures shift PC to PC1. If the government maintains aggregate demand, prices rise to $P_1$ and unemployment increases to $u_1$. However, if the government decides to stimulate demand in order to maintain unemployment at $u$, this will create demand-pull inflation, raising the general price level to $P_2$. This illustrates the famous ‘wage-price’ spiral whereby cost-push and demand-pull inflation act together. The periods 1972–74 and 1977–80 in the British economy perhaps

![Figure 3.15](image)

**Figure 3.15** A shift of the Phillips curve
illustrate that. Cost-push theorists propose incomes policy as a means of controlling inflation. In contrast, the less likely policy option of a price freeze would create increased unemployment at $u_2$ in Figure 3.15.

By the late 1990s unemployment in the UK was falling and it has continued to do so every year since 2002. Inflation, however, remained low and in most years was below the target level of 2.5 per cent set for the Bank of England by the government. This might suggest that the Phillips curve had shifted back towards its original position, thus making falling unemployment and falling inflation possible. This outcome may have been the result of:

- declining trade union power and militancy;
- lower import prices resulting from lower commodity prices (including oil) and the strength of sterling;
- the longer term effect of supply side policies in getting people back into work without the need for large fiscal boosts to the level of aggregate monetary demand.

However, alternative explanations have centred on the argument that the long-term Phillips curve is vertical, and that this is the result of the role of expectations in the wage setting process.

**The role of expectations**

Several theories which have been developed to modify the Phillips curve analysis incorporate price and/or wage expectations into the inflationary process. They all demonstrate that the negative relationship between inflation and unemployment is not permanent and that the long-run Phillips curve is vertical. Thus, there are no trade-offs. Essentially the expectations distort the economic process, by influencing the behaviour of its economic agents. These expectations concern actual and expected inflation rates. In the expectations-augmented Phillips curve (see below), the expectations tend to be based on past experience and not necessarily rational.

These theories also include the concept of a natural rate of unemployment. This is that rate of unemployment where the labour market is in equilibrium, that is the demand for labour and the supply of labour are equal. There can still be unemployment at this rate since there could be frictional, structural or voluntary unemployment.

The most common theory featuring expectations and the natural rate of unemployment is the expectations-augmented Phillips curve. This was devised by Friedman to show that the effect of expectations was a long period of unemployment above the natural rate. Also, this would be the cost of irresponsible government intervention in the market which attempted to keep unemployment unnaturally low, by such means as Keynesian demand management policies.

Figure 3.16 explains the process. In this diagram each of the PE curves shows a differing expectation of inflation by workers. They are short-run Phillips curves. PC is the long-run Phillips curve. If the government attempts to reduce unemployment below the natural rate to $u_1$, when there is no inflation (PE$_0$), the increase in general demand needed will create excess demand in the labour market, causing 5 per cent wage inflation. It is assumed that wage inflation becomes price inflation of 5 per cent. This eventually changes price expectations from no inflation (PE$_0$) to 5 per cent inflation (PE$_5$) and shifts the Phillips curve to the right. This means that wage and price inflation are now higher at any given rate of unemployment. For instance, the natural rate of unemployment, $u$, can only be obtained at 5 per cent inflation now because of the
expectations aroused. Unemployment will rise from $u_1$ to $u$ when expectations rise to 5 per cent because some of the employed will quit their jobs, realising that their real wage has not risen, while employers’ demand will fall. However, if the government persists in keeping $u_1$ unemployment, inflationary expectations will accelerate along the $PE_5$ curve.

This process occurs because of the *money illusion*. Wage bargainers perceive that a 5 per cent increase in money wages is a real wage increase because they assume no inflation. Once they realise that actual inflation is above expected inflation, 5 per cent inflation has eroded away their money wage increase and the workers seek real wage rises. In doing so, they adjust their expectations of future inflation upward and bargain for even higher money wages (moving up $PE_5$). In the next pay round this could result in 10 per cent wage inflation, if the government behaves so as to keep unemployment at $u_1$. However, it could be even worse if wage bargainers realise that they underestimated inflation before (expecting 0 per cent but getting 5 per cent) and adjust their demands to compensate (i.e. seeking 15 per cent when expecting 10 per cent in order to get a real wage increase). Such behaviour would lead to hyperinflation in this model, as inflation would accelerate.

What choices does this leave for government policy?

- It may attempt to keep unemployment below the natural rate by the use of expansionary fiscal policy, but the cost of this will be that the rate of inflation will accelerate. This is clearly not sustainable in the long run.
- It may attempt to keep unemployment at or close to the natural rate. The rate of inflation will not rise but neither will it fall. If the initial rate of inflation is high, this may not be acceptable.
- It may deflate the economy and push unemployment above the natural rate; the result of this is that the rate of inflation will decline. However this may involve a painful bout of deflation with high unemployment and slow economic growth.

The expectations-augmented Phillips curve indicates that substantial and painful deflation may be necessary to shake inflation out of the system. It is also the penalty when governments unwisely create excess demand. In this model the expectations are generally based on past experience.
Where does this leave government policy? The concept of the vertical Phillips curve appears to have removed much of the choice governments used to believe that they had over the balance between inflation and unemployment. No government could accept a situation in which the rate of inflation was continually accelerating since this would ultimately lead to hyper-inflation. At the very least governments would have to accept a level of unemployment equal to the natural rate of unemployment since at this level the rate of inflation would at least be stable. Thus in policy terms, the natural rate of unemployment was also the non-accelerating inflation rate of unemployment or NAIRU.

### 3.3.8 NAIRU

The non-accelerating inflation rate of unemployment (NAIRU) has evolved from the expectations-augmented Phillips curve. NAIRU is that level of unemployment where there is no tendency for inflation to accelerate or decelerate; the rate of inflation will stabilise. NAIRU is effectively the natural rate of unemployment; in Figure 3.16 NAIRU would be at \( u \). This rate of unemployment may change over time and may give a clue as to why UK unemployment rose in the 1980s and then fell again from the mid-1990s.

There is much evidence to suggest that the natural rate of unemployment/NAIRU rose in most countries during the 1970s and 1980s. This appeared to be especially marked in the UK where it rose from 4.0 per cent in the period 1971–75 to 9.2 per cent in 1981–86. Among the reasons suggested for this are:

- increased structural unemployment where unemployed workers are effectively removed from the labour market;
- increased frictional and voluntary unemployment;
- the emergence of serious supply side problems, with many workers effectively excluded from the labour market because of poor education and skills, low occupational and geographical mobility and discouragement among the long-term unemployed.

The result of this was that high levels of unemployment were inevitable as governments attempted to reduce rates of inflation. In terms of Figure 3.16, the natural rate of unemployment had risen (\( u \) had moved to the right) and governments had to accept unemployment above this level as the price of slowing inflation.

However, from the early 1990s the UK experienced both falling unemployment and falling inflation. In terms of NAIRU, it appeared that the natural rate of unemployment was now falling and thus lower rates of inflation were becoming compatible with lower levels of unemployment. This fall in the natural rate is ascribed to such factors as:

- generally weaker wage pressure in labour markets as trade union membership and power declined;
- the effects of supply side policies in improving the operation of the labour market, especially reductions in entitlement to unemployment payments;
- reductions in structural unemployment as the effects of the decline of old manufacturing industries faded away;
- improvements in the education and skills of the labour force;
- the development of more flexible working arrangements, especially the growth of part-time employment.
Exercise 3.2

Answer the following questions based on the preceding information. You can check your answers below.

1. What could be the underlying causes of demand-pull inflation?
2. In cost-push inflation, cost rises are ‘exogenous’. What does that mean?
3. What is the quantity theory of money?
4. Suggest four effects of inflation.
5. List three important types of unemployment.
6. Specify three costs of unemployment.
7. What does the Phillips curve show?
8. How did Keynesians attempt to reduce unemployment?
9. What is NAIRU?
10. In ‘new’ macroeconomic models, what effect will an increase in aggregate supply have on prices and unemployment?

Solutions

1. The principal cause is aggregate monetary demand exceeding the supply of goods and services at current prices. This could result from increases in injections into the circular flow when the economy is at or near full employment.
2. Exogenous cost rises are those that occur from outside of the economic system and are not the result of excessive aggregate demand. These could include increases in import prices or wage increases due to trade union pressure rather than the demand for labour.
3. The quantity theory of money claims that there is a stable link between the stock of money in the economy and the level of prices; if the money stock (supply) increases, this will raise the price level at some future date.
4. Inflation may: reduce the international competitiveness of the trade sector of an economy; shift wealth from the holders of financial assets to the holders of debts; discourage savings as the value of savings decreases; distort consumer expenditure as consumers attempt to anticipate price changes.
5. The main types of unemployment are: structural, frictional, cyclical, seasonal and voluntary.
6. The costs of unemployment include the loss of output, the loss of tax income to the government, the loss of income to the unemployed, and damage to the unemployed’s skills and health.
7. The Phillips curve shows the relationship between the level of unemployment and the rate of inflation.
8. Keynesians believe that unemployment is the result of demand deficiency, and advocate the use of the government budget to increase aggregate demand by raising public expenditure and reducing taxation.
9. NAIRU is the non-accelerating inflation rate of unemployment – the rate of unemployment at which the current rate of inflation will have no tendency to change.
10. An increase in aggregate supply will reduce the price level and reduce the level of unemployment.
3.4 The monetary environment

3.4.1 Inflation measurement

Between 1970 and the mid-1990s, inflation became a major economic problem in Britain with the rise in the price level being over 5 per cent a year for much of the period. Figure 3.17 shows that inflation has only fallen to low levels in the past ten years. Inflation is defined simply as ‘rising prices’ and shows the cost of living in general terms. It is measured by the retail prices index (RPI).

Retail prices index

This measures the change from month to month in the average level of the prices of goods and services purchased by most households in the UK. A large and representative selection of 600 goods and services (covering 150,000 separate price quotations) sold in 180 towns is used to compile the index. The index is weighted to reflect the expenditure patterns of people. The weights are revised each year, based on the Family Expenditure Survey. The 1998 weights are shown in Table 3.5. These weights are much broader than in the past, as previously there used to be eleven categories. However, the expenditure of certain higher-income households and retired people dependent mainly on social security benefits are excluded in order to make the RPI typical.

All indices have a base year, which is re-referenced when the index has moved a long way from 100. The RPI was reset at 100 in January 1987.

Calculating a firm figure for inflation is far from simple, even with a complicated index, with a 1,000 weighting total. Table 3.6 shows the annual average RPI value. This can give an idea of the trend. However, usually monthly changes in inflation are given. They are

Figure 3.17 Retail prices index, 1987–2001
Source: Annual Abstract of Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td></td>
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<tr>
<td>1995</td>
<td></td>
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<tr>
<td>1997</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.5 1998 RPI weights

<table>
<thead>
<tr>
<th>Category</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and catering</td>
<td>178</td>
</tr>
<tr>
<td>Alcohol and tobacco</td>
<td>105</td>
</tr>
<tr>
<td>Housing and household expenditure</td>
<td>359</td>
</tr>
<tr>
<td>Personal expenditure</td>
<td>95</td>
</tr>
<tr>
<td>Travel and leisure</td>
<td>263</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,000</td>
</tr>
</tbody>
</table>
based on a year-on-year calculation, which is a rolling measure. For example, each monthly calculation covers the previous twelve months.

So in Table 3.7 at the end of December 1997, RPI had grown by 5.6 per cent. If inflation for January 1998 was −0.5 per cent then −0.5 would be added to the total and the January 1997 figure (zero) subtracted, giving a new RPI of 5.1 per cent. There is a problem with this because, although the monthly rate of inflation has fallen from 0.4 per cent (December 1997) to −0.5 per cent (January 1998), the yearly calculation shows a smaller change to 5.1 per cent.

Until late in 2003 the RPI was used as the main measure of inflation in the UK. A problem with this measure was its inclusion of housing costs in the form of mortgage interest payments. Thus when governments raised interest rates to reduce inflationary pressure, paradoxically the RPI rose and indicated rising, not falling inflation. Thus the government and the Bank of England also used a measure of inflation, the RPIX, which excluded mortgage payments. The government also used a Tax and Prices Index (TPI) which took account of tax changes and thus measured the change in gross income needed for taxpayers to maintain their purchasing power allowing for both tax changes and changes in retail prices. From 2004 the Bank of England has used a new measure of inflation, the Harmonised Index of Consumer Prices. This excludes mortgage payments and is consistent with the measure of inflation used in the rest of the EU.

<table>
<thead>
<tr>
<th>Table 3.6</th>
<th>4th Quarter RPI index (Jan 1987 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>158.0</td>
</tr>
<tr>
<td>1998</td>
<td>162.0</td>
</tr>
<tr>
<td>1999</td>
<td>166.8</td>
</tr>
<tr>
<td>2000</td>
<td>172.0</td>
</tr>
<tr>
<td>2001</td>
<td>173.8</td>
</tr>
<tr>
<td>2002</td>
<td>178.2</td>
</tr>
<tr>
<td>2003</td>
<td>181.8</td>
</tr>
</tbody>
</table>

*Source: Economic Trends*

<table>
<thead>
<tr>
<th>Table 3.7</th>
<th>Example of rolling calculation of inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>0.0</td>
</tr>
<tr>
<td>February</td>
<td>0.6</td>
</tr>
<tr>
<td>March</td>
<td>0.4</td>
</tr>
<tr>
<td>April</td>
<td>0.9</td>
</tr>
<tr>
<td>May</td>
<td>0.6</td>
</tr>
<tr>
<td>June</td>
<td>0.6</td>
</tr>
<tr>
<td>July</td>
<td>0.0</td>
</tr>
<tr>
<td>August</td>
<td>1.0</td>
</tr>
<tr>
<td>September</td>
<td>0.8</td>
</tr>
<tr>
<td>October</td>
<td>0.2</td>
</tr>
<tr>
<td>November</td>
<td>0.1</td>
</tr>
<tr>
<td>December</td>
<td>0.4</td>
</tr>
<tr>
<td>1998</td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>−0.5</td>
</tr>
</tbody>
</table>
3.4.2 The qualities of money

Early forms of money, such as valuable commodities, e.g. cowrie shells, had intrinsic value and were thus acceptable as money. However, as trade expanded, goods such as salt and cattle were less useful as money because they were not uniform in quality, not easily divisible and not durable. In addition, for large transactions they were not portable. These deficiencies led to the development of precious metals, in particular gold, which had these necessary characteristics, as money. Gold had the added advantage of being desirable because of its scarcity. This kept its value stable.

Given the vulnerability of gold to theft, people began to deposit gold with goldsmiths. These goldsmiths and early banks began to issue receipts (or notes) to those who gold they stored and these became the earliest form of paper money. Thus modern paper money emerged, although still based directly on holdings of gold.

In 1844 the Bank Charter Act regularised the issue of notes. This happened after a series of financial crises caused by imprudent bank lending. Joint stock banks, the successors of the goldsmiths, were no longer allowed to issue new notes and the Bank of England was given the sole responsibility. Thus today we have token money. A small proportion of this is legal tender (coins and notes) which must be accepted by law, even though there is not sufficient gold backing. Bank deposit money comprises 90 per cent of our money and contains the notional sums in people’s deposit and current accounts, upon which claims for payment can be made. It is accepted as money because of our faith in the monetary system and because of the benefits of using bank deposits as our principal form of money.

3.4.3 The functions of money

Modern economies are totally dependent upon money in its many various forms. Money facilitates trading, both domestically and internationally, and overcomes the weaknesses of barter, which limited primitive societies. Money is ‘anything that is acceptable to its users in an economic system’, as it enables them to value the goods and services which are produced.

The different forms of money – gold, notes, coin, cheques, postal orders, credit cards – that are used today confirm the oft-made remark that ‘money is what money does’. Thus as long as something is acceptable and enables the performance of certain functions, it can be regarded as money.

There are three main functions of money:

- **A medium of exchange.** The existence of money means that buyers and sellers can meet and trade, without the problems associated with barter. Without money, trade was limited because some goods were indivisible, a rate of exchange might be disputed and the wants and needs of the buyer needed to match identically with the needs and wants of the seller. With money, small quantities can be purchased, prices are largely fixed at the point of sale and buyers and sellers do not need to reciprocate. International trade requires the exchange of national currencies;

- **A store of value.** When people receive money they may not spend it all on consumption. Thus money needs to be capable of storage until required for consumption while simultaneously maintaining its value during the saving period. If there is inflation, the value of savings held in money form or denominated in money terms will lose value; money will not be performing this function very well and the desire to save may be
reduced. This could produce higher interest rates to induce saving and/or fewer funds available for investment;

- A unit of account. In this role money allows goods to be compared in a common denomination which people understand – namely money. The prices of goods and services reflect their scarcity values and costs of production and enable consumers to make rational judgments. Thus money enables people to establish values. This may be particularly useful when goods are bought on credit. Money thus also acts as a standard for deferred payments and encourages trade which might not otherwise take place.

The issue of ‘what is money?’ has led to much discussion among economists and various definitions and measures of money in the British economy. If something performs the above functions and is acceptable to people it will be used as ‘money’.

Today both bank and building society accounts which give customers (fairly) immediate access to their money are included in the total of money in the economy. These accounts give their holders liquidity, a vital characteristic of money. They also perform the storage function.

However, credit cards which are treated as ‘money’ by their users and enable customers to buy goods are really only money substitutes. This is because they do not perform the storage function. The current measure of money in the UK is M4 and this includes building society deposits, although for many years they were classified only as ‘near money’ since they lacked full liquidity.

### 3.4.4 The supply of money

Until the emergence of monetarism in the 1970s, governments were not very concerned with measuring the total amount of money in an economy. Monetarist economists wished to control the supply of money in an economy as part of their general economic management, with the objective of restricting inflation. They sought to establish targets of acceptable monetary growth and this approach required the official measurement of money.

**Monetary aggregates**

The monetary aggregates are the different measures of money in the UK economy. There are narrow measures and broad measures. In Table 3.8, M0, NIBM1 and M2 are the narrow measures. They concentrate on different measures of the medium of exchange function and high-powered money. The old M1 was wider than the more recent NIBM1 because it contained interest-bearing private sector sight (i.e. current) accounts. However, because interest rate changes induced shifts of money from current to deposit accounts,

**Table 3.8 Monetary aggregates 1997 and March 1998, £bn**

<table>
<thead>
<tr>
<th></th>
<th>1997</th>
<th>1998</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Narrow</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes and coins in circulation (M0)</td>
<td>22.4</td>
<td>23.3</td>
</tr>
<tr>
<td>Private-sector sterling non-interest</td>
<td>38.9</td>
<td>38.4</td>
</tr>
<tr>
<td>Bearing sight deposits (NIBM1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes and coins + retail deposits of banks and building societies + national savings (M2)</td>
<td>484.8</td>
<td>515.8</td>
</tr>
<tr>
<td><strong>Broad</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes and coins + all private-sector sterling deposits in banks and building societies (M4)</td>
<td>722.2</td>
<td>781.9</td>
</tr>
</tbody>
</table>
this measure was very volatile and unsuitable to be used officially. Thus when a narrow measure was officially adopted in 1982, it excluded current account deposits. This measurement, called M0, contained the monetary sector’s cash assets, i.e. notes, coin and balances at the Bank of England. M0 was used because there was some evidence (1979–81) that changes in M0 preceded (and were linked to) changes in money GDP (i.e. GDP at current prices). Thus M0 was a ‘leading’ indicator of possible inflation. However, the behaviour of M0 up to 1986 led to it being downgraded. This was because M0 lagged rather than led money GDP, as people adjusted their holdings of notes and coins to new levels of income and expenditure (i.e. money GDP).

For a long time the main broad measure of money used in the British economy was sterling M3. It is composed of coins, notes, private-sector current accounts (like M1) and private-sector deposit accounts. Its value usually is more than double M1’s value. The choice of this measure resulted from its fairly close link with the rate of inflation in the past, although there was an 18 months lag in the relationship. However, in 1987, M3 was dropped as a measure because it continually missed its target, for example, 1985–86 target 5–9 per cent, actual 14.8 per cent.

It was abolished in 1989 when the Abbey National Building Society was converted to a ‘bank’. M3 was replaced as the main measure of broad money by M4. In 1992 Chancellor Lamont said that M4 ‘contains important information on monetary conditions’ but ‘experience indicates that the relationship between these aggregates and . . . future inflation is not close enough to justify establishing M4 as a formal target’.

**Money supply targets**

Monetarist economists believe that such targets are useful. However, the failure of the monetary authorities to hit the targets in the 1980s and their frequent changing of key targets led to much scepticism.

Charles Goodhart devised Goodhart’s Law, which stated that once a target measure is officially chosen for control it immediately becomes distorted, as the banking sector seeks to circumvent it. Such difficulties with individual targets led Chancellor Lamont in 1992 to propose Divisia indices. These would be weighted indices of the average value of the transactions components of the various monetary aggregates. He also decided not to make public the target ranges for the main economic indicators.

The theoretical argument is that a money supply target indicates likely future inflation and thus sets expectations which influence economic behaviour. If people behave rationally then they take future inflation into account during economic decision-making. For example, wage negotiators, knowing that money supply growth will be controlled, and that this means lower inflation, make lower wage claims than earlier. This then limits the wage-price spiral element in inflation. However, in practice trade unions (and businessmen) tend to be more concerned with nominal rather than real changes in wages and prices (and interest rates!) and thus they behave irrationally.

### 3.4.5 The demand for money

Three general motives have been suggested as to why people seek money:

(a) **Transactions.** As money is a medium of exchange, giving liquidity, and people need to buy goods and services, clearly they require money for this purpose. Such money is usually held in cash and current accounts.
The demand for money for transactions purposes will be largely affected by the following.

- The level of real income. As living standards rise expenditure rises and hence the demand for money to finance those transactions will increase. Thus the supply of money needs to be increased over time to match this rise in expenditure.
- The rate of inflation. In periods of inflation the demand for money for transactions purposes will increase, not because there is an increase in the real volume of expenditure, but because the total monetary value of those transactions has risen due to the rise in prices.
- The frequency of wage and salary payments. People paid monthly will probably have a higher average current account balance than those paid weekly.

(b) **Precautions.** As money acts as a store of value, people wish to keep it in order to meet unforeseen personal and financial contingencies. Such money tends to be held by individuals in bank and building society deposit accounts which are fairly accessible in an emergency. However, the expansion of private insurance, the wider provision of state benefits and the ease of transfer between deposit and current accounts have meant that people commit less income to saving for this purpose. It is unlikely that small increases in income affect the level of precautionary demand for money, although generally those on higher incomes tend to have higher savings balances. However, there is a clear link between precautionary savings and inflation. At times of rapid inflation, people tend to save more so as to maintain the real value of their money balances in case of emergency.

Interestingly, in 1992–93 the increase in savings prolonged the recession. Consumers lacked confidence in the economy and feared unemployment, so deferred spending and limited their demand for money.

(c) **Speculation.** As money gives immediate liquidity, some people wish to hold money in order to speculate with it. An individual may hold cash ready to undertake potentially profitable risks, varying from betting to the purchase of assets. The amount of money held for speculation is largely dependent on individual income levels. However, the main money speculators are financial institutions, rather than individuals. In 1990 over half of total M4 money was used for speculative purposes. Potential speculators are interested in the real rate of interest from asset buying. Thus their calculations take into account inflation. As a simple general rule, it is probably reasonable to say that the speculative demand for money is lowest at times of highest inflation, other things being equal. This is because money held ready for a suitable speculation is losing its value even more quickly at times of rapid inflation, and potential speculators recognise this real cost.

It is perhaps for these reasons that increasingly money has been used to buy physical assets, in particular land and property (by companies) and houses (by individuals). The real return on these assets since 1970 has been positive, especially when there has been high inflation. As these assets are illiquid, it is likely that there is less money available for switching between a portfolio of financial assets and complete liquidity. However, after 1991, the housing market stagnated and house prices fell dramatically, by at least 20 per cent on average. This created the phenomenon of negative equity, which is where the market price of an asset such as a house is less than the amount of money borrowed to buy it (mortgage). As selling would give people large debts, this slowed down market activity and so reduced the demand for money for speculation.
Since 1979 and the return of a Conservative government, which privatised the public sector, share buying has been encouraged. The bullish market of recent years, underpriced shares such as British Telecom, and share gifts to public sector workers have perhaps changed attitudes positively towards speculation. Certainly, building societies were worried by the loss of deposits when two million investors bought British Telecom shares in December 1984.

There are many financial assets which can be bought, ranging from those of low risk and low profits, e.g. savings certificates, through to those of high risk and high profits, e.g. shares. The traditional theory explaining the speculative demand for money took bonds as the main financial asset.

Exercise 3.3
Answer the following questions based on the preceding information. You can check your answers below.

1. What is the RPI?
2. What does the TPI show?
3. Why are weights used in the calculation of the RPI?
4. What are the main functions of money in an economy?
5. Name one narrow measure of money.
6. What do broad measures of money include?

Solutions
1. The RPI is an index measuring changes in the level of retail prices.
2. The TPI shows how much money income would have to rise to maintain purchasing power given both the change in retail prices and changes in the level of taxation.
3. Weights are used to reflect the pattern of consumer expenditure, so that a change in the price of a commodity on which consumers spend a high proportion of their income has a comparably large effect on the RPI.
4. The main functions of money are as a medium of exchange, a store of wealth, and a unit of account.
5. The main narrow measures of money are M0, NIBM1 and M2.
6. The broad measures of money includes notes, coins and bank accounts both in current and deposit accounts.

3.5 The banking system
3.5.1 Financial intermediaries
These are organisations which enable money to be transferred from savers to borrowers. They channel funds into places where the ‘best’ return can be made and give financial advice to customers. In addition, they facilitate the spreading of risks and the acquisition of liquidity.

The financial intermediaries can be classified into three significant groups:

- banks;
- other authorised institutions;
- non-bank financial intermediaries.
All of these institutions are formally or informally supervised by the Bank of England.

**Banks**

Before the 1979 Banking Act any organisation could call itself a ‘bank’ and accept deposits from the public and then lend money. The crash of several ‘fringe banks’ in 1975 and the subsequent ‘lifeboat’ action of the Bank of England to prevent a collapse of confidence pushed the government into legislation. The main purpose of the new Bank of England supervisory scheme is to protect depositors. Thus, no one can accept deposits from the public without express authorisation from the Bank of England.

The 1979 and 1987 Banking Acts introduced definitions of ‘banks’ and ‘authorised institutions’. The title ‘bank’ is reserved for institutions with not less than £5m paid-up equity capital, and Bank of England authorisation. To be authorised, a bank or other institution needs to pass a number of financial tests and to satisfy the Bank of England about the quality and honesty of their management. Once authorised, an institution is also subject to continuous monitoring. The elite among these banks are the clearing banks. They are members of the Bankers Clearing House. They are often termed ‘retail banks’ because of their direct relationship with their customers and their High Street premises. Nearly all of the commercial banks are public limited companies, part of whose profits are remitted to shareholders.

Merchant banks are banking brokers who bring together the lenders and borrowers of large sums of money, e.g. firms. They operate in a high-risk area and handle very large sums of money, increasingly on an international scale. They advise companies on money management, arrange short-term finance and negotiate bills of exchange. A bill of exchange is a trading contract, usually for three months, upon which a trader can usually get credit. In addition, merchant banks underwrite the launching of new shares, e.g. Lazard Bros. organised the privatisation of Britoil in 1985 and supervise company takeovers on the stock market. Also, as accepting houses, they guarantee commercial bills for companies. They are thus wholesalers of money in the system.

**Other authorised institutions**

In total, there are over 500 ‘authorised institutions’ in Britain. Overseas ‘incorporated’ institutions account for a growing part of this total – these are branches of foreign banks.

Discount houses are another type of unofficial bank, which are unique to Britain. These nine institutions operate in the money market by borrowing from the commercial banks for a short period (which may be as little as overnight) and lending for up to three months. They make a profit on the difference between the interest rate paid and charged.

**Non-bank financial intermediaries**

These institutions are not officially authorised by the Bank of England, although they are informally watched. However, they often perform banking tasks and since financial deregulation in the 1980s they have competed with banks for business. The best-known type of non-bank is the building society. Most are owned by their members, rather than shareholders, and do not intend to be profit makers. They tend to ‘borrow short’ and ‘lend long’ (via mortgages), profiting from interest-rate differentials.
In the 1980s building societies became more independent and competitive. No longer are society interest rates kept in harmony by the Building Societies Association, so there is more competition between them. In addition, competition with banks and other authorised institutions has increased, particularly in home loans and high-interest, instant-access accounts. However, building societies are still constrained by the requirement that they can lend only a maximum of 5 per cent of their assets for personal finance.

Another trend has been the growth of financial conglomerates. Formerly financial institutions tended to specialise, e.g. building societies and mortgages. Now they are branching out into non-traditional lines of business and offering mortgages. The diversification has also brought estate agents, unit trusts and big High Street retailers into financial intermediaries. In the mid-1990s, several building societies decided to ‘go public’ and become banks. The process takes a while, such that it was not until 1997 that the Halifax, Woolwich and Alliance & Leicester emerged on to the stock market. Thus the distinction between banks and building societies is now blurred and institutions providing the entire range of financial services are dominating the financial system.

3.5.2 The Bank of England

The Bank of England was founded in 1694 and nationalised in 1946. It was subject to government control. In May 1997 the new Labour government gave the Bank of England independence in the conduct of monetary policy. Its Monetary Committee was given the job of setting interest rates to hit the government’s 2.5 per cent inflation target. It has an issue department which is responsible for note issue. The notes in circulation are backed by government and other securities.

The Banking Department holds fewer assets but is more concerned with banking business. It holds public deposits, from government departments, the banks’ deposits and certain other private accounts as liabilities. It may extract special deposits from the banks. The assets backing these liabilities are government securities, premises and some loans.

Generally, the Bank of England has two major responsibilities. First, it ensures the smooth running of the banking system in order to maintain public confidence and faith in the stability of the system. Second, it operates monetary policy.

**Functions**

- **The banker’s bank.** All banks and authorised institutions keep deposits at the Bank of England, currently about \( \frac{1}{2} \) per cent of their total liabilities. These deposits are used in settling clearing debts. The Bank of England can conduct open market operations in the light of the amount of cash held by banks, including that held with the Bank of England.
- **The government’s bank.** The Bank of England holds the government’s accounts, receiving income and paying for goods and services bought by the government. Significantly, the Bank of England manages the national debt on behalf of the government. This involves issuing bonds and bills, paying interest and redeeming matured securities.
- **Note issue.** The sole right to issue notes in England and Wales rests with the Bank of England. It prints and releases notes and coins as necessary, the volume varying with seasonal fluctuations.
- **Supervision of the system.** In performing this function the Bank of England lays down certain ‘prudential standards of liquidity’ to which banks should adhere. For instance, eligible banks must keep a proportion of their eligible liabilities in the form of money
lent at call to discount houses. This ratio should average 5 per cent of total assets so that a bank has sufficient liquid assets to meet withdrawal requests.

- **Lender of last resort.** In order to maintain confidence the Bank of England provides cash to the discount houses when they have to repay loans (money at call) to commercial banks. However, the cash is loaned at a price, namely a higher rate of interest than normal. It is through this mechanism that interest rate changes can occur. In the last two years rises have tended to be small (0.25 per cent) but frequent. This light touch has been designed to limit inflation yet maintain economic growth.

- **Foreign dealings.** The Bank of England holds gold and foreign currency reserves in the Exchange Equalisation Account. It may use these to buy or sell sterling in the foreign exchange market. Generally, the Bank of England co-operates with other international financial bodies, such as the International Monetary Fund, and the central banks of other nations.

### 3.5.3 The commercial banks

The big four clearers provide a wide range of services which emanate from their basic functions:

(a) **Safeguarding money.** Customers’ deposits are kept in deposit and current accounts. Deposit (time) accounts are operated for savers who receive interest for storing their money at the bank. The rate of interest received varies with movements in the bank’s base rate. If interest rates in the money market rise, then bank base rate is increased so depositors receive more interest on their deposits.

In contrast, current (sight) accounts do not usually gain interest, although they do provide the holder with a cheque book facility. Customers can settle debts by writing cheques or by using debit cards, and also withdraw cash on demand. The number of current accounts in Britain increases yearly as cheques become more widely used and accepted as a form of money. The main clearing banks have offered ‘free banking’ (i.e. no charges) in current accounts while the customer stayed in credit, but this has been under reconsideration since 1996.

The distinction between deposit and current accounts is becoming less clear cut, as banks devise new financial instruments. For example, high-interest cheque accounts continue the traditional features of deposit and current accounts and were invented to attract specific customers.

(b) **Transferring money.** Banks move cash between their branches when required. In operating the cheque clearing system they transfer money between accounts within a branch, between different branches and between different banks. Each clearing bank has an account at the Bank of England. In effect, every time one of a bank’s customers writes a cheque, which is presented at another bank, the payer’s bank has its account at the Bank of England debited. Conversely, the recipient’s bank has its account credited. In practice, at daily clearing, each bank totals up its accounts with every other bank and the net amount owed (or gained) is deducted from (or credited to) its account.

This is a money transmission service. It is also undertaken by the use of direct debits, standing orders and credit transfers.

(c) **Lending money.** When goldsmiths realised that only a small proportion of their gold deposits was required daily, they decided to put the gold to work by lending and charging interest. The banks perform a similar profit-earning function by providing
loans and overdrafts to customers. Generally the rates of interest charged to businesses are less than those levied on personal borrowing.

When a customer has a current account, he/she might seek an overdraft. Usually, overdrafts are for short periods of time, allowing customers to write cheques to a value greater than the funds in the current account. Interest is charged on a daily basis on the actual amount by which the customer is ‘in the red’. This tends to be a cheaper form of borrowing, if prior authority is given by the bank. Overdrafts are more informal and more flexible than loans, although penalty rates of interest may be charged for unauthorised borrowing.

(d) Facilitating trade. Modern banks provide numerous services which facilitate easier trading. The accepting of commercial bills and the provision of foreign exchange make international trade smoother in operation. Similarly the development of advisory services for small firms, the participation in loan guarantee schemes and the giving of financial advice and market information encourage domestic trade.

### 3.5.4 Money markets

The financial markets are dominated by the London money market. It is here that banks, companies, local authorities and the government operate via the discount houses in buying and selling short-term debt. The discount houses are described as market makers in bills. This is because they will buy (or sell) treasury and commercial bills to enable holders to transform their assets into liquidity (or their cash into paper financial assets).

One important element of this function is the obligation of the discount houses to purchase each week the full issue of Treasury bills. These are issued in order to make up the difference between government expenditure and reserves. Other buyers may purchase most of the treasury bills but the discount houses guarantee to make good any shortfall in demand. The price which the discount house pays reflects the market rate of interest. A high bid price makes a low rate of interest, because the difference between the price paid and the maturity value (usually three months later) is effectively the interest paid on the loan. For example, a bill bought for £4,900 is redeemed for £5,000 after three months. Thus £100 profit is made on an outlay of £4,900 over three months, approximately 8.2 per cent per annum (100/4,900 × 12/3).

The main commercial bill is a bill of exchange. When a financial intermediary accepts a bill of exchange it is effectively loaning money to a private trader upon promise of a refund by another trader. The bill is a contract between the two traders, with the buyer promising to pay a sum of money in return for goods on a certain date to the seller. The seller may sell the bill or cash to a financial intermediary who will discount it. A bank will discount the bill by paying less than the face value, knowing that it will receive the full value at a later date. The difference between the two sums of money is the interest.

These treasury and commercial bills are also often resold before maturity, again facilitating liquidity for the seller. The discount houses, in turn, raise their funds by borrowing ‘money at call’ from the banks, at very low rates of interest. They make a profit by charging slightly higher rates of interest when buying bills.

The 1970s and 1980s saw enormous financial innovation and the creation of new markets. These are known as parallel money markets. A key characteristic is that transactions are mainly between financial intermediaries, firms and local authorities but not the government.
Secondary markets were developed in bank liabilities, such as certificates of deposit, and in bank assets, such as resaleable bank loans. Such markets as the inter-bank market evolved to enable banks to accommodate fluctuations in customers’ transactions by making loans to one another.

International trading expanded and this led to new foreign currency markets, such as the Eurodollar market. In this market dollar balances earned by European exporters (to the USA) are held in European banks earning interest on favourable terms because they are offshore (held outside the country of origin and not subject to central bank control).

With the increase in financial deregulation since the mid-1980s, new parallel markets in local authority debt, inter-company deposits and finance house borrowing have also sprung up.

### 3.5.5 Yield curves

The yield, or return, from an asset is calculated on the dividend relative to the market price.

It is in effect a rate of interest and can be applied to most paper assets. Commonly, it is used to assess the return on dated government stock. The rate of return, or yield, varies with stocks of differing maturities. This happens partly because the dividend amount is fixed when the stock is sold. For example, at a time of relatively high inflation (e.g. 1990) the dividend would have to be high to attract investors. However, a stock sold four years later, with inflation at 2 per cent, might offer a lower dividend.

As a stock nears maturity, its market price approaches its nominal price. Thus its yield falls. For example, a £100 stock carrying a dividend of £10, and with a market value of £90, gives a yield of 11 per cent (£10 / £90). As the stock approaches maturity, its market value approaches its nominal price (£100) and its yield becomes 10 per cent (£10 / £100).

Figure 3.18 shows a normal yield curve.

Yields rise when the prices of stocks fall. This could occur because market rates of interest on other substitutable assets are rising (i.e. their prices falling). These falling asset prices might result from lower inflation, increased supply of the assets, lower company profits, or financial pessimism. In addition, because shares can be a substitute for stocks, a bullish share market could depress the price of stocks and so raise their yields.

![Figure 3.18](image.png)
### 3.5.6 The creation of credit

Banks create credit as a way of making profit. They are able to do this because not all of the cash that is deposited at a bank will be regularly withdrawn.

Furthermore, when a bank lends money to a borrower, some of that money may be deposited back in the bank by another customer who deals with the borrower. This provides more cash reserves. In practice, the banks have discovered that at most 10 per cent of the deposited cash will be withdrawn, thereby leaving the remainder for loans and/or investment. This percentage is known as the cash ratio.

The use of the cash ratio makes possible the multiple creation of credit by banks. In the simple example given in Figure 3.19, a bank opens with ‘A’ deposit of £1,000 on day 1. On day 2 the bank manager decides, on the basis of the 10 per cent cash ratio, to make a loan to business woman ‘B’ of £900. In the course of their business dealing ‘B’ pays £400 to ‘C’, who banks at the same bank. When C pays in £400 on the third day, this raises the cash at the bank to £500 and total liabilities (deposit accounts) to £1,400. These liabilities only necessitate £140 in cash (i.e. 10 per cent ratio) which means that the bank can put the ‘excess’ cash of £360 to work. This is done on day 4 when investments to that account are made. This broadens the bank’s asset structure. Alternatively, the bank could have lent the £360 to another customer seeking a loan. The process of credit creation can continue as long as the relationship of cash to total deposits is maintained. The term ‘deposit multiplier’ (or credit multiplier) is given to the total level of deposits resulting from the increase in cash. This amount equals the reciprocal of the cash ratio (i.e. $1 \div \text{cash ratio}$). Thus a cash ratio of 10 per cent gives a money multiplier of 10.

### External limitations

In practice, the extent to which an individual bank can expand its credit is limited by external factors such as:

(a) **The behaviour of other banks.** If one bank has a lower cash ratio than its rivals, at each daily clearing of cheques it will face net indebtedness (i.e. there will be more money owed to other banks as a result of its customers’ written cheques than received from cheques drawn on the accounts of other banks). This will reduce its balance at the Bank of England, which is treated as part of its cash base, and force a contraction of credit. If such action is not undertaken, the bank will eventually not be able to repay depositors who seek cash. This would undermine public confidence;

<table>
<thead>
<tr>
<th>Day one</th>
<th>Liabilities</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit</td>
<td>A − 1,000</td>
<td>Cash 1,000</td>
</tr>
<tr>
<td>Day two</td>
<td>Deposit</td>
<td>Cash 100</td>
</tr>
<tr>
<td></td>
<td>A − 1,000</td>
<td>B-loan 900</td>
</tr>
<tr>
<td>Day three</td>
<td>Deposit</td>
<td>Cash 500</td>
</tr>
<tr>
<td></td>
<td>A − 1,000</td>
<td>C − 400</td>
</tr>
<tr>
<td></td>
<td>C − 400</td>
<td>B-loan 900</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Investment 360</td>
</tr>
<tr>
<td>Day four</td>
<td>Deposit</td>
<td>Cash 140</td>
</tr>
<tr>
<td></td>
<td>A − 1,000</td>
<td>C − 400</td>
</tr>
</tbody>
</table>

**Figure 3.19** The credit multiplier
(b) *The actions of the Bank of England.* This can have an effect in two ways:
- if the Bank of England sells bills or bonds to a bank’s customers, it may reduce the bank’s cash base and thus a bank’s capacity to create credit. This happens because a bank’s cash base includes its balance at the Bank of England and this will be reduced when the customer’s cheques to buy the bills are drawn on the bank.
- if the Bank of England forces up interest rates, it may reduce the demand for credit (because this action makes credit more expensive) and so a bank may not have sufficient customers seeking credit;

(c) *The behaviour of other financial institutions.* As institutional investors, such as insurance companies, save money in competing financial institutions, interest-rate differentials are very significant for them. Thus, if one bank raises its interest rates to attract custom, then this might limit another institution’s capacity to create credit when it loses the deposits of an institutional investor.

**Recent changes**

The model of credit creation given above is the traditional one. However, since the deregulation process started in the 1980s, the financial system has developed and changed. This has involved the development of new financial instruments and new banking practices. These changes have included:

- the adoption of new financial practices;
- the high level of investments as opposed to credit advances shown by financial firms;
- the growth of international trade and finance;
- libertarian economic attitudes leading to financial deregulation;
- technological innovations that integrated markets, e.g. electronic money transmission.

These developments have led banks into liability management and international credit, rather than just asset management and domestic credit as outlined earlier. The changes have also brought new credit creators into the fray.

Banks were faced with a falling (retail) deposit base in the 1980s and so have increased their reliance on wholesale funding. Thus cash deposits by customers only account for about 30 per cent of total liabilities. This undermines the relationship between customers’ deposits (liabilities) and the cash base when considering credit creation.

In addition, distinctions are fading between the activities of financial institutions. Traditional lines of demarcation have been eroded between banks and building societies, while some mergers have created financial conglomerates offering a wide variety of financial services. Not only have non-bank institutions, such as building societies, engaged in credit creation but also non-financial bodies, such as large companies, e.g. high street retailers.

Furthermore, the international dimension has developed rapidly, with the creation of Euronote facilities and swap activities, as corporate borrowers search worldwide for funding. These facilities have enabled British firms to borrow large sums abroad to finance activities in Britain. Credit has become internationally mobile, as financial innovators package domestic debts (e.g. cars, mortgages) into instruments marketable on world markets.

### 3.5.7 Assets and liabilities

All deposits are banks’ *liabilities* because a bank has to provide money if a customer seeks a withdrawal. The bank’s *assets* are the ways in which the bank has used the deposits.
The bank balance sheet shows the portfolio of assets which the bank holds. These range from the cash on the premises, which is extremely **liquid** but not **profitable**, through to advances which may be very difficult to repossess but yield high returns (Figure 3.20).

Prudent banks, and other financial institutions, arrange, and regularly rearrange, their asset structure to meet these contrasting objectives of liquidity and profitability. In general, the most profitable assets are the least liquid. For example, advances to the private sector may earn in excess of 20 per cent interest but they often cannot very quickly be called in. It is also true that the most liquid assets, such as notes and coin, are the least profitable. Not only do they not earn interest but also they incur financial costs in being handled and guarded. However, they do act as a buffer in case there is a run on the bank.

Banks also seek **security**. Some of the assets, e.g. treasury bills, have government backing, which is reassuring for the banks. However, many are risky and collateral may be sought from customers. It is interesting that in some cases a bank has been the one to ‘pull the plug’ on a risky business, such as a football club, because it was the major creditor.

Advances and investments are considered to be illiquid. They are difficult to redeem quickly and then sometimes only with a loss being incurred. For example, a sale of stock could raise cash but a capital loss may result because the sale occurs when the market is depressed.

---

<table>
<thead>
<tr>
<th>LIABILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deposits</strong></td>
</tr>
<tr>
<td>• UK private sector</td>
</tr>
<tr>
<td>• Certificates of deposit</td>
</tr>
<tr>
<td>• Other</td>
</tr>
<tr>
<td>— £50,000 deposit for fixed period of time</td>
</tr>
<tr>
<td><strong>Foreign currency deposits</strong></td>
</tr>
<tr>
<td><strong>Sterling liabilities</strong></td>
</tr>
<tr>
<td><strong>Capital and other funds</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ASSETS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Money at call</strong></td>
</tr>
<tr>
<td><strong>Loans to local authorities overseas</strong></td>
</tr>
<tr>
<td><strong>Commercial bills for 3 months issued by private sector and accepted by banks</strong></td>
</tr>
<tr>
<td><strong>Notes and coins</strong></td>
</tr>
<tr>
<td><strong>Bills</strong></td>
</tr>
<tr>
<td>• Treasury</td>
</tr>
<tr>
<td>• Eligible bank</td>
</tr>
<tr>
<td>• Other</td>
</tr>
<tr>
<td><strong>Bills</strong></td>
</tr>
<tr>
<td>• Other UK banks</td>
</tr>
<tr>
<td>• Certificates of deposit</td>
</tr>
<tr>
<td>• Other</td>
</tr>
<tr>
<td><strong>Advances</strong></td>
</tr>
<tr>
<td>• UK private sector</td>
</tr>
<tr>
<td>• Other</td>
</tr>
<tr>
<td><strong>Investments</strong></td>
</tr>
<tr>
<td><strong>Other currency assets</strong></td>
</tr>
</tbody>
</table>

**Figure 3.20** Bank balance sheet
Certificates of deposit (CD) which are paper assets issued by banks to depositors who are willing to leave their money on deposit for a specified period of time. The certificates are bought (and sold) by banks, thereby giving their original holders, firms, access to cash. This makes a CD liquid and it is also profitable to a bank, because it receives the interest due on the CD.

Foreign currencies also feature as assets and liabilities in the banks’ balance sheets. Their increasing importance and size shows the international importance of British banking. As these currencies are held on the assets side as loans, advances and investments, they are lucrative but fairly illiquid, like their British counterparts.

The ‘banks in the UK: consolidated balance sheet’ is now shown in a rather different way (Figure 3.21).

### 3.5.8 Banking supervision

#### Capital adequacy rules

Banks create credit for customers in order to make profits, by charging interest. However, not all recipients of credit repay the amount borrowed and so bad debts can arise. For example, in the late 1980s and early 1990s the four major British clearing banks wrote off billions of pounds of Third World debt from their balance sheets.

UK incorporated banks are watched over and advised by the Bank of England. There are certain rules and requirements which are imposed on banks; some of these are described below.

This problem of bad debt and the exposure of major banks throughout Europe precipitated the ‘Basle Agreement’ 1988. This established a risk asset ratio relating a bank’s capital to its assets and off balance sheet exposures. A minimum international standard capital adequacy ratio was set but an individual central bank was permitted to set higher levels if it wished.

The adequacy of a bank’s capital is measured against the bank’s risk assets, which are weighted by category. ‘On balance sheet’ items are weighted according to their location and any available collateral. For example, lending to a local authority attracts a 20 per cent weighting. ‘Off balance sheet’ items have a credit conversion factor applied to them, according to their perceived risk, to give them ‘on balance sheet’ equivalence. For example, a documentary credit is weighted at 20 per cent, indicating a low risk. This is because the letters of credit are backed by irrevocable documents.

<table>
<thead>
<tr>
<th>Liabilities</th>
<th>£bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sterling liabilities</td>
<td>1,327</td>
</tr>
<tr>
<td>(of which deposits)</td>
<td>(1,175)</td>
</tr>
<tr>
<td>Total foreign currency liabilities</td>
<td>1,317</td>
</tr>
<tr>
<td>(of which deposits)</td>
<td>(1,195)</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>2,644</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assets</strong></td>
<td></td>
</tr>
<tr>
<td>Total sterling assets</td>
<td>1,324</td>
</tr>
<tr>
<td>(of which advances)</td>
<td>(759)</td>
</tr>
<tr>
<td>Total foreign currency assets</td>
<td>1,320</td>
</tr>
<tr>
<td>(of which loans/advances)</td>
<td>(778)</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>2,644</td>
</tr>
</tbody>
</table>

**Figure 3.21** Commercial banks consolidated balance sheet, 1994
The minimum capital requirement is calculated as follows:

Weighted risk asset × trigger ratio

The trigger ratio is the minimum for a bank’s capital base to its weighted risk assets. The Basle Agreement set this at 8 per cent minimum, but the Bank of England agrees a target ratio with each bank privately. The British clearers typically average 9 per cent. This means that to support £100m of weighted risk assets, a bank requires £11m minimum capital. At least half of the capital requirement must be shareholders’ capital and accumulated profits, while the remainder will typically include loan stocks and general provisions against losses. Thus, these rules attempt to ensure prudential lending by banks and consistency across the European banks. These risk asset ratios vary between banks largely because of the differing proportions of debt and equity in their capital base. The rules are an effective means of supervision by the Bank of England.

- **Liquidity.** Banks need to hold money in cash to meet customer demand. Such cash flows can be profiled in advance and significant obligations identified.
- **Provisions.** The Bank of England encourages banks to make adequate provision for bad and doubtful debts. It has issued guidance enabling banks to ‘score exposures’ in less developed countries against a list of economic and financial factors. Also, under the 1987 Banking Act, banks have to report large exposures to a single customer and their exposures to individual sectors (e.g. property). In addition, a bank is not allowed to lend more than 10 per cent of its capital base to one single borrower.
- **Systems.** Each bank is obliged to report periodically on its procedures and controls. The Bank of England will examine a bank’s methods for monitoring credit risk, its systems for recoverability, its arrears patterns and so on.
- **Personnel.** Directors, managers and large shareholders of banks have to satisfy the Bank of England that they are ‘fit and proper’ people for such positions. The Bank of England interprets this to mean people who are honest, competent, diligent and sound judges.

In addition, the reporting accountants of a bank have to regularly confirm that the Bank of England’s guidelines have been observed. They also submit the necessary statistical returns which will be key data in the Bank of England’s monitoring.

### Exercise 3.4

Answer the following questions based on the preceding information. You can check your answers below.

1. What is a cash ratio?
2. How could the Bank of England try to reduce the demand for credit?
3. Suggest three causes of changes in the financial system in the 1980s.
4. Which assets are most profitable?
5. What are capital adequacy rules?

### Solutions

1. The amount of cash kept by banks in readiness to pay withdrawals.
2. The Bank of England could raise interest rates, which might deter demand.
3. The financial system changed because of the growth of international trade, fewer controls and technical innovation.
4. The most profitable assets to banks are loans.
5. Capital adequacy rules attempt to ensure that banks have sufficient capital to cover potential bad debts on risk assets.

### 3.6 Long-term finance

#### 3.6.1 Capital markets

These markets provide long-term finance for the purchase of fixed assets and external expansion. The main beneficiaries are private-sector firms and public-sector institutions, rather than individual households. There is no accepted definition of the length of time needed to classify borrowing as long term. However, usually *short term* refers to borrowing repayable within a year and includes trade credit, overdrafts and bills of exchange principally. *Medium-term* finance is generally regarded as between one and five years and it is dominated by commercial and merchant banks.

Thus *long-term* finance is lending/borrowing in excess of five years. The normal sources are:

- **retained income** – this accounts for about half of all finance raised in the corporate sector. It is cheap and fairly accessible but dependent on earlier profitability;
- **loans and mortgages** – these are often at a fixed rate, which can be attractive if interest rates are expected to rise;
- **debentures** – these are various types of loan stock with differing degrees of risk;
- **shares** – this issue, via stock market, can give a company a wider capital base but may make it vulnerable to takeover;
- **government agencies**.

The boundaries between financing of the public and private sectors in the UK are now somewhat blurred. The government is keen to attract private sector capital and expertise into the public sector through the Private Finance Initiative (PFI) and Public Private Partnerships. This can be seen in the Health Service and in proposals for the redevelopment of the London underground system. There is also a reverse flow of public capital into the private sector from the Regional Development Agencies and from central government into some infrastructure activities such as the railways.

#### 3.6.2 The Stock Exchange

This encompasses several markets:

- the equities/securities market where ordinary shares, preference shares and debentures are traded;
- the Alternative Investment Market where smaller companies gain access to capital, under less stringent and less costly entry procedures;
- government bonds/gilts market where government sells short (up to 5 years) medium (5–15 years), long (over 15 years) and undated stock.

The phrase ‘capital instruments’ refers to the means (e.g. shares, bonds, etc.) by which organisations raise finance.
In October 1986 the ‘Big Bang’ occurred and the Stock Exchange radically changed. Its central function as a market for the purchase and sale of secondhand securities remained but its operations and procedures were reformed.

Previously, an individual bought shares through a stockbroker. The broker acted as an adviser and an agent for his client (who was charged a commission) and bought shares from a stockjobber. The jobber was a dealer in securities who was willing to buy and sell at a price and hold on to unrequired shares. He did not deal with the general public. This system of single capacity was ended in October 1986 and the broker and jobbing functions were merged. The new dealer, of which there are about 200, has become known as a market-maker.

**Equity market**

Transactions in company securities are the most numerous but average only £15,000 per transaction. These can be subdivided into equities (ordinary shares) and loan capital securities. Equities bestow full voting rights on the shareholder and an entitlement to dividends, once the preference shareholders and the holders of loan capital have been paid out. Preference shareholders receive a fixed dividend and get their capital repaid before ordinary shareholders if a company is wound up.

*Company bonds* and debentures do not confer ownership rights but their holders receive a fixed rate of interest over a set period of time. In 1978 ‘traded options’ were introduced, whereby an option holder can buy/sell a quantity of a company’s shares at a fixed price on a specified date.

In 1985, *convertible securities* became prominent. They combine both debt and equity. The holder of the debt has the option of converting to equity, if desired.

The securities market performs two main functions:

- First, it is a *primary market* for newly issued shares. Typically, a company’s new shares are issued by an issuing house with the help and advice of a stockbroker. There are several possible methods of issuing new shares – by an offer for sale, by placing, by tender and by public issue: issuing a prospectus. In addition existing companies wishing to raise capital may introduce a rights issue. This gives existing shareholders the right to subscribe cash for more shares in proportion to their existing shareholdings. The stockbroker’s involvement is to obtain stock exchange approval for the issue, which a merchant bank usually undertakes.

- Second, a *secondary market* exists for the buying and selling of existing shares. Although this does not contribute to economic production, it has some value. It raises the *liquidity* of company shares because buyers of new issues know that they can sell in the future. In addition, the *worth* of a company can be calculated from its share price. Furthermore, a company can raise further capital by an issue of extra shares more easily and cheaply if it has a high market share price. This was very clear in the stock market boom of 1986–87.

The Stock Exchange is usually given as an example of a *perfectly competitive market* because there are many buyers and sellers with excellent knowledge and rapid reactions to price changes. Share prices are published daily and they reflect demand changes. For instance market-makers will ‘mark down’ the prices of shares for which they have a plentiful supply.

However, in practice many non-economic factors affect share prices:

- *political factors* – wars, crises and elections tend to depress prices generally because of the uncertainty created;
- the general mood of business – optimism about the economy and government policy may stimulate confidence in share buying, thus raising share prices.

The price of a specific share is more likely to be influenced by economic and commercial considerations. For instance, if a company reveals lower profits than expected its share price might fall. Conversely, if a company’s prospects are enhanced by rumours, or announcements, of a takeover, its share price will probably rise.

In Figure 3.22, the demand for a company’s shares has fallen to D₁. It could be that the institutional investors, who hold 70 per cent of UK equities, are concerned about the management, recent trading or lower than expected dividends and so switch to other equities. A similar fall in share price could result from an issue of new shares (S₁), without any change in demand.

**Share price indices**

These measure changes in the average value of shares quoted on the Stock Exchange. The FTSE 100 index shows changes for the top 100 UK company shares by market value, since the index was created (1984). On 30 March 2000 it stood at 6,598 (Table 3.9.) Dow Jones (USA) and Nikkei (Japan) are the other oft-quoted indices. The FTSE continued to climb into 2001 but the onset of recession in the USA and the shock to confidence caused by the events of September 11th produced a significant fall in share prices. Share prices continued to fall and the FTSE reached a low point early 2003. By January 2005, the index had recovered to 4,840 but was still along way from its peak in 2001.

**USM and AIM**

The Unlisted Securities Market (USM) developed because of criticism that the stock market catered mainly for large companies. Since 1980, over 800 companies wishing to raise amounts smaller than £250,000 have been able to gain access to finance. However, since 1988 this market has declined because the qualifying period for trading for the main market has been reduced to three years (it was five, compared with two for the USM) and increasingly more USM companies performed badly, thereby denting the market’s image. Just as significantly, the economic downturn from 1990 meant there were far fewer growing young companies to be served. In 1992 only five new companies came forward and only 300 of the original 800 remain. From 1997, the USM was replaced by the Alternative Investment Market (AIM).
Government bond market

Gilt-edged stocks are fewer in number than shares but marketed in greater volume, averaging £250,000 per transaction on long dated stock. The method of sale since 1979 has been by tender rather than at a fixed price (tap). However, the Bank of England usually sets the minimum tender price and when there is an excess demand all allotments are made at the lowest accepted price. These bonds are sold in £100 units, usually at a fixed interest rate.

There is a wide choice of interest payments and redemption dates to make bonds attractive to buyers. The main buyers are pension funds and life assurance companies who are attracted by a fixed certain income. As explained elsewhere the market price varies with the interest payment (called the ‘coupon’). For example, if interest rates are around 5 per cent then a bond with a £10 coupon will trade at around £200 (10/200 = 5 per cent). If interest rates then rise to 6 per cent, the bond price will move to £166 (10/166 = 6 per cent).

The supply of bonds is determined by the stock of bonds, which basically constitute the national debt. Public-sector borrowing, which necessitates debt sales, will increase the supply of bonds.

---

**Table 3.9** Top 30 of FTSE 100, April 2000

<table>
<thead>
<tr>
<th>Close (p)</th>
<th>Wk’s % change</th>
<th>Div. yield</th>
<th>P/E ratio</th>
<th>Value £bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vodafone Airtouch</td>
<td>348</td>
<td>−5.7</td>
<td>0.4</td>
<td>—</td>
</tr>
<tr>
<td>BP Amoco</td>
<td>573</td>
<td>+5.5</td>
<td>2.2</td>
<td>29.9</td>
</tr>
<tr>
<td>British Telecom</td>
<td>1175</td>
<td>−7.6</td>
<td>1.8</td>
<td>33.5</td>
</tr>
<tr>
<td>Glaxo Wellcome</td>
<td>1795</td>
<td>−2.5</td>
<td>2.1</td>
<td>36.1</td>
</tr>
<tr>
<td>HSBC</td>
<td>741</td>
<td>−4.3</td>
<td>2.9</td>
<td>18.2</td>
</tr>
<tr>
<td>Shell Transport</td>
<td>520</td>
<td>+7.6</td>
<td>2.7</td>
<td>—</td>
</tr>
<tr>
<td>SmithKline Beecham</td>
<td>828</td>
<td>−3.9</td>
<td>1.5</td>
<td>41.5</td>
</tr>
<tr>
<td>AstraZeneca</td>
<td>2539</td>
<td>−9.9</td>
<td>1.7</td>
<td>40.0</td>
</tr>
<tr>
<td>Lloyds TSB</td>
<td>662</td>
<td>−0.5</td>
<td>4.0</td>
<td>14.0</td>
</tr>
<tr>
<td>Cable &amp; Wireless</td>
<td>1178</td>
<td>−13.7</td>
<td>1.2</td>
<td>58.4</td>
</tr>
<tr>
<td>BSkyB</td>
<td>1660</td>
<td>−17.9</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Barclays</td>
<td>1662</td>
<td>+0.9</td>
<td>3.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Royal Bank of Scotland</td>
<td>923</td>
<td>+12.2</td>
<td>3.1</td>
<td>10.5</td>
</tr>
<tr>
<td>Colt Telecom</td>
<td>2985</td>
<td>−16.6</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Marconi</td>
<td>749</td>
<td>−11.7</td>
<td>0.2</td>
<td>61.4</td>
</tr>
<tr>
<td>Prudential</td>
<td>946</td>
<td>−2.2</td>
<td>2.4</td>
<td>30.9</td>
</tr>
<tr>
<td>Reuters</td>
<td>1272</td>
<td>−13.2</td>
<td>1.2</td>
<td>45.8</td>
</tr>
<tr>
<td>Diageo</td>
<td>471</td>
<td>+5.5</td>
<td>4.3</td>
<td>15.3</td>
</tr>
<tr>
<td>Cable &amp; Wireless Comms</td>
<td>1060</td>
<td>−10.7</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Halifax</td>
<td>668</td>
<td>−2.6</td>
<td>3.6</td>
<td>12.7</td>
</tr>
<tr>
<td>Tesco</td>
<td>209</td>
<td>+5.3</td>
<td>2.0</td>
<td>23.6</td>
</tr>
<tr>
<td>Pearson</td>
<td>2181</td>
<td>−7.2</td>
<td>1.0</td>
<td>65.2</td>
</tr>
<tr>
<td>Granada</td>
<td>673</td>
<td>−5.2</td>
<td>1.4</td>
<td>20.0</td>
</tr>
<tr>
<td>BG Group</td>
<td>353</td>
<td>+2.0</td>
<td>2.6</td>
<td>17.3</td>
</tr>
<tr>
<td>Anglo American</td>
<td>2912</td>
<td>−5.8</td>
<td>3.3</td>
<td>—</td>
</tr>
<tr>
<td>Abbey National</td>
<td>825</td>
<td>−0.7</td>
<td>4.9</td>
<td>9.8</td>
</tr>
<tr>
<td>Unilever</td>
<td>402</td>
<td>+3.2</td>
<td>3.2</td>
<td>14.9</td>
</tr>
<tr>
<td>CGU</td>
<td>875</td>
<td>+4.5</td>
<td>4.3</td>
<td>18.7</td>
</tr>
<tr>
<td>Rio Tinto</td>
<td>1052</td>
<td>+5.6</td>
<td>3.3</td>
<td>18.2</td>
</tr>
<tr>
<td>Telewest</td>
<td>481</td>
<td>−9.3</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
In Figure 3.23 a public-sector debt repayment (PSDR) will cause a reduction in bond sales ($S$) and a consequent rise in bond prices, which means a fall in interest rates. Similarly, an increase in demand for bonds ($D$–$D_1$) (maybe because buyers expect an interest rate fall and price rise and wish to make a capital gain), without a change in supply, will force bond prices upward ($P_1$).

### 3.6.3 Venture capital

Venture capital was a remarkable development, symptomatic of the 1980s. It is investment in long-term, risk equity finance where the primary reward for the providers is an eventual capital gain (rather than dividend income or interest).

The main provider was, and still is, Investors in Industry (3i). The clearing banks and the British Technology Group are also significant venture capitalists backing risky investments, usually up to £250,000. Apart from business start-ups, the other main recipients were management buyouts (MBOs), which tend to be the more successful of the two. According to the CBI’s Finance for Growth, most transactions involve millions with a venture capital company underwriting (guaranteeing the funding) a syndicate deal with a number of financial institutions.

Normally the finance comes in a package of ordinary shares, preference shares with special rights, and debt, overdraft and working capital facilities. This often takes up to three months to negotiate. The gain for the venture capitalist may come through a takeover, a trade sale or a stock market flotation, as well as a share of profits. For example, banks seek £150,000 profit minimum often before getting involved. The CBI estimates that 15 per cent of Britain’s top 500 UK companies have been through the venture capital mill.

The sustained growth of the UK venture capital industry has met a rebuff in the 1990s. The British Venture Capital Association noted in 1993 that the number of start-ups backed dropped from 158 to 130 in 1992. The onset of recession, the increasingly discerning stance of the institutional investors and the banks’ antipathy to start-ups have been the main reasons.

The 1994 Budget launched venture capital trusts (VCT), which are quoted investment trusts whose purpose is to attract private money for unquoted companies by offering investors income tax and capital gains tax breaks. At least 70 per cent of a VCT has to be invested in such companies within three years of the launch, with the rest of the investment in blue chip shares to lessen the risk. It is intended to focus on companies in the ‘equity gap’, i.e. those too small to attract big investors but too large to rely on
bank loans. The scheme had only a lukewarm response and only seventeen trusts with £200 million were established in the first three years.

### 3.6.4 International capital markets

The use of international financial markets has developed since the late 1950s and accelerated from the ending of fixed exchange rates in 1971. The main reason has been the growth in mergers, largely involving **multinational companies** (MNCs) who often do not use capital markets in their ‘home’ base. By borrowing abroad in different currencies, MNCs can shop around for favourable terms and avoid domestic government credit restraints.

The funds available on the international capital market fall into three broad categories:

- **short-term capital (Eurocurrency)** borrowed mainly for the purposes of working capital;
- **medium-term capital (Eurocredit)** borrowed for working capital and investment purposes;
- **long-term capital (Eurobonds)** borrowed for investment purposes and for financing mergers and acquisitions.

The international capital market, centred on London, is useful not only for business borrowers. It is also used by government borrowers (e.g. UK local authorities) and provides a market for lending funds for businesses with surplus cash. Thus the market performs a useful international element to the financial asset management function of commercial enterprises.

**Eurobonds**

Although the Eurodollar market is the best known, as this section deals with long-term finance we shall concentrate on the Eurobond market.

Eurobonds are bonds issued by very large companies, banks, governments and supranational institutions, such as the European Commission, to raise long-term finance (five years plus). These bonds are denominated in a currency other than that of the borrower, although often US dollars are used. The bonds are bought and traded by investment institutions, banks and occasionally wealthy individuals.

This is a quality market, demonstrated by the fact that only the ‘first rank’ British companies (first 25) have access to it. Banks make about 2 per cent when they buy a whole bond issue from a borrower. Thus a £100m bond would provide £98m for the company and £2m profit for the bank (and associated underwriters of the loan).

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### Exercise 3.5

Answer the following questions based on the preceding information. You can check your answers below.

1. What do capital markets provide?
2. Give two non-economic factors that influence share prices?
3. What is the Alternative Investment Market?
4. What will be the effect on interest rates of a fall in bond prices?
5. What does 3i (Investors in Industry) provide?
6. What are Eurobonds?
Solutions

1. Capital markets provide long-term finance for companies.
2. Share prices are influenced by political factors and the general mood (optimism/pessimism) concerning government and its competence.
3. The AIM provides for small but growing companies to 'go public' and raise funds up to £250,000.
4. If bond prices fall, then real interest rates are raised.
5. 3i provides long-term risk finance for companies.
6. Eurobonds are long-term loan stocks, issued by very large corporate institutions and governments, which are bought/sold by banks and other financial institutions. They are denominated in a currency other than that of the borrower.

3.7 Interest rates and monetary policy

3.7.1 Market rates

A rate of interest is the price of money which is lent/borrowed. It is expressed as a percentage of the sum, calculated on an annual basis. For example, if someone buys a gilt, and thus lends money to the government, they will receive interest. In this case it is calculated, like the treasury bill mentioned earlier, on the purchase price. Thus there is an inverse relationship between the price of gilts and the rate of interest.

Figure 3.24 shows that an increase in the supply of gilt-edged stock by the government brings down the price. This effectively means that the rate of interest received on holding the stock has increased as a percentage.

We assume that a £100 stock pays £10 annually to the holder as interest. If someone bought the stock and held it until maturity after (say) a year they are effectively receiving 10 per cent interest.

However, if the £100 nominal value stock is bought for less than its face value at £97, the purchaser is really receiving 10.31 per cent, i.e. £10 on an outlay of £97. This is price $P$ in Figure 3.24.

Furthermore, if the government needs to sell more stock in order to finance its public-sector borrowing requirement, the price could fall to £95 ($P_1$ in Figure 3.24). However, this effectively means a higher rate of interest is paid by the borrower (and received by the buyer). It is 10.52 per cent, i.e. (£10 ÷ £95). Thus, there is an inverse}

![Figure 3.24 Market interest rate movement](image)
relationship between the price of gilts and the rate of interest. As gilts near maturity, their market value increases because there is less time before repayment (of £100 face value) occurs. This increase in price also means a fall in the rate of interest.

Generally, the longer the time period of a loan, the higher the rate of interest given/charged because of the greater risk and uncertainty involved. However, because some borrowers are safer than others, two loans for the same length of time might carry varying interest rates. For example, normally a bank loan to a low-risk blue-chip plc would receive a lower rate of interest than a loan to a high-risk sole trader.

Similarly a variety of factors influence the rate of interest given to savers. From the different categories in Table 3.10, you can probably identify some of them.

A central rate of interest

It is clear that there is no such thing as the rate of interest because there are many rates of interest, which reflect varying risk. However, there has always been a central rate around which the others vary and to which governments have paid great attention. This has usually been the rate at which the Bank of England would lend to the money market, based on the treasury bill rates.

In the post-war period until 1971 this key central rate was called Bank Rate and it was fixed by the Bank of England. It was replaced by minimum lending rate which was set at 1/2 per cent above the weekly Treasury bill lender rate, so that it reflected market conditions. However, in 1981 this rate was abolished and so there is no ‘official rate’. Nevertheless, the bank base rate has become a key indicator. It moves to reflect changes in the money market which are triggered by the Bank of England’s behaviour there. For example, if the Bank of England wants higher rates of interest and sells more bills, thereby pushing prices down, this will have a ripple effect and base rates will rise too (causing further ripples).

The new Labour government in 1997 established a Monetary Policy Committee at the Bank of England. It gave the seven members, including five external experts, the power to decide the central rate of interest in the UK. The committee was given a target rate of inflation of 2.5 per cent. Should the rate of inflation vary from this target by 1 per cent or more, the Bank of England is required to provide a written explanation to the Chancellor of the Exchequer. In 1997 it was assumed that this would be most likely to occur if the rate of inflation exceeded the 2.5 per cent target. However, by 2001 it was clear that inflation was undershooting the target and it was just as likely that the Bank of England would have to explain why the rate of inflation had fallen by 1 per cent below the target.

Table 3.10 Top savings rates (February 1999)

<table>
<thead>
<tr>
<th>Account</th>
<th>Notice or term</th>
<th>Minimum deposit (£)</th>
<th>Minimum rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy Access Virgin Direct</td>
<td>—</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Notice account Standard life</td>
<td>50 days</td>
<td>10,000</td>
<td>5.04</td>
</tr>
<tr>
<td>First TESSA Skipton Building Society</td>
<td>—</td>
<td>3,000</td>
<td>7.40</td>
</tr>
<tr>
<td>Follow-on TESSA Yorkshire</td>
<td>—</td>
<td>9,000</td>
<td>6.95</td>
</tr>
<tr>
<td>Guaranteed income bond GE Financial Assurance</td>
<td>1 year</td>
<td>10,000</td>
<td>4.15</td>
</tr>
<tr>
<td>National Savings Income Bond</td>
<td>3 months</td>
<td>25,000</td>
<td>6.75</td>
</tr>
<tr>
<td>Children’s Bond (L)</td>
<td>5 years</td>
<td>25</td>
<td>4.50</td>
</tr>
</tbody>
</table>
**Real interest rates**

The real interest rate puts interest rates in the context of inflation. It shows the interest rate, allowing for inflation. When the rate of interest is higher than the rate of inflation, as it is now, there is a positive real rate. This means that borrowers are losing in real terms but savers are gaining. In Table 3.10 savers with a Virgin Direct account might have received a real rate of interest of 3 per cent (gross interest 6.25 per cent minus, say, 3.25 per cent inflation). Conversely, when the rate of inflation is higher than the rate of interest (e.g. 1980), the real rate of interest will be negative (16 per cent interest – 18 per cent inflation = -2 per cent). In such a case borrowers gain and savers lose.

### 3.7.2 Money and the rate of interest

There are two broad theories which attempt to explain this relationship. The Keynesian analysis is the older of the two theories but does have some merit. The monetarist approach is also less than perfect.

**The Keynesian explanation**

The demand for money and the supply of money are brought together through the rate of interest. The Keynesian analysis suggests that the transactions and precautionary demand for money are *interest inelastic*, i.e. no matter what the rate of interest which can be earned by investing in speculative assets, money is still demanded for transactionary and precautionary motives and not transferred to another use. However, the *speculative demand* for money is *interest elastic*. A high rate of interest will lead to a low speculative demand for money because the potential speculator will put his money into an interest-bearing asset, rather than holding the money available (i.e. preferring liquidity).

Transactionary, precautionary and speculative demand for money can be combined to form a liquidity preference schedule; this is, in effect, the demand curve for money as shown in Figure 3.25. It is also usually assumed that the supply of money can be determined and controlled by the monetary authorities. Thus if money supply is fixed at MS₁, then the rate of interest equals r₁, where demand (LP) equals supply. In theory an increase in the money supply to MS₂ should bring a fall in the rate of interest to r₂, if the demand for money remains unchanged.

![Figure 3.25 Liquidity preference](image)

- **DP** = Precautionary demand
- **DS** = Speculative demand
- **DT** = Transactionary demand
- **LP** = Liquidity demand
- **MS₁** = Money supply
- **MS₂** = Increase in money supply

**Figure 3.25** Liquidity preference
Keynes also suggested that, at very low rates of interest, the demand for money (liquidity preference) might become very elastic. This was based on the fact that bond prices and interest rates vary inversely (see Section 3.5.5). At low interest rates, the expected change in rates is upwards, implying a fall in bond prices, thus there is a strong preference for holding money. This may be rare, but if it occurs the monetary authorities may find it difficult to lower interest rates however much the supply of money is increased. The Bank of Japan has, in recent years, faced a comparable problem. In attempting to deal with recession and deflation the Bank of Japan has reduced interest rates to below 1 per cent; despite this the Japanese economy remains in recession and there is no further scope for interest rate cuts.

**The monetarist explanation**

Monetarists believe that the only significant demand for money is for transactions purposes. This is affected by income and wealth since a higher income would imply a higher level of transactions. Thus the demand curve for money might shift. However, the transactions demand for money is unlikely to be affected by changes in the rate of interest. Thus the demand curve for money is very inelastic. The implication of this is that shifts in either the demand for money or the supply of money will produce large shifts in the price of money, that is the rate of interest (Figure 3.26). Such large shifts in interest rates are seen to be undesirable because of their potential effects on:

- business investment;
- exchange rates;
- consumer credit.

This is one reason why monetarists have argued that the money supply should be carefully controlled, and expanded only in line with the growth of national income.

**A third explanation**

The monetarists also maintain that the central bank is able to control the money supply. This may not be the case. Instead it may be the commercial banks which can increase or decrease the money supply through their ability to create credit. If this is so, it seems likely that banks will attempt to create more credit when interest rates are high since this implies

![Figure 3.26](image)

**Figure 3.26** Money supply and interest rate volatility
higher profits on their lending activity. Thus the supply of money may be sloped in the same way as the supply of ordinary goods and services. In addition, banks by their advertising and easily available credit schemes may be able to increase the demand for money (to $D_1$), thereby keeping interest rates up (at $r_1$, rather than $r_4$). This is illustrated in Figure 3.27.

However, these approaches concentrate on nominal interest rates and do not distinguish between real and nominal interest rates. It is likely that demand for money remains inelastic when real interest rates change. However, higher real interest rates make money lending more attractive to banks and thus probably induce greater supply elasticity. Thus the range over which real interest rates fluctuate tends to be narrower and the undulations smaller than for nominal interest rates.

### 3.7.3 The effects of interest rate changes

Changes in interest rates affect the economy in many ways. The following consequences are the main effects of an increase in interest rates:

- **Spending falls.** Expenditure by consumers, both individual and business, will be reduced. This occurs because the higher interest rates raise the cost of credit and deter spending. If we take incomes as fairly stable in the short term, higher interest payments on credit cards/mortgages, etc., leave less income for spending on consumer goods and services. This fall in spending means less aggregate demand in the economy and thus unemployment results.

- **Asset values fall.** The market value of financial assets will drop, because of the inverse relationship (between bonds and the rate of interest) explained earlier. This, in turn, will reduce many people’s wealth. It is likely that they will react to maintain the value of their total wealth and so may save, thereby further reducing expenditure in the economy. This phenomenon seems to fit the recession of the early 1990s when the house price slump deepened the economic gloom. For many consumers today a house is their main asset, rather than bonds.

- **Foreign funds are attracted into Britain.** A rise in interest rates will encourage overseas financial speculators to deposit money in Britain’s banking institutions because the rate of return has increased, relative to that in other countries. Such funds could be made available as loans to British firms by the banking sector.

- **The exchange rate rises.** The inflow of foreign funds raises demand for sterling and so pushes up the exchange rate. This has the benefit of lowering import prices and thereby bearing down on domestic inflation. However, it makes exports more expensive and possibly

![Figure 3.27 Demand and supply in practice](image)
harder to sell. The longer-term effect on the balance of payments could be beneficial or harmful depending on the elasticity of demand and supply for traded goods.

- **Inflation is lowered.** Higher interest rates impact on inflation in three ways. First, less demand in the economy may encourage producers to lower prices in order to sell. This could be achieved by squeezing profit margins and/or wage levels. Second, new borrowing is deferred by the high interest rates and so demand will fall. Third, the higher exchange rate will raise export prices and thereby threaten sales which in turn pressurises producers to cut costs, particularly wages. If workers are laid off, then again total demand is reduced and inflation is likely to diminish.

Clearly businesses will be affected both directly and indirectly by changes in interest rates. These effects fall into three categories:

- **Costs** are affected by changes in interest rates. Some of the costs of a business, such as the cost of credit and the cost of stockholding, are directly determined by the rate of interest the business has to pay.

- **Investment decisions** are influenced by expected net returns. The rate of interest is the cost of acquiring external investment funds, or the opportunity cost of using internal funds; a change in interest rates will therefore affect the profitability of investment projects.

- **Sales revenue** is affected by changes in interest rates. The volume of sales will decrease if interest rates rise: this is partly because this will generate deflationary pressure in the economy and partly because some sales, for example consumer durable goods, are often based on credit.

Thus the thrust of monetary policy affects the economy as a whole and impacts in many ways on the businesses that make up the economy.

### 3.7.4 The development of monetary policy

Monetary policy is concerned with the supply and price (interest rate) of money in the economy. Its objective is to limit inflation and thereby maintain the value of money:

- a loose monetary policy leads to a lot of borrowing (and thus spending) which will cause inflation and possibly an external trade deficit;

- a tight monetary policy (of high interest rates) may slow down demand and output and thereby cause unemployment.

Monetary policy has occupied a gradually more important place in economic management in the post-war period. In the period through to the early 1970s monetary conditions were seen mainly as a by-product of other policies. However, the relaxation of direct controls (on hire purchase) and the ending of fixed exchange rates led to closer consideration of monetary policy.

Monetary policy in the UK has developed through several stages since the early 1980s.

- **1980–86 Tracking the money supply.** During this period the government, through the **Medium Term Financial Strategy** (MTFS) sought to control the money supply in the UK and gradually reduce inflation and inflation expectations.

- **1986–92 Tracking exchange rates.** After 1986 governments came to believe that the exchange rate for sterling was a good indicator of monetary conditions in the UK and therefore keeping a stable exchange rate would ensure a stable monetary environment for the economy.
• 1993–97 *Tracking broad money.* Having abandoned exchange rate targeting and the narrow measures of money supply, broad money, M4, became the important indicator and target for monetary policy.

• 1997–2005-01-26 *Tracking inflation.* From 1997 the rate of inflation itself became the focus of monetary policy.

Thus the nature of monetary policy, in terms of the targets and indicators used, has changed. The control of monetary policy has also changed.

**Policy framework**

Earlier in this section, it was stated that the policy framework would be directed by the Bank of England and the Treasury, in the light of various indicators. In 1993, this relationship between the Bank of England and the Treasury became more open, with the minutes of the monthly meetings between the Chancellor and the Governor being published (six weeks later).

Occasionally there have been disagreements, for example, May 1995 when the Chancellor refused to raise interest rates against the Governor’s wishes.

Since 1997 the conduct of monetary policy has been delegated entirely to the Bank of England. The government has given the Bank an inflation target (2.5 per cent) and the Bank’s Monetary Policy Committee is free to make interest rate decisions in the light of that target.

Figure 3.28 shows the links in the chain between policy instruments and economic objectives. Thus the ultimate objective and target for monetary policy is the rate of inflation. If indicators, such as money supply figures or retail sales data, suggest that the rate of inflation will differ from its target (currently 2.5 per cent), action, such as altering interest rates or the growth in the supply of money, is called for. If this policy is successful it will ultimately be revealed in the behaviour of the objective, the rate of inflation.

### 3.7.5 The role of fiscal policy

For many years (and in many textbooks) fiscal policy was treated separately from monetary policy. However, since the 1970s the monetary effects of fiscal policies have become more apparent. Fiscal policy is concerned with taxation and public spending. At its centre is the amount of government borrowing. This used to be called the *public sector borrowing requirement* (PSBR), but is now referred to as the *public sector net cash requirement* (PSNCR). This shows the difference between the government’s expenditure and its tax revenue – revenue on a cash basis. The government also measures its borrowing needs on a different basis, known as *public sector net borrowing* (PSNB); both of these are measures of how much the government needs to borrow to help finance its activities. If there is a deficit, the

![Figure 3.28](image.jpg)
government needs to borrow money to finance it. These borrowings can have significant monetary effects.

Alternatively, if there is a budget surplus the government may engage in debt repayment; in this situation the government has a *public sector cash surplus*. Until recently this was relatively rare but since 1998 the UK government has generated large budget surpluses.

These budget surpluses and deficits have important implications for monetary conditions in the economy and therefore for monetary policy. If monetary policy is to be effective it needs to maintain some control over the total supply of money in the economy; this, in turn, implies a need to understand and control the source of the increase in money supply. The conventional view from the late 1970s was that the most important source of money supply growth was government borrowing. This is confirmed as an accounting identity in the flow of funds approach and is accepted because of the logic of bank lending. Government borrowing involves issuing government securities (such as Treasury Bills) into the banking system; since these are regarded by banks as effectively liquid assets, the ability of banks to create credit is increased and the money supply expands.

Thus it became impossible to keep monetary and fiscal policy separate. The medium-term financial strategy (see section 3.7.4) included targets for the reduction of government borrowing as well as targets for reductions in the money supply, for it was believed that the former was necessary to achieve the latter. Thus large PSNRs may well be inflationary via their effect on the supply of money and hence monetary and fiscal policy are inevitably linked.

### 3.7.6 Control by the Bank of England

In practice, in a market economy, control by the Bank of England is difficult to achieve. The bankers have some significant influence in operating the government’s monetary policy. There are two aspects to its policy operations.

First, the Bank of England has a general strategy – to control the money supply in order to help the government achieve its broad macroeconomic objectives. If the immediate priority is to control inflation, then the Bank of England might seek to curb demand by limiting the commercial banks’ capacity to create credit or by making borrowing more expensive via interest rate rises. The second aspect of the policy is the tactics which the Bank of England can use to achieve the first requisite of money supply control. These weapons of monetary (and to a lesser extent fiscal) policy are discussed below.

**Open market operations**

The Bank of England buys and sells Treasury and commercial bills and government bonds in the money market. If it seeks a multiple contraction of credit it will sell bills. The cheques paying for them will be drawn on the banks, whose deposits will fall and whose balances at the Bank of England will be lowered. Their cash base will be lowered and their potential to create credit will be limited.

However, in practice the banks can restore their cash base by reclaiming money at call from the discount houses. The discount houses when they find themselves short of cash always sell bills to the Bank of England. Since 1981, the arrangement has been that they offer the bills to the bank at the prevailing market rate, which the bank can accept or reject. Thus, if the Bank of England wishes to see interest rates rise, it rejects the market...
rate offered by the discount houses and offers to buy at a new higher interest rate, thus penalising the discount houses. As the discount houses do not wish to make losses on their own loans they raise interest rates and the increase is thus transmitted through the money market. Such activity occurred in 1988 when the bank base rate increased from 7 per cent to 13 per cent in order to dampen consumer spending and keep the value of the pound up.

**Assets ratios**

At various times the Bank of England has compelled banks to keep certain proportions of specified assets:

- **1945–51** 8 per cent cash
- **1951–71** 28 per cent liquid assets
- **1971–81** 12½ per cent reserve assets
- **1981–** 1/2 per cent cash/monetary base
- **1988–** 8 per cent weighted risk assets

The increased complexity of these reserve ratios perhaps illustrates the ease with which the banks avoided the basic control which the Bank of England sought. The idea of these ratios was to ensure prudential standards of liquidity and to limit the banks’ ability to create credit. For example, if banks were making loans when the Bank of England sought credit restriction, the Bank of England through *open market operations* would seek to lower the percentage of reserve assets, thereby limiting the banks’ capacity to create credit. Unfortunately, in practice, banks kept a higher percentage of reserve assets as a cushion against such ‘control’.

The use of a monetary base system in which the authorities would control credit creation by controlling the cash base of the banking system, appeared to be a powerful instrument. However, effective use of this instrument might de-stabilise the money market since the Bank of England would be refusing to supply cash to the system when needed. For this reason the system of control via asset ratios has never been really used.

**Interest rates**

As explained earlier, interest rate changes have been a way of reinforcing other tactical manoeuvres made by the Bank of England. There has been no official central rate of interest since minimum lending rate was abolished in 1981. This abolition allowed the Bank of England to vary the rate more frequently and to avoid interest rate changes being seen as a barometer of the government’s political fortunes.

Chancellor Brown in 1997 took this a stage further by giving control over interest rates to the Monetary Committee of the Bank of England.

However, the authorities have a reserve weapon in that they could reactivate the minimum lending rate. In January 1985 Mr Lawson used it successfully for one day to prevent £1 dropping to $1. In stark contrast, Mr Lamont failed to stop speculators from selling sterling when he reactivated MLR on 16 September 1992. Even dramatic hikes in interest rates could not protect the pound and Britain ignominiously left the ERM. In this system, the pound could fluctuate only within a limited range of the average of European currencies. It is interesting that this reserve power has been used for external reasons rather than domestic credit curtailment.
3.7.7 The limitations of monetary policy

The Bank of England faces four main problems in applying monetary policy:

- First, the Bank lacks sufficient detailed, up-to-date information on the economy in general and money supply in particular. For instance, general economic information is received after the event in many cases and is often based on estimates. In particular, money supply is difficult to measure, as the government’s changes of target measure indicate. Further uncertainty is created by the fact that there is a time lag between the initiation of a policy and its fruition, by which time the original problem may have been overcome anyway.

- A second problem is that the banks dislike close supervision. The history of competition and credit control since 1971 and the supplementary deposits scheme showed that they were not averse to evading the Bank of England’s restraints. Thus credit was expanded by the banks when curtailment was sought by the Bank of England.

- Third, the Bank of England fears that over-vigorous control may stifle the initiative of the banks and hinder their profit-maximising ethos. An interesting side effect of the high interest rates of 1980 and 1981 was above-average clearing bank profits upon which the Chancellor placed a windfall profits tax in the 1982 budget. As the Bank of England wants an efficient and profitable banking sector, it cannot go very far in enforcing credit restraint without undermining the banks’ ability to make profits.

- Conflicting objectives are the fourth constraint on Bank of England activities. As stressed earlier, the Bank of England could restrain the growth of credit but it would have to tolerate fluctuating interest rates, with their associated economic handicaps and political repercussions. Thus, since 1981 monetary base control has not really been implemented.

3.7.8 Monetary policy since 1979

The operation of monetary policy by the Conservative governments of the 1980s and 1990s was much different from that of earlier decades and previous governments. It believed in supply-side policies to ‘set the market free’ and disliked discretionary demand management which had, in its view, only achieved transitory reductions in unemployment at the cost of ever accelerating inflation. This monetarist analysis placed monetary policy at the forefront of economic decision-making, thereby relegating fiscal policy to a subordinate role. This contrasted vividly with previous Keynesian economics.

The theoretical basis for the MTFS was that excessive public spending led to budget deficits which in turn raised monetary growth and fuelled demand and inflation, when supply did not keep pace. The diagnosis meant controlling money supply growth and reducing budget deficits. The latter led to high interest rates which crowded out the private sector and thereby inhibited aggregate supply. Thus money supply targets needed to be set and a balanced budget achieved.

Ironically, the first publicly-announced monetary targets were set by a Labour government in 1976, following the 25 per cent inflation peak in 1975. Monetary control was seen as necessary then to reduce inflation, but in conjunction with other policies such as incomes policy and tax increases. The difference in the 1980s was that money supply control, predominantly via interest rate changes, became the policy.

The development of monetary policy since 1979 can best be understood in terms of a several phases.
These are:

(a) **1979–82: the monetarist experiment.** In this period the government sought to control money growth, as measured by £M3. However, as the recession deepened, M3 continued to overshoot its target band, even though the government had organised a ‘credit crunch’. MTFS was overhauled and additional targets, such as M1, were introduced as the government lost faith in M3 and relaxed its stance.

Money stock had increased but, perversely, inflation had plummeted from 21.5 per cent in early 1980 to 5 per cent by early 1983. The falling inflation was attributable to monetary policy at least partly, because of high interest rates. However, the high exchange rate, partly resulting from high interest rates and in turn creating cheaper imports, was a significant other factor lowering demand, output and employment.

(b) **1982–85: ‘the retreat from monetarism’.** Although the MTFS was modified, monetary policy remained relatively tight and fiscal policy was still at best neutral. Thus, although inflation remained moderate at around 5 per cent, unemployment continued to increase. The fall in the exchange rate for sterling was the only positive factor encouraging a recovery from the 1979–82 recession.

(c) **1985–88: targeting the exchange rate.** In this phase the exchange rate became a monetary target. This was logical to monetarists for an open economy, as long as the economy whose exchange rate was targeted pursued suitable price stability policies. Germany was Britain’s main trading partner and eventually the dominant currency in the European Monetary System. However, using interest rates to keep the £ within a target exchange rate zone against Deutschmarks meant that they could not be used to manipulate domestic money supply.

(d) **1988–93: monetary tightness without targets.** The resurgence of inflation led to high interest rates, but without a clear policy and with distrust of all the targets. The emphasis on attacking inflation again brought monetary overkill and massive increases in unemployment, against the unusual backdrop of a budget surplus (public-sector debt repayment). However, the high interest rates in both money and real terms seemed to have little impact on the demand for credit. This was to some extent the result of financial deregulation and asset value (particularly house) appreciation.

The eventual entry into the ERM (of the European Monetary System) in 1990 gave Britain an explicit target rather than a confused hybrid of different vague indicators. However, the exchange rate of about DM2.80 was too high and so interest rates were too high and this intensified the recession even further. Nevertheless, cheaper imports and deflationary pressure on the economy did bring inflation down.

As the high exchange rate was indefensible, as shown on Black Wednesday, September 1992, when a 4 per cent point rise in interest rates failed to stem a flight from sterling, Britain exited from the ERM. The policy vacuum thus created was filled by a new strategy which emerged in the 1993 budget and which might be labelled.

(e) **1993–97: broad money targeting.** A new official target M4 has been introduced, with a wide range: 3–9 per cent. It had grown very slowly during the recession of 1990–92 and held back recovery. Its growth will be encouraged, while inflation is very low and unemployment is high, by the ending of the full funding rule. This was introduced in 1985 and meant that the government sold exactly enough bonds to cover a PSNCR. Overfunding was used in 1981–92 to create liquidity shortages and force up interest rates.
In 1993, because of the massive PSNCR, underfunding was allowed. This meant that the government did not sell enough gilts to the private sector to offset the effects of the budget deficit on the money supply. Instead some of the gilts were sold to the banking sector, which in turn used them as the basis of credit creation. This credit, together with the private sector’s increased cash (because it did not have to buy gilts), increased the demand for goods and services and eventually led to higher output and more jobs. The underfunding also meant that interest rates did not need to rise in order to sell the government debt. This was especially important at a time (summer 1993) when economic recovery was beginning tentatively and higher interest rates could have damaged the famous ‘green shoots’ of economic growth.

(f) 1997–2005: inflation targeting. The Bank of England was given independence in monetary policy-making in 1997 with an inflation target of 2.5 per cent. The Bank is required to explain to the government whenever the rate of inflation is outside of a 1 per cent margin either way from the 2.5 per cent target. Thus, the Bank now targets the rate of inflation directly, rather than a particular measure of the money supply. However, in making its judgment about the trend in inflation it will take into account a range of factors including the money supply, consumer credit and spending, pay settlements and the exchange rate. For example, in 2002 interest rates were lowered in response to deflationary pressures and falling stock markets. However the economy recovered quite strongly in late 2003 and in February 2004 the Bank of England began to raise interest rates to prevent the build up of inflation in the economy.

Exercise 3.6

Answer the following questions based on the preceding information. You can check your answers below.

1. What was MTFS?
2. What happened to monetary targeting in the mid-1980s?
3. What criticisms do monetarists make about a large PSNCR?
4. What are open market operations?
5. When did special deposits cease to be used?
6. Suggest three problems with monetary policy.
7. How have monetary aggregate outturns compared with the targets?
8. What happened on Black Wednesday, September 1992?

Solutions

1. The MTFS was a monetary policy framework setting out the financial targets needed to achieve the economic goal of controlling inflation.
2. Monetary targeting in the mid-1980s was largely abandoned. A switch was made from domestic targets (money supply aggregates) to an external target (the exchange rate).
3. A large PSNCR is inflationary.
4. Open market operations are purchases and sales by the Bank of England of Treasury and commercial bills in the money market. They are a possible means of influencing commercial banks and interest rates.
5. Special deposits ended in 1980.
6. The main problems with monetary policy are informational, supervisory and the effect on a bank’s independence.
7. Monetary target outturns usually vary markedly from the estimates.
8. On Black Wednesday, Britain pulled out of the ERM.

### 3.8 The fiscal environment

There are many aims to taxation and their priority varies with the political complexion of the government. However, all governments are agreed on the need to raise revenue. Originally this income was used to wage war, but today the bulk of it goes on more socially desirable expenditure such as education, health and social services. Taxation, including national insurance contributions which are termed ‘social security receipts’, provides for the bulk of government spending as shown in Figure 3.29.

Monetarists generally wish to suppress the amount of taxation as its levying minimises personal freedom, while Keynesians see the need for a government to put tax funds to more effective use than the unbridled marketplace might achieve. Thus, monetarists require a lower level of taxation and, if possible, a balanced budget to create ‘sound finance’. Alternatively Keynesians see the virtue of economic management through taxation. They would use taxation and public spending to regulate the economy, and even out potentially wild fluctuations in output, employment and prices. Put simply, they would have a higher budget deficit to reflate an ailing economy. This could be achieved through lower taxation, which would stimulate spending, increase demand and lower unemployment. However, monetarists would argue that such reflation leads to inflation.

Taxation can also be used to change markets. Certain potentially harmful goods, such as cigarettes and alcohol, may be heavily taxed, thereby lowering the quantity demanded and reducing consumption levels. Over 75 per cent of the price of cigarettes goes in tax; and at times higher taxes on petrol have been used to deter consumption and induce energy-saving behaviour.

![Figure 3.29](image)

**Figure 3.29** Government income and expenditure: 2000–01

*Source: HM Treasury*
conservation also. Similarly, the taxation rules relating to banks and building society interest payments to depositors were changed in the early 1980s to encourage greater competition in the financial services sector.

In the provision of certain goods and services, the use of taxation replaces the marketplace. The collective provision of certain public goods, such as defence, paid for from taxation revenue, enables it to be given free to everyone. Similarly, the zero price provision of a merit good such as education enables everyone aged from five to 16 to consume it, when market-priced supply might lead to under-consumption by many, which society might consider to be undesirable. However, some merit goods, for example, private school education, are still provided in the market, despite state taxation funding.

Although the Conservative Party sees a more limited role for taxation funding, it subscribes to the above functions in agreement with the Labour Party. However, there is less agreement over issues of income and wealth distribution. Between 1979 and 1997 Conservative governments reduced the basic rate of income tax from 33 per cent to 23 per cent, and the highest rate from 83 per cent to 40 per cent, while increasing VAT, a regressive tax, from 8.5 per cent to 17.5 per cent. This redistributed income from the poor to the rich, but was justified by the desire to increase incentives and encourage investment. Since 1997 the Labour government has further reduced the standard rate of income tax to 22 per cent, but has also introduced a range of tax and expenditure changes that redistributed income towards lower-income groups. These changes have included the introduction of a system of family tax credit and a significant rise in child benefit. In the 2002 budget the government also announced a significant extension of national insurance charges which became effective in April 2003. These were mainly designed to raise revenue to pay for the large increases in expenditure on health and education announced in 2002.

### 3.8.1 Principles of taxation

Adam Smith outlined four canons of taxation and these are still appropriate at present. These four principles are as follows:

- **Certainty.** If people know what is expected of them in terms of what, when, how and where to pay, then the system operates efficiently and evasion is minimised.
- **Convenience.** The PAYE system operates on this basis and the payment of local authority tax by monthly instalments has developed for this reason.
- **Equitable.** They should be fairly based on an individual’s ability to pay. Equality of sacrifice is often subject to conflicting interpretations, but it is usually agreed that a progressive element to income tax is fair in that the better off can bear a higher tax burden more easily than those on low incomes.
- **Economy.** Taxes should be cheap to collect.

Since Smith’s day, other principles have been added. These include **efficiency.** A tax needs to achieve its objective efficiently and not undermine other aims and taxes. For instance, if the basic rate of tax is reduced to encourage effort but taxpayers substitute more leisure, then it is not operating efficiently. A further consideration might be the **flexibility** of a tax. A tax needs to be capable of variation in order to fit with changes in economic management.
3.8.2 Types of taxation

Taxes can be classified in several ways:

(a) What is taxed? The three main categories are:

<table>
<thead>
<tr>
<th>Income</th>
<th>Expenditure</th>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income tax</td>
<td>VAT</td>
<td>Inheritance tax</td>
</tr>
<tr>
<td>Corporation tax</td>
<td>Excise duties</td>
<td>Capital gains tax</td>
</tr>
<tr>
<td>National insurance</td>
<td></td>
<td>Customs duties</td>
</tr>
</tbody>
</table>

However, in Britain there are also taxes on property ownership (council tax), car use (motor vehicle licence duty), television use (licence fee), a firm’s payroll (employers’ national insurance), and oil royalties (petroleum revenue tax).

(b) Who is levying the tax? Most taxes are imposed by central government but local authorities are given the power to raise taxes. These were originally rates but were replaced with Community Charge ('Poll Tax') which was itself replaced by the Council Tax. The levels of these taxes have been limited by central government since 1984.

(c) Who is paying the tax? Usually a distinction is made between direct and indirect taxes. With a direct tax the person receiving the income pays the tax to the authorities, e.g. income tax. In contrast, most taxes on expenditure are termed indirect, because the purchaser who benefits from the consumption is charged, usually in the purchase price, but the actual tax revenue is remitted, for convenience, by the seller to the authorities. Although the seller pays in the nominal sense he/she may be able to pass on the incidence of the tax to the purchaser through a higher price.

(d) What percentage of income is paid in tax? – at various income levels. The main categories here are:

- **progressive** – a larger percentage of income is paid in tax as income rises, e.g. income tax (above a certain minimum).
- **regressive** – a smaller percentage of income is paid in tax as income rises, e.g. VAT (on most goods and services).
- **proportional** – the same percentage of income is paid in tax at all income levels, e.g. employees’ national insurance at 10 per cent on all income between £81 and £455 per week.

Thus, with a progressive tax the average rate of taxation rises with income, whereas with a regressive tax the average rate falls. The average rate of tax is constant with a proportional tax. The marginal rate of taxation (percentage of extra £1 income paid in tax) also varies between these different types of tax. The marginal rate is higher than the average rate with a progressive tax but lower with a regressive tax as income rises. The two rates are equal for a proportional tax.

3.8.3 Incidence of taxation

The incidence of a tax occurs in two ways.

- The formal incidence refers to the person or organisation who is required to remit the tax to the government, for example retailers paying VAT;
- The real incidence refers to the person on whom the burden of the tax falls, for example the customer on whom most of the burden of VAT falls. The ability of a producer to pass on the burden of an indirect tax to the customer depends on the price elasticity of demand.
Expenditure taxes, such as VAT, distort prices and quantity supplied. Such taxes shift a producer’s supply curve to the left as shown in Figure 3.30. At each price the producer is now prepared to supply less because part of his sales income goes in tax to the government. The supply schedule shows that at £2 price, before tax, fifteen units were supplied; but since the tax was levied (£1 per unit) only ten were marketed. The supplier’s total revenue before tax was £30 but now it is only £10 (20 – 10 tax). In order to achieve net revenue of £30, the supplier needs to produce fifteen units at £3 (45/15 tax = 30). In the diagram, the vertical distance \((ab)\) between the two supply curves shows the tax per unit.

The original equilibrium was £3 and twenty units. The imposition of the tax has caused a fall in the quantity demanded to seventeen units and a price rise to £3.30. This occurred because of the elasticity of demand. A more inelastic demand curve, \(D_1\), would cause a smaller fall in quantity demanded and a higher market price.

The only circumstance in which the supplier can shift all of the incidence onto the consumer is when price elasticity of demand is completely inelastic. In most circumstances the burden will be shared. In Figure 3.30 the consumer pays an extra 30p. On each sale, the supplier has to pay £1 to the government and so really bears 70p of the tax. Thus, the more elastic the demand curve is, the greater the incidence of the tax borne by the producer.

The opposite would be true if a subsidy were given, as supply would increase and price would fall, benefiting the producer. This can be seen in Figure 3.30 if \(S_1\) is taken as the initial supply curve and \(S\) as the new post-subsidy supply curve. With a £1 subsidy, price falls by 30p helping the consumer and the producer’s revenue per unit increases from £3.30 to £4 (£3 price + £1 subsidy). Thus for government subsidies to benefit the consumer, which is usually the intention, rather than the supplier, they should be placed on goods with relatively inelastic demand.

### 3.8.4 Tax yield

**Direct taxes**

The government is particularly concerned with the yield from taxation, both in total and per individual tax. It is probably easier to calculate the yield from changes in direct taxes, particularly those on income, than from changes in indirect taxes. However, higher income tax rates may lead to evasion and tax avoidance schemes. It has been argued that the growing black economy has resulted from higher taxes, and such activities obviously mean
a loss of government revenue. Also, citizens may substitute leisure for work because they
dislike the marginal tax rate on their earnings and this may slightly lower the tax yield.

In recent years it has been argued that lower rates of taxation, especially of income tax,
may actually raise the total tax yield. This is based on Laffer curve analysis which suggests
that there is an optimum rate of tax for maximising total revenue. If taxes go above this
level, tax revenues will fall. This suggests a strong case for reducing tax rates.

Four main arguments have been used to justify the reduced payment of income tax:

- First, high levels of income tax are a disincentive to work. For instance in 1986 the
  marginal rate of tax and national insurance combined was 39 per cent on most incomes
  between £95 and £300 per week, and this deterred people from overtime working. It
  also acted as a disincentive to the self-employed and small companies, who faced higher
  marginal tax rates. It was argued that the overall effect was to encourage the substitution
  of leisure for work. This, in turn, reduces government income as the Laffer curve below
demonstrates. In Figure 3.31, when the tax rate exceeds $C$, total government revenue
falls because workers substitute leisure. Thus it could be argued that the tax is no longer
efficient. So a tax cut from $D$ to $C$ would actually increase tax yield by £3m ($23 - 20$).
Similarly, taxes could be reduced from $D$ to $B$ without any negative impact on tax
revenues. Furthermore, it was claimed that in America in 1981–83 such a policy had
raised extra revenue. However, critics have argued that it is virtually impossible to
separate out the effects of a cut in tax rates from other economic things that are going
on at the same time. Furthermore, the ‘disincentive to work’ argument takes a narrow
view of worker motivation. Also, there is really no satisfactory way of measuring work
effort, because the number of working hours fails to capture variables such as
dedication, loyalty, drive, pride and long-term career choice.

- In the 1970s Britain experienced a ‘brain drain’ when well-qualified and well-paid (by
  British standards) professionals, such as doctors, golfers, etc., emigrated, particularly to
  the USA. One explanation given was the high rates of income tax, with a top marginal
  rate of 83 per cent. This exodus meant that British investment in human resources had
  been wasted.

- A third argument for lowering income tax rates is that high tax rates mean that fewer
  funds are available for investment. It was claimed that people on high incomes invested

![Figure 3.31 Income tax rates and government revenue](image-url)
their savings in the private sector, thereby stimulating economic growth, but high tax rates deterred such enterprise.

- Fourth, it is argued that reductions in tax liability may lead to lower wage claims, and thus dampen inflation. This may occur because the tax reductions raise the workers’ net disposable income and so they do not seek such high future wage claims, in their attempt to keep better off.

The available evidence gives little support to the above arguments. The yield from income tax continues to rise and, today, the substitution of leisure for work is encouraged because it helps to reduce unemployment, which is a government objective. Research into worker motivation shows tax rates to be a relatively minor and unimportant consideration.

Since 1979 the brain drain has not been halted or reversed, despite the government’s tax changes. The lowering of the maximum tax rate to 40 per cent does not seem to have brought funds into productive investment, although the holdings of paper assets and property have significantly increased. Finally, wage claims tend to reflect economic conditions, such as unemployment, monopoly power, etc., rather than tax changes.

**Indirect taxes**

The effect on yield of taxation on goods and services depends on consumer preferences, demand elasticities and time. When a good has inelastic demand, then sales will not fall and tax will be collected. Even with elastic goods, initially tax revenue will be generated. In Figure 3.30 the amount bought fell from twenty to seventeen but this yielded £17 tax. However, the new higher price for this product may make other substitute products (perhaps untaxed) more attractive and thereby, in time, cause a fall in demand. This, of course, will lower tax revenue in the long run. Thus, the wider the tax base the more likely the government is to maintain its yield.

The taxation of a product may reach saturation point and further taxation may be counter-productive. Either it will only maintain yield but at higher administrative cost or it will lead to a lower yield. Figure 3.32 shows that the original tax RS produced a tax yield of TSRP; but the extra tax levied XS led to a large fall in the quantity demanded and the tax yield became a smaller amount UWNP. The tobacco industry argues that the fall in cigarette sales in the 1990s has been so caused. However, others might argue that there has been a downward shift in demand, activated by health fears.

![Figure 3.32 Tax yield](image-url)
3.8.5 Public spending

The major items of government spending have been shown in Figure 3.29. This is undertaken by central government and local government in Britain. Central government operates nationally and is responsible for the bulk of public spending. It delegates certain functions, notably education, fire and police to local authorities and, through grants, funds at least half of their expenditure too. The specific and rate-support grants supplement the local government’s rates and charges.

Public spending can be classified in three ways:

- **By function.** Figure 3.29 shows the main areas of government expenditure by function. Social security dominates the expenditure as a result of rapid increases in spending on pensions as the proportion of the population who are retired increases. Defence spending has fallen as proportion of expenditure, whereas those of education and health have risen. The latter are merit goods and the demand for these tends to increase rapidly as living standards rise.

- **Real and transfer spending.** Transfer spending by the government simply redistributes income between different members of society, e.g. tax income used to pay income support, debt interest, regional aid. There are transfers within the public sector between nationalised industries and central government and between local government and central government. The recipient of the transfer payment does not provide a productive service in return. Real expenditure occurs only when the public sector buys goods and services, e.g. payment of a civil servant’s salary, purchase of filing cabinets, and the building of hospitals. In these cases, scarce resources are used.

- **Current and capital spending.** Spending on capital items such as schools, roads and hospitals involves the creation of assets which can be used productively. Their creation adds to the nation’s wealth. However, current spending is on immediately consumable goods and services, e.g. school meals, civil servants’ salary.

When public spending growth is curtailed and cuts are made, capital spending tends to be sacrificed at the expense of current consumption. Such action is easier, as jobs are maintained, but the nation’s capacity for future growth is constrained.

3.8.6 Fiscal policy

A government’s budgetary policy is concerned with the balance between its income and spending and the effects which changes in the balance might have on the economy. The difference between central government income and expenditure is termed the **budget deficit**. However, the balance between the income and spending of the whole of the public sector is nowadays more significant and is termed public sector borrowing. Recently, the term the public-sector net cash requirement (PSNCR) has been used instead of the PSBR; these terms are effectively interchangeable. The PSNCR incorporates the borrowing of central government, public corporations and local authorities. Much of the central government’s borrowing is used to subsidise public corporations through specific grants and local authorities through rate support grants.

A budget deficit (surplus) should not be confused with a trade deficit (surplus). Both are important sets of accounts, but the latter refers to the balance of payments between Britain and its trading partners. A budget deficit shows where the flow of government expenditure exceeds the flow of its income.
The PSNCR is the difference between two large accounting totals. It is a *cash* concept which quickly and fairly accurately (although an accounting adjustment equivalent to 2.5 per cent has appeared recently) measures actual money flows. Thus it gives reliable and timely information for economic decision-making. PSNCR *projections*, which are generally less accurate, are given annually, from November since 1993.

The budget deficit naturally rose in recessions as tax yields fell and public expenditure on social security for the unemployed rose. This can be seen in the early 1980s and especially in the recession of 1990–93. As the economy grows the reverse happened and the budget moves into surplus as can be seen from the period 1998–2001. Currently the budget deficit has reappeared, partly as the result of slower growth in 2002/03 and partly as a consequence of significant increases in government expenditure on health and education.

*Measurement*

It is difficult to plot the growth of PSNCR because forecasts differ from outturns, inflation distorts inter-year comparisons and the figures have been distorted. The latter has occurred because since 1981–82 the government has sold off various public-sector assets, such as council houses, shares in public corporations, and nationalised industry-owned land, counting them as negative spending. This action has reduced the PSNCR by between £2.5m and £5m in different years, thus enabling the government to claim some success in hitting its PSNCR targets! It appears that policies such as privatisation are initiated in order to meet PSNCR targets, rather than the PSNCR outturns becoming the basis for prepared policies!

Furthermore, the assumptions built into the expenditure plans may not occur. For instance a 3 per cent pay increase for teachers was budgeted for in the cash limits for 1985–86, but eventually 6.9 per cent was paid. In addition, when circumstances change then planned expenditure and revenue targets may not be met. A political event, such as the Iraqi war in 2003, may raise spending while economic changes, such as increased VAT receipts (consumer credit boom 1988–90), make forecasts unobtainable. This can be illustrated by the budget forecast and outturn for 1999–2000. The forecast made in 1999 was for a budget deficit of £3bn. However, the economy grew much more rapidly than had been expected, depressing expenditure on unemployment-related benefits and boosting tax revenue. The result was that the budget surplus for the year was nearly £12bn.

Rather than just considering absolute data on public finance, the relationship with the economy as a whole is deemed by some to be more important. Hence consideration of PSNCR as a percentage of GDP is a significant economic statistic. The main aim of the medium-term financial strategy instituted by the Conservative government of the 1980s was to reduce PSNCR as a percentage of GDP. The reasoning behind this strategy has been outlined earlier. The figure was 5.7 per cent in 1980–81 and lowered to nil by 1984–85. After the success in creating a negative PSNCR in 1986–88, public finances worsened considerably in the early 1990s. By 1992–93 the negative PSNCR was equal to 6 per cent of GDP. This was the result partly of previous reductions in direct taxation, but mainly because of the severity of the recession 1990–93. The subsequent recovery and strong growth of the economy in the second half of the 1990s was the major factor in the shift back to a budget surplus (1.3 per cent of GDP in 1999) by the end of the decade.
3.8.7 The nature of the PSNCR

Concern in 1992–93, when the PSNCR shot up to £37bn, and high forecasts for the 1990s, have led to a discussion about the extent to which the PSNCR is structural or cyclical. If it is cyclical, it means that the PSNCR will adjust with the economic cycle (i.e. the PSNCR will grow during a slump when tax revenue falls and expenditure rises, as economic activity is relatively low). Alternatively, the PSNCR will virtually disappear during a boom, when a recession has ended.

In contrast, if the high PSNCR of the early 1990s was structural, it would indicate a problem of fundamental imbalance in the public finances. The OECD estimated that 70 per cent of the PSNCR 1993/4 was structural; the UK government conceded that as much as 50 per cent might have been structural. The implication is that a rise in taxation or a reduction in expenditure is needed since persistent government borrowing would have long term financial implications.

Analysis has suggested that the increased in the PSNCR in this period stemmed from:

- **The ageing population** – the increased number of old people has raised social security spending enormously. Their medical needs also mean increased healthcare expenditure: in the UK there are more than one million people over 90 years of age;
- **High unemployment** – each unemployed person costs the state £8,500 per annum in lost tax revenue and paid-out benefits;
- **Debt interest** – each PSNCR raises the national debt upon which interest has to be paid. In 1996–97 annual debt interest was £25bn;
- **Political commitments** – the upholding of election pledges on health spending and law and order can raise PSNCR totals;
- **Inflation** – this raises the cost of public provision of goods and services. It is often higher in the public sector;
- **Tax changes** – the reduction of tax rates (despite the Laffer curve theory) has diminished government revenue relative to its spending commitments.

The significant *cyclical* causes above are the result of the trade cycle; in a recession unemployment increases, raising social security expenditure, and tax receipts fall. The reduction in unemployment and the avoidance of recessions since 1997 has contributed to the reduction in government borrowing since that date but slower than expected growth in 2002/3 was the major factor in government borrowing exceeding its predicted level.

The important *structural* factors above are the ageing population and commitments to increased expenditure. The ageing population is a long term problem affecting all developed economies and unless changes are made to retirement ages and pension arrangements the burden of public expenditure may become excessive. The commitment to increased expenditure, especially on health and education, will permanently raise the level of public expenditure. The government has recognised this long term problem and has raised national insurance contributions and introduced increased university tuition fees in an attempt to ensure that government borrowing is kept within the limits set by the ‘golden rule’.

3.8.8 Financing the PSNCR

This can be considered in two ways:

- by the *economic sector* providing the funds. The non-bank private sector through pension funds and insurance companies accounts for the bulk of the funds, while households...
and other financial institutions contribute the rest. The overseas sector contributes a small and variable proportion;

- by the type of liability used to raise the funds. Mainly, long-term British government securities (gilts) are issued, although since the early 1980s National Savings have grown in total quality and variety of scheme.

Taking both ways together, the PSNCR is mainly financed by the sales of government debt to the private (non-bank) sector of the economy. The effects of the financing may also be significant, depending upon which economic school of thought is believed.

Keynesians believe that the PSNCR has direct fiscal effects upon output and employment in the economy. A more relaxed fiscal stance, with a higher PSNCR, is broadly expansionary and brings down unemployment. There are indirect monetary effects, in particular higher interest rates, but these have little impact on consumption and investment.

However, the monetarists argue that these indirect monetary effects are very important:

- An increase in money supply causes inflation – the overall impact varies with the means of financing the PSNCR. If debt is sold to the banking sector, the banks’ assets are increased, leading to a possible multiple expansion of credit (explained earlier). This will increase the supply of money and lead to inflation. However, if the debt is bought by the non-bank private sector, the effect on the money supply is largely neutral.

- High interest rates crowd out private sector investment – if high interest rates are needed to achieve the borrowing targets, then it is claimed that fewer funds will be available for the private sector. Thus public-sector spending will inhibit private-sector investment. However, again empirical evidence is slight in favour of this view, because the slow growth of UK investment is mainly explained by lack of demand, managerial and labour factors rather than a shortage of funds. A similar extension of the crowding-out theory is that public sector borrowing pre-empts the private sector using such resources and this enlarged public-sector makes less efficient use of these resources because it does not operate in market conditions.

Correcting a deficit (rather than simply financing it) may also be an issue, particularly if it is much bigger than a government wants. The PSNCR can be lowered by either higher taxes or spending cuts. In 1993, Chancellor Lamont phased in big VAT increases over two years in order to bring down a growing PSNCR (see Figure 3.33).

**The ‘golden rule’**

- Since 1997 the Chancellor of the Exchequer has adopted the golden rule. This rule is that:
  - over the trade cycle as a whole, government current expenditure on goods, services and transfer payments should not exceed its taxation income;
  - only investment expenditure may be financed by government borrowing;
  - the overall burden of public debt should not go above sustainable levels, generally taken to mean 40 per cent of GDP.

This places considerable limits on public borrowing. The government may run a PSNCR in any given year, but over the cycle its total PSNCR should not exceed its investment expenditure. This implies that should there be significant rises in expenditure of a structural kind (e.g. increased spending on the National Health Service), these will have to
be financed not by borrowing, but by increased taxation. This was confirmed by the 2002 budget which contained significant tax rises to finance large increases in expenditure on health and education. There were no significant tax increases in the 2003 budget and the Chancellor of the Exchequer predicted that the golden rule would continue to be met in future years. Nonetheless, the government expects to borrow significant sums particularly in 2003/4. If the government’s prediction for the rate of growth of the UK economy over the next few years turns out to be optimistic, a rise in taxation may become necessary to preserve the ‘golden rule’.

3.8.9 The national debt

The national debt is the stock of all the unpaid accumulated borrowing by the central government. Thus a budget deficit, which usually is slightly smaller than the PSNCR, increases the size of the national debt. The interest paid on the debt is an expenditure item, accounting for 10 per cent of the total. Thus a higher PSNCR raises national debt which in turn increases the next year’s spending (and thus PSNCR). Debt service expenditure has fallen considerably in recent years, partly because of lower interest rates in the economy, and partly because the national debt has fallen as governments have used budget surpluses to pay back previous borrowing.

Most of the national debt is marketable, being composed of Treasury bills and gilts. However, National Savings can only be redeemed by the original buyer (or his/her agent). The bulk of the national debt is owed to UK residents and financial institutions. External holdings comprise less than 10 per cent of the total.

The liquidity of the national debt varies from three months for Treasury bills to over 20 years for gilts. In the past, undated stock, such as 1939 War Loan, was issued without a
redemption date. If the government wishes to extend the average debt length it issues more long-dated stock and fewer ‘shorts’.

**The burden of the national debt**

In real terms the national debt has decreased since 1945 and it is a falling percentage of GDP. This is largely the consequence of the effect of inflation in reducing the real value of financial debts denominated in money terms. Moreover, in recent years, the government has run large budget surpluses; these surpluses have been used to repay previous borrowing and thus further reduce the size of the national debt. However, debt servicing (paying interest on outstanding debt) remains a significant element of government expenditure and hence a burden on taxpayers.

The payment of interest and the redemption of debt involve transfers of funds within the economy from taxpayers to debt-holders. There is no overall burden of debt to society here, but taxpayers will tend to lose and debt-holders tend to gain. The cost of debt servicing clearly increases with the total size of the national debt, although it may fluctuate year by year depending on the interest rate when the debt was sold and the liquidity of the debt. The overall effect on the economy of debt servicing depends on:

(a) How it is financed:
   - If the government borrows more to pay the servicing costs, then in the monetarist view it may cause high interest rates, inflation and lower investment. The overall impact may be lower economic growth.
   - If the government raises taxes or cuts other expenditure, maintaining its PSNCR stance, then it may depress the economy without the inflationary effects.

(b) Where it is financed:
   - If the government borrows from overseas, then initially more resources are put into the British economy and the growth potential is increased. However, later interest payments will drain resources out of the economy and weaken the balance of payments.

The accumulation of funds for the government, by selling debt, may be advantageous if these funds are put to more productive use in the public sector than in the private sector. If the present generation benefits from capital investment in schools and hospitals, then the debt is not a burden. However, in the past much debt was issued to finance wartime expenditure. This *deadweight* debt is a burden on the current population, but it could be argued that they have secured the intangible political gain of democratic independence.

### 3.8.10 The importance of the PSNCR

The PSNCR has become an important economic variable since the late 1970s. Its importance has been highlighted since the 1979 medium-term financial strategy identified a series of targets for its development. Prior to 1976, Keynesians believed in using the budget deficit, a closely related policy variable, as part of a discretionary fiscal policy which could manipulate the level of aggregate demand in the economy.

*Deficit budgets* were used to stimulate the economy, as tax cuts and spending increases would raise consumer demand and lower unemployment. Conversely, increased inflation could be contained by budget surpluses taking money out of the economy. Such policies were essentially short term and fine tuning the economy. However, in the 1960s and 1970s
such demand management had also to cope with balance of payments crises. Often an expansion of demand led to increased import penetration as consumers spent extra income on foreign consumer durables. This created a *balance of payments deficit* on current account and occasionally a sterling crisis, and thereby led to deflation through a tighter fiscal stance, eventually. Furthermore the PSNCR was blamed for inflation.

In Figure 3.34 the government increases its spending, raising AMD to AMD₁, in order to achieve full employment (FE). However, aggregate supply (AS) at the equilibrium level is less than total demand (AMD₁), thus prices rise (inflationary gap, ab). This theoretical analysis could be applied to Britain’s rising inflation in the mid-1970s.

After 1976 and the IMF’s insistence that Britain adopted a monetarist economic policy in return for its loan during the sterling crisis, PSNCR targets were announced annually. With the advent in 1979 of a Conservative government which supported monetarist policies, there have been deliberate moves to reduce PSNCR absolutely and as a percentage of the GDP. This has been difficult to achieve, as outlined above, because of the changes in the business cycle.

**Automatic stabilisers**

The government sector of the economy can act to stabilise the economy, without there being any deliberate (discretionary) change of policy. This happens through the operation of the *taxes and benefits system*. In the above example of the inflationary gap, this rise in prices is modified because not all of the increased income goes into demand. More taxes are paid. Conversely, in a recession when people become unemployed their income does not fall to zero because the benefit system provides some income for them. This serves to minimise the fall in aggregate demand. Thus, these automatic stabilisers *even out fluctuations* in the business cycle. So income support, by preventing absolute poverty, and progressive taxes, by limiting large wealth acquisition, keep an economy from extreme peaks and troughs.

**Exercise 3.7**

Answer the following questions based on the preceding information. You can check your answers below.

1. What is the PSNCR?
2. What is the fiscal stance?
3. Give one cyclical factor which raises government spending.

![Figure 3.34](image) Inflationary gap
4. Why do monetarists dislike the PSNCR?
5. What happens to the national debt if a public-sector debt repayment occurs?
6. What has happened to the national debt in real terms since 1945?

**Solutions**

1. The PSNCR is the public-sector borrowing requirement and is the difference between the income of the public sector (mainly the government) and its expenditure.
2. Fiscal stance describes the balance of government expenditure and taxation and whether this is likely to raise or reduce aggregate demand in the economy.
3. The main cyclical factor which raises the level of government spending is the rise in social security payments as unemployment rises.
4. Monetarists dislike the PSNCR because it tends either to expand the money supply with inflationary consequences or it raises interest rates and crowds out private investment.
5. The absolute value of the national debt decreases if there is a public-sector debt repayment.
6. The national debt has fallen in real terms even though, until recently, its nominal value has increased. This is the result of inflation.

### 3.9 The debate over economic policy

#### 3.9.1 The background

In this chapter we have seen that there are clear philosophical and specific policy differences between Keynesians and monetarists. The monetarists, like the classical economists who preceded Keynes, believe that real and monetary forces are separate. The market forces of demand and supply determine the level of output and relative prices, but money influences the overall price level. This distinction leads monetarists to argue that unemployment is voluntary, caused by workers pricing themselves out of jobs and by trade union activity. They maintain that inflation is created by the government through the excessive supply of money in the economy. Fiscal policy is only important for its contribution towards the level of government spending, which they seek to minimise, and its impact on money supply. Furthermore, in pursuing supply-side policies they wish to ‘free up’ markets and remove imperfections from the economy. These tend to produce micro-level policies, e.g. reform of trade unions, which hopefully will eventually impact on the macroeconomic variables.

In contrast Keynesians reject the quantity theory of money and maintain that money is a vital link between markets. However, because money may be stored, the level of demand may be insufficient to maintain full employment. Thus, involuntary unemployment may arise, where workers would accept a job for which they are qualified at the current wage but are unable to find such a job. Such circumstances give the government a positive role to play in stimulating aggregate demand in order to reduce unemployment. Keynes also used his theory of aggregate demand to explain inflation. He argued that excess demand in an economy at full employment would cause inflation. Later however, Keynesians accepted the existence of cost-push sources of inflation, and sought to deal with the problem through incomes policies.
For Keynesians the government’s role is more interventionist. Thus fiscal policy would be a major way of rectifying the problem of unemployment and the government would have a major responsibility to manage aggregate demand.

Although there appear to be serious differences between monetarist and Keynesian approaches to economic policy, in practice governments of both persuasions were often aiming at the same objectives and working within similar constraints. The result has been some convergence of views and, by the late 1990s, the emergence of something approaching a new consensus in the conduct of economic policy.

3.9.2 Objectives of economic policy

Governments in Britain have a major economic role and responsibility, irrespective of specific party objectives. In a mixed economy, a party with power can change the shape of the economy. For example, the public sector can be slimmed down and the private sector fattened up.

A useful illustration of the economy’s strength is the ‘economic diamond’. Essentially, the bigger the diamond the more successful the economy. The diamond in Figure 3.35 shows the UK in 1998.

Apart from the long-term goal of raising living standards, there are specific short-term objectives for governments. The priority among the objectives varies with the government’s values and political motives. The following five objectives are usually discerned:

- **A low level of inflation** – zero inflation is generally accepted to be unnecessary and unachievable in a modern economy. However, what constitutes a low rate is debatable, although a rate beneath 3 per cent seems acceptable to most governments;
- **Full employment** – there is a definitional problem again because of difficulties in identifying all those genuinely seeking employment. In 1993, a fall from over three million unemployed to a lower figure was an acceptable short-term objective.
- **An equilibrium balance of payments over time** – in practice governments are happy with surpluses and unhappy with deficits, as the latter may necessitate rectifying policies. Interestingly, Britain’s surpluses on current accounts in the early 1980s were produced by temporary oil benefits, and this masked real underlying weaknesses. These became obvious with the large deficits since 1986.

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**Figure 3.35** The economic diamond

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Inflation, %

Current account, % of GDP

Unemployment, %

Economic growth, %
• Economic growth – governments take a real GDP as the appropriate measure of economic growth, rather than purist definitions relating to productive potential. The British post-war average of 2.5 per cent has given improved living standards but illustrated relative decline compared with other main trading nations. A national crisis, such as the miners’ strike of 1984–85, can retard growth for a short period but generally the trend rate is soon re-established. In recent years the UK growth performance has improved. This has taken the form of a steadier rate of growth and fewer years of slow negative growth. In 2001/02 the UK appeared to avoid the sort of recessionary pressures affecting most OECD economies and growth continued at about 2 per cent a year.

• A steady exchange rate – since fixed rates ended in 1971, this has become a short-term objective. Even the Conservative government appeared to adopt a target rate in 1986, after six years of non-intervention. It perhaps recognised the destabilising effects of exchange rate volatility and the need to moderate market forces. In 1990 Britain joined the Exchange Rate Mechanism (ERM), which had been set up in 1979 by the EEC as a ‘zone of monetary stability’. However, under speculative pressure Britain exited in September 1992, and so sterling is floating again.

These five aims are not discrete. The interdependence between them limits policy action. As each aim is difficult to achieve individually, it is clear that simultaneous success is virtually impossible (or has been in Britain’s case). Thus, generally a government sets a priority. For example the 1979–83 Conservative government sought to lower inflation. One apparent consequence of this was to raise unemployment, thereby illustrating the conflict which can arise between objectives.

There is an additional objective that used to be deemed unique to British Labour governments. They sought to redistribute income and wealth in society from rich to poor. The general twentieth century trend towards a less uneven distribution of wealth in society was accelerated by Labour governments. However, between 1979 and 1992 the Conservative government reversed the trend, and so it might be argued that they wished to redistribute too, but from poor to rich!

3.9.3 Policy constraints

In reality governments may be seriously handicapped in their ability to achieve the economic objectives described in the previous section. This section deals with some of those general problems which might limit the effectiveness of government policy initiatives.

Previous policies

An incoming government may be constrained by decisions taken by its predecessor. In the short term, a government may have to complete the funding of projects which have already been started and to honour existing commitments. This constraint particularly applies to fiscal, regional and training policies. Continuity in policy is often desired by the civil service and this tends to inhibit radical change.

However, in the field of trade union affairs, party governments have readily changed course by repeals, amendments and by the introduction of new legislation. As such matters of industrial policy tend to be specific, direct, cheap and legally backed, change is relatively straightforward. Much of the Conservatives’ 1972 Industrial Relations Act was repealed in Labour’s 1976 Trade Union and Labour Relations Amendment Act, despite opposition and delay in the House of Lords.
In contrast, major changes to fiscal and monetary policy are more difficult because of the magnitudes involved, the indirect nature of government control and the need for willing co-operation between economic decision-makers. Nevertheless, the medium-term financial strategy in 1980 was a radical change in government economic policy.

**Information**
The government does not have perfect knowledge of the economy. Its statistics may be outdated, based on estimates and subject to subsequent revision. Good examples of imprecise statistics are the monthly invisible trade figures and the national income accounts. Furthermore, decisions are based on assumptions regarding the operation of the economy and predictions about future trends. For instance, central government expenditure plans take a view on future inflation and pay deals, but the real world might develop differently.

The differences in Table 3.11 clearly show the difficulty of economic forecasting. There are about 30 professional forecasting organisations whose models often give different predicted effects from the same input data. This occurs because their assumptions about interrelationships within the economy vary. The Treasury model has 700 equations (related to more than 1,000 variables), whereas the National Institute for Economic and Social Research (NIESR) has 100 equations and the London Business School (LBS) 200.

**Time lags**
Policy changes take time to implement and time to be effective. For instance, income tax changes usually take a few months to carry out and possibly six months before they affect consumption patterns. Their impact on investment and unemployment will therefore take even longer.

However, during this time circumstances may have changed, such that the policy change undertaken may no longer be relevant. Partly for this reason, monetarists abhor the Keynesian fine-tuning method of demand management, claiming the superiority of the market over government intervention. The 1979 Conservative government outlined a medium-term financial strategy based on control over the money supply and PSNCR as an alternative to short-term tinkering and economic ‘U-turns’. Critics have argued that such an approach is too rigid and does not even respond to significant economic changes which occur over some time.

**No ceteris paribus**
The Latin phrase *ceteris paribus* (meaning ‘other things being equal’) refers to a technique of economic analysis by which some variables are held constant, while the relationship between two other variables is analysed. This technique is not applicable to the world of macroeconomic policy-making. There is no *ceteris paribus*. Britain’s open economy makes government policy initiative even more susceptible to extraneous factors than most others.

<table>
<thead>
<tr>
<th>Table 3.11</th>
<th>1999 budget</th>
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</thead>
<tbody>
<tr>
<td><strong>Budget forecast for 1999</strong></td>
<td><strong>Actual for 1999</strong></td>
</tr>
<tr>
<td>Economic growth, %</td>
<td>1–1.5</td>
</tr>
<tr>
<td>Inflation, %</td>
<td>2.5</td>
</tr>
<tr>
<td>Current account, £bn</td>
<td>– 10</td>
</tr>
<tr>
<td>PSNCR/PSNB</td>
<td>3</td>
</tr>
</tbody>
</table>
Britain’s dependence on exports and imports (each about 25% of GDP) and much freer trading policy than most nations makes her most vulnerable to changes in the world economy. The great increase in unemployment 1979–83 was attributed, by most neutral observers, to government policy and the world recession. An unexpected recession can clearly distort plans by making the underlying assumptions inoperative. In the case of 1979–83, the MTFS made no adjustment for the world recession and so adherence to it intensified the recession in Britain.

A forecast about one variable can be significantly changed by movements in other variables. Also, sometimes the factors that minimise the effectiveness of policies are internal. The information which is the basis of policy action might be flawed, and so understanding of the immediate past may be inaccurate. Natural changes may occur which are unpredictable. For instance, population projections are frequently revised in the light of circumstances. Similarly, crises, such as the oil price hikes of 1973 and 1979, can undermine policies and prevent their fulfilment. Occasionally they help; Britain’s forced exit from the ERM in 1992 undoubtedly quickened Britain’s emergence from recession by enabling interest rates to be lowered, as they had been used to keep up the value of sterling within the ERM.

**Political factors**

Government economic policy cannot ignore political considerations. It is often claimed that political needs supersede prudent economic management at certain times, notably in election years. For instance, economic growth in election years exceeds economic growth in other years by 0.3 per cent on average. This is taken as evidence of Chancellors engineering consumer booms in Budgets prior to elections. Other evidence is less convincing, given that the 1974 and 1979 elections were unplanned and that in 1992 the Conservative government had less popular economic policies than its Labour rival but nevertheless won.

The size of the public sector is still very large, despite Conservative privatisation moves. So each party as government is a significant economic decision-maker. To some extent, their decisions will reflect their political priorities. In the past, Labour was expected to raise the PSNCR to facilitate lower employment, even if it added a few percentage points to inflation, because it would help ‘their people’ (i.e. the working class and poverty-ridden in society). However, New Labour, in power since 1997, has appeared to adopt different priorities and, at least until 2001, had restrained public expenditure and raised taxation to eliminate the structural deficit in the government budget.

**The inefficiency of the methods**

As well as the constraints of information and time, the methods may be inefficient in that they do not achieve their targets. Also, the pursuit of one method may limit the effectiveness of another method. This may prevent the simultaneous achievement of two aims. For instance, a lax fiscal policy aimed at generating spending may increase employment at the possible cost of higher inflation, if supply is relatively inelastic. However, monetarists argue that such a fiscal policy, which raises the PSNCR, is likely to cause an expansion in the money supply. This might (again) cause more inflation. If a restrictive monetary policy was planned, then the expansion of the PSNCR would undermine it, thereby creating operational inefficiency.

The various economic schools rate the efficiency of policy instruments differently. Monetarists have greater faith in the effectiveness of monetary policy compared with fiscal
policy. In contrast, Keynesians prefer budgetary policy because they believe that it is better at the fine tuning of demand which they seek.

**The trade cycle**

This describes the fluctuating pattern of booms and recessions which tend to occur in international trade. When there is an international recession there is no economic growth. There may even be a decline in output. The UK has an open economy and such recessions may be transmitted to the UK via declining export volumes. Such a downturn in economic activity makes it more difficult for UK governments to achieve economic growth and to decrease the level of unemployment. The nature of this open economy and the general role of international trade is explored in Chapter 4.

### 3.10 Chapter summary

This chapter has discussed various features of the macroeconomic environment in which businesses operate. It has developed four main sets of related ideas and principles. These are as follows:

- An economic model of how the economy as a whole functions – the circular flow model. This provides both an explanation of the main economic processes in an economy and a framework for considering economic problems and issues of economic policy.
- This model with its emphasis on aggregate demand and the factors which determine it should be the starting point for analysing problems and questions related to the economy as a whole.
- The main features of the monetary environment in which all businesses function including the main financial institutions and the uses these have for the business sector. Clearly the monetary environment is of great importance to businesses, for it not only affects their costs, especially through changes in interest rates, but it also affects the demand for their products and services by its influence on their potential customers.
- Macroeconomic problems, such as unemployment and inflation, and the ways in which governments might use fiscal and monetary policy in approaching these problems.

**Note**

The term public sector net cash requirement (PSNCR) has recently been introduced as the measure of the level of government borrowing. This replaces the public sector borrowing requirement (PSBR). Although this term has been in use in the UK only for the past two years, it has been, for reasons of clarity and consistency, applied throughout this chapter. Students may come across the older term; they should regard the two terms as having the same meaning.
The articles in this section consider the macroeconomic performance of economies and how fiscal and monetary policy might be used to improve that performance. The first article looks at the decision by the Bank of England to raise interest rates early in 2004, and the inflation expectations that lead to that decision. The second article reviews the tax cuts in the USA, and considers whether such an approach will take the US economy out of recession.

**Trick is to avoid a brick in the face**


An understandable reaction to yesterday’s interest rate decision would be that the mountain had laboured and brought forth a mouse.

Days of deliberation by some of the country’s keenest intellects, supported by 100 or so first-class economists deploying many hundreds of charts, tables and equations: all for the Bank of England to raise the cost of an average £60,000 mortgage by just £9 a month.

That impression, however, would be mistaken. One quarter-point rate rise by itself may have very little impact – certainly the effect of November’s rise in slowing consumer spending or the housing market has been so subtle as to be entirely invisible.

But the operation of monetary policy ad been compared to pulling on a piece of elastic tied to a brick. You pull and pull and nothing happens – you pull again and the brick hits you in the face.

In its statement, the Bank’s monetary policy committee played it poker-faced, trying not to give any sense either way of the expected path of rates. But most economists expect that rate rises will come only gradually – with a pause for a month or two now likely – because the MPC cannot be confident about the effect that they will have.

That sense of uncertainty was fuelled by forecasts published by the Bank in its previous inflation report, last November. They showed that if its main interest rate were left at 3.75 per cent, its central forecast was that inflation would be 2.7 per cent – on the old retail prices index measure – and growth would be 2.9 per cent by the end of 2005.

But if rates rose as the markets expected, to 5.2 per cent in the fourth quarter of next year, then inflation and growth would be only fractionally lower, at 2.4 per cent and 2.7 per cent respectively. The implication was that the Bank thought the economy would be barely any different if rated rose by a further 1½ percentage points.

The Bank explained that interest rate changes need time to take effect, and the full impact of rate rises in 2005 would not be felt until 2007.

But the minutes of last month’s MPC meeting, which voted eight to one to leave rates unchanged, admit to some uncertainty about the effect of their decisions.
One of the arguments against a rate rise was that “the rise in indebtedness of UK consumers implied increased uncertainty about the effect of a change in monetary policy on consumption, and for that reason changes in interest rates should be gradual.” The ‘Transmission mechanism’, by which interest rate changes affect the economy, works through a number of connections.

Interest rate changes can affect the stock market, bond markets and the exchange rate. Expectations of higher rates have been one of the forces driving the pound up against the dollar in the past few months. Higher rates raise the cost of finance for companies, and increase the appeal of leaving an extra pound in the bank rather than investing it in the business. But the most important impact of higher rates is on consumers.

In the past few years, the financial position of consumers has been altered dramatically by their headlong rush into debt. At about 130 per cent of disposable income, household debt is well above its previous peak at the beginning of the recession of the early 1990s. And although interest payments as a proportion of income are not high by historic standards, even after yesterday’s rise, impact of higher rates is likely to be more significant on consumers’ mood than on their finances.

‘It may be that we will get to some tipping point for consumers,’ says Ross Walker, of the Royal Bank of Scotland Financial markets, ‘where we suddenly get this more aggressive and abrupt retrenchment in their spending. And that is what the Bank will want to avoid.’

If consumer spending fails to slow, or even accelerated, however, then rates will have to rise further and faster. The challenge for the monetary policy committee is to prescribe exactly the right medicine, without administering an overdose.

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**Discussion points**

*Discuss these points within your study group before reading the outline solutions*

1. What does the article suggest were the reasons for the Bank’s decision to raise interest rates?
2. What does the article suggest are the mechanisms through which changes in interest rates operate on the economy?

**Outline solutions**

1. The article shows that the Bank of England’s forecasts indicated that, with unchanged interest rates, inflation was likely to rise to 2.7% by the end of 2005. The target rate of inflation for the Bank of England is 2.5%, so a rise in interest rates was indicated. Given the lag in the effects of interest rate changes on the economy, a rise in rates now was required to reduce inflation by late 2005.

2. The mechanism through which changes in interest rates operate upon the economy are identified as higher interest rates

   - tending to lead to a higher exchange rate which depresses the price of imported goods and makes the environment more competitive for producers;
   - depressing investment demand as the net return to investment is reduced;
   - discouraging consumption demand, especially when there is a high level of existing consumer debt; the rise in interest rates will raise the cost of credit and hence discourage consumption financed by borrowing.
The Americans are faithful Keynesians
Roger Bootle, The Sunday Telegraph, 12 January 2003

President Bush has unveiled a programme of tax cuts amounting to some $670bn over 10 years. This raised at least four questions. Why is he doing this? Will it boost the American economy? What are the risks? And why is America allowing the budget deficit to rise when the countries of Europe are keen to reduce theirs?

Why tax cuts now?
The short answer to the first question is that the economy is in a period of weakness which tax cuts (because of the favourable impact on disposable incomes) may help to offset. But this is only part of the story. The other part is political. George Bush Snr failed to win re-election in 1992 because of a faltering economy, despite trouncing Saddam Hussein in the Gulf War. The reason? It was “the economy, stupid”.

The parallels are too close for comfort. This time around, Bush Jnr seems ready to take whatever action is necessary to boost the economy and prevent history repeating itself. The lags involved between proposing a fiscal package to Congress and the cuts actually taking effect leave time for only one fiscal stimulus before the November 2004 elections. Accordingly, there would appear to be no logic in introducing measures now that do not come into effect until well after then.

Given this imperative, at first sight the shape of the proposed package is surprising. Of the total $670bn, only some $100bn is set to take effect this year. The cornerstone is the scrapping of taxation on dividends.

But herein lies the cleverness of the proposals. Financial markets are supposed to look into the distant future and discount future expected happenings into present values. The aim of Bush’s proposals is to boost stock prices now as a result of the stream of additions to after-tax dividend receipts well into the future. Accordingly, provided stock price rise, and provided there is a significant impact of higher stock prices upon spending, there should be a large bang per current buck.

Mind you, despite the cleverness, there is a small rub. Since Bush spoke, stock prices have gone nowhere.

Will it work?
There is no guarantee that a new fiscal stimulus package will boost consumption and gross domestic product growth significantly. Households may be even less inclined than usual to spend their windfall gains during a period of heightened economic uncertainly and rising unemployment, preferring instead to hold onto the money or pay down debt.

This would have the effect of raising the savings ratio back towards more normal levels and easing household debt burdens (which are hovering near historical highs) rather than raising spending. The proposed measures are also biased towards high-income earners, who traditionally have had a lower propensity to consume from extra income.

Furthermore, looser fiscal policy could convince the Fed that monetary policy should be less accommodating than it might otherwise have been, reducing the stimulus to the economy. And bond issuance will rise, which could cause upward pressure on market interest rates, reducing mortgage refinancing activity and thereby reducing household spending.
In its latest forecasts released last August, the Congressional Budget Office predicted a budget deficit of $145bn in 2003 and $111bn in 2004. This equates to a massive deterioration of 4.6 per cent of GDP in the expected budget position for 2003 over the past 18 months.

However, the CBO’s forecasts assume GDP growth of 3 per cent in both 2003 and 2004, which seems far too optimistic to me, and do not take account of the latest tax cuts, nor of the impact of any war with Iraq. Accordingly, as our chart shows, the deficit is likely to rise well above these figures. The final budget deficit for 2003 could increase by a further $50bn if the US has to fund a military conflict with Iraq, even if this is “short and sweet”.

**Risks**

There are some worrying historical parallels. The current administration would do well to remember what happened following President Reagan’s introduction of a fiscal stimulus in 1981. His tax-cutting package was scheduled to cut some $455bn in taxes between 1981 and 1985, equating to roughly 3 per cent of GDP in each year, or just under 10 per cent cumulatively. Admittedly, in today’s prices, this would be equivalent to a fiscal package of about $1,200bn over four years, with a $300bn boost coming in 2003 alone.

The cuts were introduced as the economy entered its worst post-war recession and, combined with some hefty defence spending increases, resulted in a sharp deterioration in the federal budget deficit. Within a year, Reagan was forced to reverse some of the previous cuts as the deficit rose from less than 0.5 per cent of GDP in 1979 to 5 per cent in 1983.

As a result of the sharp increase in the budget deficit, the debt ratio also climbed significantly, from below 50 per cent to over 70 per cent in the early 1990s. It was not until the boom in the second half of the 1990s that the debt ratio began to fall again.

The danger is that cutting taxes too far now may create another debt problem that takes well over 10 years to bring under control. The impact of a much larger deficit on the exchange value of the dollar could eventually be substantial.

**The European dimension**

Interestingly, the news from America came as there were further rumblings from the continent about Germany’s budget deficit. On Wednesday it emerged that the European Commission has given Germany four months to bring the deficit back down to the 3 per cent limit allowed under the stability pact. That means either spending cuts or higher taxes – the exact opposite of what is going on in the US. Why is there this extraordinary contrast?

The answer cannot be because the US economy is in a worse state. The euro zone economy has underperformed for some time, even after the bursting of the stock market bubble.

The superficial answer is that Germany does not have an immediate presidential election to contend with and America does not have a stability pact to adhere to.

The fundamental answer, though, is that American policymakers by and large adhere to the Keynesian notion that it is possible to boost aggregate demand and lessen unemployment by stimulative policy action – both monetary and fiscal – whereas their European equivalents do not. That is why European fiscal policy has been unhelpful, as has monetary policy. Yet again on Thursday, the ECB failed to cut interest rates.

We are entering an interesting time when this difference in philosophies will undergo a severe test. Even though the US is experiencing troubled times, its neo-Keynesianism will serve it better than the antediluvian philosophy which reigns supreme across the Channel.

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**Discussion points**

Discuss these within your study group before reading the outline solutions

1. Outline the arguments used in the article to suggest that the tax cuts in the USA might not be effective in boosting the economy.
2. Why are European countries, facing similar problems to the USA, not also engaging in tax cuts?

**Outline solutions**

1. The tax cuts may not be effective in boosting expenditure for a variety of reasons:
   - households may save their tax cuts rather than spending them especially since household debt is historically high and personal savings rates are low;
   - looser fiscal policy with the threat of inflation may encourage the Federal Reserve Board to tighten monetary policy thus reducing consumer and investment expenditure;
   - the tax cuts may not be sustainable if they result in a very large budget deficit as seems likely.
2. European countries are not opting for the tax cutting route because of a different perception of how economies work:
   - unlike in Europe, US policy makers seem to accept the broad Keynesian conclusion that a fiscal stimulus can raise the level of economic activity in an economy;
   - European countries are, in any case, constrained by the Stability Pact element of the Euro regime which limits the permissible size of government budget deficits.
This section contains examination-standard questions and solutions relevant to the content of Chapter 3. You should use these questions for examination practice and revision.

These questions are either taken from past CIMA examination papers or are based on previous CIMA examination questions.

**Question 1** Multiple-choice selection

1.1 GNP (gross national product) at factor cost may be best defined as:

(A) the total of goods and services produced within an economy over a given period of time.

(B) the total expenditure of consumers on domestically produced goods and services.

(C) all income received by residents in a country in return for factor services provided domestically and abroad.

(D) the value of total output produced domestically plus net property income from abroad, minus capital consumption.

1.2 Structural unemployment is best defined as that caused by:

(A) the long-term decline of particular industries.

(B) the trade cycle.

(C) an insufficient level of aggregate demand.

(D) seasonal variations in demand for particular goods and services.

1.3 Which one of the following would cause a fall in the level of aggregate demand in an economy?

(A) A decrease in government expenditure.

(B) A fall in the propensity to save.

(C) A fall in the level of imports.

(D) A decrease in the level of income tax.

1.4 Which is the best description of the supply of money in an economy?

(A) notes and coins issued by the central bank.

(B) money created by the commercial banks.

(C) coins, notes and bank deposits.

(D) all items of legal tender.
1.5 Which of the following are the likely consequences of a fall in interest rates?

(i) A rise in the demand for consumer credit.
(ii) A fall in investment.
(iii) A fall in government expenditure.
(iv) A rise in the demand for housing.

(A) (i) and (ii) only.
(B) (i), (ii) and (iii) only.
(C) (i), (iii) and (iv) only.
(D) (ii), (iii) and (iv) only.

1.6 The PSNCR (public-sector net cash requirement) is:

(A) the accumulated debts of the government.
(B) the total amount borrowed by all members of the public.
(C) the amount borrowed by the government and public authorities in a given period.
(D) the amount borrowed to finance a balance of payments deficit.

1.7 A progressive tax is one where the tax payment:

(A) rises as income increases.
(B) falls as income increases.
(C) is a constant proportion of income.
(D) rises at a faster rate than income increases.

1.8 According to the advocates of supply-side economics, which one of the following measures is most likely to reduce unemployment in an economy?

(A) Increasing labour retraining schemes.
(B) Increasing public sector investment.
(C) Increasing unemployment benefits.
(D) Decreasing the money supply.

1.9 The essential condition for an asset to act as money is that it is:

(A) legal tender.
(B) generally acceptable.
(C) backed by gold or foreign exchange.
(D) a physical commodity.

1.10 The crowding-out effect refers to:

(A) low wages leading workers to leave an industry.
(B) firms wishing to locate production away from congested areas.
(C) public expenditure displacing private expenditure.
(D) increased rates of taxation leading to lower total tax revenue.

Question 2

The following data refer to the principal sources of taxation revenue for the UK central government.
UK CENTRAL GOVERNMENT TAXATION REVENUE – MAIN TAX SOURCES AS PERCENTAGE OF TOTAL TAX INCOME

<table>
<thead>
<tr>
<th></th>
<th>1979 %</th>
<th>1993 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Income taxes</td>
<td>34.1</td>
<td>30.0</td>
</tr>
<tr>
<td>2. Social security taxes (National Insurance contributions)</td>
<td>19.2</td>
<td>20.0</td>
</tr>
<tr>
<td>3. Corporation tax</td>
<td>6.8</td>
<td>7.9</td>
</tr>
<tr>
<td>4. Value added tax</td>
<td>14.7</td>
<td>22.9</td>
</tr>
<tr>
<td>5. Excise duties</td>
<td>15.9</td>
<td>14.3</td>
</tr>
<tr>
<td>6. Other expenditure taxes*</td>
<td>7.7</td>
<td>3.7</td>
</tr>
<tr>
<td>7. Capital gains tax</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td>8. Inheritance tax</td>
<td>0.7</td>
<td>0.6</td>
</tr>
</tbody>
</table>

*includes stamp duty and motor vehicle duties

Source: CSO national income accounts

Requirements

Using both your knowledge of economic theory and material contained in the table:

(a) State whether each of the following is a direct tax or an indirect tax:

(i) income tax;
(ii) corporation tax;
(iii) value added tax;
(iv) excise duties;
(v) social security taxes.  

(5 marks)

(b) State whether each of the following statements is true or false.

(i) Between 1979 and 1993 the burden of taxation in the UK shifted from indirect towards direct taxation.
(ii) Retailers cannot pass all of an indirect tax onto the customer.
(iii) Most tax revenue is gained when indirect taxes are levied on goods with high price elasticity of demand.
(iv) Taxes will have act as a disincentive if the income effect outweighs the substitution effect.
(v) Indirect taxes are likely to more regressive than direct taxes.  

(5 marks)

(Total marks = 10)
**Question 3**

The following financial data refer to the United Kingdom for the period 1992 to 1997.

<table>
<thead>
<tr>
<th>Year</th>
<th>Interest rates</th>
<th>Share prices</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bank base rate (%)</td>
<td>Instant-access account deposit rate (%)</td>
<td>90-day-access account deposit rate (%)</td>
</tr>
<tr>
<td>1992</td>
<td>8.5</td>
<td>6.3</td>
<td>8.8</td>
</tr>
<tr>
<td>1993</td>
<td>7.0</td>
<td>4.9</td>
<td>6.2</td>
</tr>
<tr>
<td>1994</td>
<td>5.5</td>
<td>3.8</td>
<td>4.5</td>
</tr>
<tr>
<td>1995</td>
<td>6.8</td>
<td>4.2</td>
<td>4.9</td>
</tr>
<tr>
<td>1996</td>
<td>5.8</td>
<td>2.8</td>
<td>3.9</td>
</tr>
<tr>
<td>1997</td>
<td>6.0</td>
<td>2.3</td>
<td>3.9</td>
</tr>
</tbody>
</table>

**Requirements**

Using both your knowledge of economic theory and material contained in the table:

(a) With respect to the data given:

(i) using the bank base rate calculate the real rate of interest for 1994;

(ii) calculate the real mortgage rate of interest for 1995;

(iii) state whether real share prices rose or fell between 1993 and 1994. (3 marks)

(b) State whether each of the following are true or false.

(i) Rising real interest rates will encourage savings and investment.

(ii) Interest rates will only affect business investment if that investment is financed by borrowing.

(iii) Rising interest rates in a country tend to raise the exchange rate for that country’s currency.

(iv) Producers of consumer durable goods are more sensitive to changes in interest rates than supermarkets.

(v) Central banks cannot increase the money supply and raise interest rates at the same time. (5 marks)

(c) State whether the effect of a rise in interest rates will be to

(i) increase or decrease government spending;

(ii) reflate or deflate the economy. (2 marks)

(Total marks = 10)
Question 4

The following data refer to the UK economy and are drawn from HMSO *Economic Trends*. Consider the data and answer the following questions:

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate of growth of GDP</th>
<th>PSBR</th>
<th>Balance of payments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>£bn</td>
<td>£bn</td>
</tr>
<tr>
<td>1980</td>
<td>-2.0</td>
<td>+11.8</td>
<td>+2.6</td>
</tr>
<tr>
<td>1981</td>
<td>-1.1</td>
<td>+10.5</td>
<td>+6.7</td>
</tr>
<tr>
<td>1982</td>
<td>+1.7</td>
<td>+4.8</td>
<td>+4.6</td>
</tr>
<tr>
<td>1983</td>
<td>+3.7</td>
<td>+11.5</td>
<td>+3.5</td>
</tr>
<tr>
<td>1984</td>
<td>+2.0</td>
<td>+10.3</td>
<td>+1.4</td>
</tr>
<tr>
<td>1985</td>
<td>+4.0</td>
<td>+7.4</td>
<td>+2.2</td>
</tr>
<tr>
<td>1986</td>
<td>+4.0</td>
<td>+2.5</td>
<td>-0.9</td>
</tr>
<tr>
<td>1987</td>
<td>+4.6</td>
<td>-1.4</td>
<td>-5.0</td>
</tr>
<tr>
<td>1988</td>
<td>+4.9</td>
<td>-11.9</td>
<td>-16.5</td>
</tr>
<tr>
<td>1989</td>
<td>+2.2</td>
<td>-9.3</td>
<td>-22.5</td>
</tr>
<tr>
<td>1990</td>
<td>+0.6</td>
<td>-2.1</td>
<td>-18.2</td>
</tr>
<tr>
<td>1991</td>
<td>-2.3</td>
<td>+7.7</td>
<td>-7.6</td>
</tr>
<tr>
<td>1992</td>
<td>-0.5</td>
<td>+28.9</td>
<td>-8.5</td>
</tr>
</tbody>
</table>

1. Annual rate of growth of gross domestic product (GDP)

Requirements

Using *both* your knowledge of economic theory *and* the data contained in the table:

(a) With respect to the data in the above table, identify 2 years of economic recession in the UK and state whether in a recession: *(2 marks)*

(i) government borrowing increases or decreases;

(ii) the current account of the balance of payments moves towards deficit or surplus. *(2 marks)*

(b) State whether, other things being equal, the following would increase or decrease the level of government borrowing (the PSBR/PSNCR) or have no effect:

(i) a rise in exports;

(ii) a fall in unemployment. *(2 marks)*

(c) State whether each of the following is *true* or *false*.

(i) A current account deficit must be financed by a surplus on the capital account.

(ii) If the government has a budget deficit it must borrow from abroad to finance it.

(iii) The national debt is the amount of money owed by the UK to other countries.

(iv) The government budget acts as an automatic stabiliser in the trade cycle. *(4 marks)*

(Total marks = 10)
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The answers given below indicate what might reasonably be expected of a candidate, under examination conditions, in order to obtain a good pass mark. It should be noted that there is a high level of objective testing in the examination. The multiple-choice questions have only one answer, as do about half of the subquestions in the data-response questions. In the other elements of the data-response questions, more than one approach might be taken: only the most common and likely approach is given here.

**Solution 1**

1.1 Solution: (C)

GNP is a measure of all incomes received by residents. (A) is incorrect since it refers to domestic output and incomes, (B) is incorrect since it ignores incomes spent on imports and (D) is incorrect since it considers depreciation (capital consumption) and is a measure of net, not gross, national product.

1.2 Solution: (A)

(D) is incorrect since it clearly refers to seasonal unemployment. (B) and (C) refer to unemployment caused by a lack of aggregate demand; this would cause unemployment in the economy as a whole. Structural unemployment is that which occurs irrespective of the overall level of demand and affects only certain industries.

1.3 Solution: (A)

(D) would increase consumer incomes and therefore demand. (B) would mean consumers spending a higher proportion of their income. (C) would imply an increase in demand for home-produced goods. A is correct because government expenditure is one component of aggregate demand.

1.4 Solution: (C)

The question concerns an economic definition of money. (D) refers to a legal definition. (A) and (B) are insufficient, since they refer either to cash or credit, but not to both.

1.5 Solution: (C)

A fall in interest rates will encourage a rise in investment, not a fall. Lower interest rates reduce government expenditure on servicing their debt and encourage consumers to take on more credit, including borrowing for house purchase. Thus (C) is the correct solution.
1.6 Solution: (C)
The PSNCR refers to borrowing by the governments and other public-sector authorities when their expenditure exceeds their income. (B) and (D) are incorrect since the first refers to private borrowing and the second to the balance of payments, not the government budget. (A) is incorrect: this is the accumulation of previous borrowing, not the current level of borrowing.

1.7 Solution: (D)
B refers to a regressive tax and (C) refers to a proportional tax. (A) is insufficient since the tax payment could rise with regressive and proportional taxes. (D) is correct since it identifies a progressive tax as one where the proportion of income taken in tax rises.

1.8 Solution: (A)
Supply-side theorists believe unemployment is the result of problems with the supply of labour. (B) and (D) are concerned with aggregate demand and the demand for labour, and are therefore incorrect. (C) is incorrect since supply-side theorists believe that generous unemployment benefits encourage unemployment.

1.9 Solution: (B)
The most important function of money is to act as a medium of exchange; for this, the essential condition is that it should be generally acceptable. Provided that it is, it does not need to be legal tender, or to be backed by gold or foreign exchange. Neither does it need to be a physical commodity; most money in the UK consists of entries in bank accounts.

1.10 Solution: (C)
The crowding-out effects refers to the process by which an increase in public expenditure may be offset by a fall in private expenditure. If the public expenditure is financed by taxation, private expenditure will fall. If it is financed by borrowing, interest rates are likely to increase, thus discouraging private expenditure.

☑ Solution 2

(a) (i) direct tax  
(ii) direct tax  
(iii) indirect tax  
(iv) indirect tax  
(v) direct tax  

(b) (i) False. The burden of taxation shifted towards indirect taxation.  
(ii) True. A retailer can only pass on all of a tax onto customers if the demand for the good is perfectly price inelastic.  
(iii) False. Most revenue is gained from taxing goods with very low price elasticity since consumers continue to buy even when the price has risen such as in the case of tobacco, petrol and alcohol.  
(iv) False. A rise in taxation makes people take more leisure because of the substitution effect but to take less because of the income effect. Only if the substitution effect is strongest is there a net disincentive effect.
(v) True. Indirect taxes are unrelated to income and therefore tend to be strongly regressive.

Solution 3

(a) (i) 3.2%
(ii) 4.9%
(iii) fell

(b) (i) False. High interest rates encourage savings but discourage business investment.
(ii) False. A rise in interest rates raises the opportunity cost of using internal funds to finance investment.
(iii) True. Higher interest rates encourage capital inflows which increase the demand for the currency.
(iv) True. Consumer durables are often bought on credit.
(v) True. If the supply of money increases, its price, the rate of interest, will go down.

(c) A rise in interest rate would:
(i) raise government spending as the cost of financing government debt would increase.
(ii) deflate the economy since it would discourage expenditure.

Solution 4

(a) The years of recession are 1980, 1981, 1991 and 1992 and in a recession
(i) government borrowing would increase.
(ii) the balance of payments current account would move towards a surplus.

(b) (i) A rise in exports would have no direct effect on the government budget and therefore on government borrowing.
(ii) A fall in unemployment would lead to lower government borrowing as expenditure on unemployment pay fell and tax receipts rose.

(c) (i) True. The balance of payments always balances so a deficit (surplus) on one account is always matched by a surplus (deficit) on the other.
(ii) False. If the government has a budget deficit it must borrow but it can do this domestically as well as internationally.
(iii) False. Most government borrowing is done domestically so the bulk of the national debt is debt owed by the government to individuals and organisations in its own country.
(iv) True. In a recession taxes fall and expenditure rises thus limiting the recession; the reverse occurs in a boom period.
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LEARNING OUTCOMES

This chapter looks at Britain’s economy in a global context. The development of the world economy is explained within the context of globalisation. The important role of multinational corporations and the way they affect national economies is examined. As a premier trading nation it is important to realise the benefits of trade, and these are outlined. The underpinning theory of comparative advantage is explained with hypothetical examples. Its weaknesses are also discussed. The chapter then looks at modern trade, in particular protection. The methods of protection and reasons behind such measures are also given, as are the criticisms of protectionist policies.

The growing importance in economic analysis and in national economies’ performance of the exchange rate is acknowledged in the next section. Here, the foreign exchange market is explained and the various exchange rate systems are described in some detail. Britain’s flirtation with the Exchange Rate Mechanism (ERM) of the European Monetary System (EMS) and its return to a floating system are analysed.

The determination of exchange rates is considered at two levels. First, the theories behind underlying changes are explained; second, the economic forces which cause short- and medium-term movements are detailed.

The future for Britain’s exchange rate is also examined in the context of the EMS. The operation of the ERM is chronicled and the future plans for European economic and monetary union are described. Of particular note are the convergence criteria which participating member economies are supposed to attain before they are able to join the single currency system.

An assessment can be made of a nation’s trading performance. The information needed is gathered in the compilation of the balance of payments statistics. The current and capital accounts are described and the recent British performance of imports and exports is considered.

The idea that there is a fundamental structural weakness in Britain’s trading performance is developed. The possible causes are identified. Finally, policies which have been attempted to deal with the disequilibrium are examined. In addition, the Marshall–Lerner elasticities theory and the ‘J’-curve analysis are brought in to add intellectual weight to the discussion.
4.1 Globalisation

4.1.1 Context

International trade has existed ever since economies had goods to trade. Such trade was, however, limited and the study of economics, while acknowledging international trade, concentrated on domestic economic matters. Over the last fifty years, dramatic increases in the volumes of goods and services traded internationally and of currency bought and sold in the foreign exchange markets have led people to see the world in terms of the global economy.

The global economy refers to an open economy where the ratio of exports to output forms a significant proportion of economic activity. The overwhelming majority of economies are more open today than forty years ago. Figure 4.1 shows the growth in export shares between 1960 and 1997. Most countries trade internationally at least 20 per cent of their output. Surprisingly, given the size of its trade surplus, Japan exports only 13.5 per cent of what it produces while the United Kingdom exports 31 per cent.

The growth of world trade has been expanding more rapidly than world output. Figures from the World Trade Organisation (WTO) show that for the period 1973–99, world GDP grew annually at 2.8 per cent while world trade grew annually at 4.3 per cent. As world trade has been increasing so too has the importance of regional trade arrangements. Regional trading blocs are particularly important in Western Europe, North America and East Asia. Intra-regional trade accounts for over 50 per cent of total exports in the European Union (EU) and in the North American Free Trade Agreement (NAFTA).

Neighbouring countries have always traded with each other but the tendency in recent years has been to make such arrangements more formal. Regional trading agreements can take several forms.

- Free trade areas agree to reduce or abolish trade restrictions between member countries while allowing members to impose their own separate trade restrictions against non-members.

After completing this chapter you should be able to:

- explain patterns of international trade and the sources of international specialisation;
- identify the international movement of factors of production and the role of transnational companies in this process;
- identify and explain the concept and consequences of globalisation for businesses and national economies;
- explain the concept of the balance of payments and its determinants;
- distinguish between different exchange rate regimes and explain their implications for the business sector;
- identify the main elements of national policy with respect to external economic relations, specially in the context of regional trading blocs.
Custom unions encourage free trade among members but erect a common external tariff on imports from non-member countries.

Common markets are similar to custom unions but include the free movement of factors of production as well as trade.

Economic unions take the development of a common market even further by encouraging the harmonisation of national economic policies, such as competition policy, financial regulations, product standards.

The best known regional trading bloc is probably the EU. It came into being in January 1993 having taken the place of its predecessor the European Economic Community (EEC) which had been founded in January 1958. In 2002 it has 15 member countries with a population of 375 million and accounts for 42 per cent of world trade. It has its own central bank, its own currency, the euro, and its own budget. It is by far the most advanced example of an economic union in the global economy.

Arguments abound regarding the effects of regional trading blocs.

- Their supporters say that they encourage trade creation by harmonizing economic policies and standards within member countries and reducing prices as trade restrictions are removed.
- Opponents state that they lead to trade diversion. Member countries buy within the regional trading bloc when cheaper sources are available outside.
- Common external tariffs can encourage a regional fortress mentality which can lead to conflicts between different regional trading blocs. For example, NAFTA has complained over the EU’s agricultural imports while the EU has complained over NAFTA’s restrictions on steel imports.
- The fear is that regional trading blocs could lead to the development of protectionism worldwide at a time when the WTO is seeking to create free trade.

The WTO was created in January 1995 and took over the role of the GATT. GATT was established in 1947 and held a series of negotiations to reduce trade protectionism. The last round of negotiations, the Uruguay round, ended in December 1993 and dealt with 28 separate areas of agreement to facilitate free and fairer trade. The WTO’s fourth ministerial conference at Doha in November 2001 decided to launch a new round of trade

![Figure 4.1 Trade ratios: exports as a percentage of GDP](source: IMF)
liberalisation underpinned by commitments to strengthen substantially assistance to build capacity in developing countries. Early negotiations broke down over a range of issues, including agriculture protection, but the WTO hopes to resume the round in 2005. The WTO has 142 members who account for 90 per cent of world trade. It exists to reduce barriers to international trade in both products and services and to prevent discrimination in trade. The WTO has examined more than 200 cases of unfair trading practices and has the power to enforce binding arbitration on its members.

4.1.2 Foreign exchange market transactions

Globalisation is not restricted to international trade in goods and services. It also includes transactions on the foreign exchange markets. In 2001 on an average trading day in the foreign exchange markets, currency valued at £1.8 trillion was traded. Most of this trading finances international capital flows rather than trade in goods and services.

Given the magnitude of these figures, one can clearly see why the global economy forms an integral part of the economic environment. An important agent in this global economy is the multinational or transnational corporation (MNC/TNC).

4.1.3 Multinational corporations: definitions

A multinational corporation is one which owns or controls production or service facilities in more than one country. A corporation does not become multinational merely by trading internationally, for example, by exporting its products from its home country.

MNCs can be ranked according to the amount of foreign assets they control. When ranked in this way the United States accounts for six of the ten largest MNCs. Such MNCs are mainly found in the petroleum, automotive and electronics/computing sectors.

Alternatively MNCs can be ranked according to a transnationality index. This is a composite index that is calculated as the average of the following ratios: foreign assets/total assets; foreign sales/total sales; foreign employment/total employment. This index gives a different ranking to the one based solely on foreign assets. It is a better indicator of the extent to which a corporation operates outside its home country.

Many firms with a high ranking in this index come from smaller countries with a restricted domestic market and it is dominated by European Union countries.

4.1.4 Size of MNCs

The United Nations estimated that in 1998 there were approximately 53,000 MNCs with around 440,000 foreign affiliates. Their sales revenue accounts for about 31 per cent of world GDP and half of the world’s largest economic units are MNCs rather than nation states. MNCs account for around 30 per cent of GDP in the United Kingdom and almost half of manufacturing employment. Foreign MNCs operating in the United Kingdom account for 23 per cent of output and 11 per cent of all employment. The United Kingdom is a major recipient of inward direct foreign investment (DFI). For example, in recent years 30 per cent of all Japanese DFI in the European Union has been in the United Kingdom. Likewise the United Kingdom is a major provider of outward DFI. UK home-based MNCs were the providers of 16 per cent of all DFI in 1997 despite representing only 2 per cent of all MNCs. Thus the United Kingdom is very much part of the globalisation process.
4.1.5 Explanation of MNC activity

There must be advantages for a corporation in establishing a production base overseas rather than trading with foreign companies. It may be that an MNC can gain a cost advantage. Oil companies, such as BP and Shell, vertically integrated backwards to secure control of the oil supplies they needed in oil-fields around the world. More recently, other MNCs have vertically integrated forwards by establishing assembly facilities in countries with an abundance of cheap, high-quality labour.

Other MNCs pursue a policy of horizontal integration in order to gain new markets and expand sales. Quite often such MNCs have gradually switched from exporting to a foreign market to establishing first a sales outlet and finally full production facilities overseas. By producing overseas the MNC can avoid the costs of transporting its products and also bypass any tariffs.

In order to gain the advantages from a foreign production base, an MNC must have the organisational structure to manage the operations. The MNC must be able to exploit those assets internal to the corporation, including human capital, financial resources, marketing and managerial skills. This process has been made more possible by the use of divisional corporate structures based on product and/or geographic characteristics which have helped the management of complex global corporations.

Finally, advances in new technologies have made it easier to conduct business across national frontiers. Communications have improved, with cheaper air travel and the development of satellite- and IT-based communications systems. The globalisation of consumer markets via the media and popular culture has made it cheaper for MNCs to develop new markets in overseas countries.

4.1.6 Impact of MNCs

Any assessment of the impact of MNCs on national economies will need to consider various costs and benefits.

- First, DFI by an MNC should improve economic welfare as capital is transferred to economies where the marginal rate of return on capital is highest. However, MNCs may finance overseas investment by raising the capital on the local capital market. In such cases inward investment may merely displace domestic investment that would otherwise have taken place.
- The involvement of an MNC in a foreign economy may often promote technology transfer which will be of benefit to the recipient economy. New technologies may be introduced without the research and development costs and the learning time which would otherwise have been needed.
- Similarly local producers can copy the superior processes and organisational patterns of the MNCs. The latter may also establish direct linkages with domestic suppliers which raise the productivity of the local producers.
- However, technology transfer may only be at a low level. The MNC may only use the recipient economy as an assembly base using basic technology. Many working practices successful in an MNC’s home economy may not readily transfer to another economy with different cultural traditions.
- MNCs will also impinge on the macro variables of an economy. The balance of payments will gain from inflows of DFI but will suffer when profits from the investment are remitted back to the home economy of the MNC. Employment can also be provided by
MNC activity. Direct employment in the MNC’s subsidiary can be supplemented by further employment in local suppliers to the MNC’s operations.

- However, the employment effects can be weakened if the MNC displaces existing domestic firms. Furthermore MNCs’ operations are mobile and they could well choose to locate in another economy if it proved advantageous to do so.
- Finally, MNCs can affect a government’s taxation and expenditure. MNCs are notorious for being able to reduce their tax liabilities by means of transfer pricing. Where intra-corporation trade takes place, internal prices are set to minimise profits in economies with the highest tax rates. On the other hand, a government often has to offer grants and subsidies to MNCs in order to attract them to their economy.

Consequently the impact of the MNCs on national economies can be profound. To what extent national economies benefit from their relationships with MNCs is uncertain. The growth of globalisation seems unstoppable and with it their power to influence international trade.

### 4.2 Trade

#### 4.2.1 The benefits

Britain is a trading nation, because of its location and history. International trade is necessary when a nation such as Britain specialises, so that its surpluses can be exchanged for the excess output of other countries. In theory, free trade between nations is desirable, but often in practice various forms of protection are used.

Specialisation benefits world trade, because it enables different nations with differing skills and resources to gain the rewards from the division of labour. In theory, nations specialise in the production of goods for which they have a natural advantage. For instance, Saudi Arabia extracts oil, Argentina rears beef and Britain provides financial services. Specialisation usually enables an industry to benefit from large-scale production and make the maximum use of resources. The economies of scale which can be obtained are determined by the size of the market. As international trade opens up new markets, it facilitates economies of scale. Such efficiency has benefits for the trading economies because it should produce lower prices and better products, leading to improvements in general living standards.

World trade, particularly free trade, should foster competition. A domestic market which is controlled by a monopolist might be subject to a foreign competitor. Alternatively, the market of a few complacent home suppliers might be revitalised by the entry of foreign firms (e.g. Japanese and American companies in British consumer goods industries). Such competition will usually benefit the consumers through lower prices and greater choice. The increased choice which results from international competition is particularly evident in the British car industry. However, it must be noted that these benefits perhaps need to be set against the loss of employment in domestic industries.

#### 4.2.2 The theory

The theory of comparative advantage was devised by David Ricardo to demonstrate the gains from specialisation and free trade. The theory requires the following simplifying
assumptions:

- two trading economies each producing the same two goods;
- the factors of production in each economy are perfectly mobile;
- there are no trade barriers and no transport costs;
- the state of technology is unchanged.

The ‘before’ section of Table 4.1 shows the output of each economy when resources are allocated equally between the production of each good. However, as A is more efficient at producing Y and B is more efficient at making X, then specialisation by A in Y and B in X leads to increased total world output. This has been achieved without the use of more resources and represents increased efficiency. Both nations will benefit if trade takes place. For instance, A could trade 80Y for 40X produced by B. This would give A 120Y and 40X, while B would have 140X and 80Y – so both nations would gain, although B perhaps more so at this exchange rate.

In the above case, each nation had an absolute advantage in the production of one good and specialisation and trade was fairly obvious. However, Ricardo showed that even where one nation had an absolute advantage in producing both of the goods, specialisation could still be mutually beneficial. The principle of comparative advantage explains this.

Country A is more efficient in producing both X and Y. However, B is relatively better (less worse) at producing X. If A and B then specialise where each has a comparative advantage, A produces 160Y and B produces 180X. The total output of goods is raised but there are now fewer X than before. Therefore, if A devotes one-fifth of its resources to the production of X and four-fifths of its resources to making Y, then the total output of both goods is increased, as shown in the ‘after’ section of Table 4.2.

If the opportunity cost ratios were identical in A and B, and B could produce 72Y, then nothing would be gained by specialisation and trade. The principle of comparative advantage

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advantage relies on each country having different opportunity cost ratios. If the production possibility frontier is drawn for each country and the two lines are parallel, then specialisation and trade will not be mutually beneficial. However, in practice, economies of scale could occur with specialisation, thereby changing the opportunity cost ratios and facilitating trading gains.

Several conditions are necessary for international trade. In addition to transport and peace, exchange rates need to be established. Each country needs to determine a price for its exports, and this usually reflects the cost of resources used. Thus in Table 4.2 country A uses fewer resources in producing each X than each Y, and we would expect X to be cheaper (approximately four-fifths of Y’s price as four-fifths of resource is required). Conversely, in country B, Ys are very expensive, needing a lot of resources for their production (nine times what is needed for X). Thus domestic prices reflect opportunity cost ratios.

The domestic prices section of Table 4.3 gives monetary values to the goods produced, showing that X is priced at £100 in country A and DM40 in country B, and Y is priced at £125 and DM360. This gives price ratios of £1 = DM0.40 for X and £1 = DM2.88 for Y. As long as the exchange rate falls within these limits, trade will occur because both economies can gain. If the exchange rate were £1 = DM1.50, then country A could import X for £26.66 (price DM40 in country B = £26.66 when exported to A at this exchange rate) as shown in the ‘price to import’ section of Table 4.3. This price is cheaper than the domestic price and a clear gain if country A imports it from B. At the exchange rate of £1 = DM1.50, A might import 80X, because with specialised production it has fewer X and more Y. With the £2,133.33 which country B receives for selling these 80X, it could buy 25Y (at £83.33 each) because it has not produced any Y, because of specializing in the production of Xs. Table 4.4 illustrates the final consumption after exchange and shows that both A and B now each have more X and more Y.

The theoretical gains from free trade based on comparative advantage forms the basis of why GATT and the WTO have sought to dismantle restrictions on trade.

**Terms of trade**

International trade is influenced by changes in relative prices. The terms of trade show such price changes, which result from either changes in domestic prices or changes in the exchange
rate or both. For instance, in Table 4.4, if country A became more efficient in producing $Y$ and its price fell to £100 and the exchange rate fell to £1 = DM1.25, then B could import Ys for DM125, rather than DM187.5.

The terms of trade indicate the relationship between the *average price* of a nation’s exports and the average price of its imports. In each case the average price is *weighted* according to the volume of trade in the different goods and it is expressed through an index number.

The *measurement* formula is:

\[
\pi = \frac{\text{Index of export prices}}{\text{Index of import prices}} \times 100
\]

This ratio is taken as 100 in the base year. Britain’s terms of trade index was 98.2 in 1991 (1985 = 100) but had risen to 102.5 in 1998.

A rise in the ratio is described as an *improvement* because export prices are rising faster than import prices and this means that fewer exports need to be sold to pay for each import. However, this supposedly favourable movement in the terms of trade indicates a *worsening of the competitive position*. As export prices rise, the quantity demanded will probably fall (depending on the elasticity of demand), while cheaper imports may mean a loss of market share for home producers, and possible unemployment.

However, the terms of trade are only a guide to competitiveness because they only measure visible trade (i.e. trade in goods). Trade in services is not included, while non-price factors, such as the quality of products, are not evaluated in the index.

### 4.2.3 Practical limitations

The advantages which can be gained from specialisation and international trade may be limited in practice by many of the following:

- **Factor immobility.** Free trade theory assumed that factors were perfectly mobile, thereby enabling resources to be shifted between different sectors of production. In the real world, factors tend to be fairly immobile in the short run, and over longer periods in some industries, for instance, coal. However, improved technology has lowered factor costs and thereby facilitated more international trading.

- **Transport costs.** The simplifying assumption of no transport costs is clearly unrealistic too. Although the production of certain bulky intermediate goods, such as cement, may be cheaper abroad, the distribution costs are so great that domestic suppliers still have a stranglehold over the market. Interestingly, coal imports into Britain increased only when the miners’ strike of 1984–85 curtailed domestic production and made importing viable to coal users, when previously it had been uneconomic. However, generally transport costs in world trade are falling, thereby stimulating trade.

- **The size of the market.** Specialisation and the resultant possible economies of scale are only justified if the production can be sold. The attempts to build a British computer industry between 1975 and 1985 floundered largely because the domestic market was too small to sustain the research needed for competition with international giants, such as the Americans. In 1985 the sale of Inmos to America recognised this failure.
As the standard of living improves around the world so the sizes of markets grow. Generally, the development of new products, particularly in fields such as micro-electronics, encourages world trade, as it creates new markets.

- Government policies. Governments may install barriers to trade for political, economic and social reasons. For example the United States prohibited firms from supplying goods for the USSR's Siberian pipeline in 1985, and Britain had restricted its arms sales. The methods of trade restriction used are outlined in the next section.

4.2.4 Trade protection

The reasons for protection

- To protect employment. The free trade theory assumes that factors of production are mobile, but in reality they are not so. Therefore, if a nation with an absolute or comparative advantage successfully exports a good (e.g. Taiwan textiles) thereby causing redundancies in a recipient nation (e.g. Britain), workers may become unemployed. The de-industrialisation of the British economy has created extensive localised unemployment because many of the redundant are not adaptable to the alternative service sector. In addition, there are insufficient jobs in the ‘new’ industries. For instance, the decline of the textile industry caused the British government to support the multi-fibre agreement (since 1975), which has restricted the import of cheap textiles into Europe so that jobs can be, at best, maintained or, at worst, only gradually shed.

- To help an infant (sunrise) industry. The classic argument for protection is that new industries require help during their infancy because of the high initial costs and lack of economies of scale. If this help was not provided and they had to face competition from fully developed similar industries, it is claimed that these industries might not survive. Import controls might enable a new industry to build a solid domestic base and benefit from economies of scale before embarking upon international competition.

- To prevent unfair competition. A government may justify protection by reference to the trading policies of its competitor nations. For instance, certain third-world producers try to sell fake British goods in Britain. These imitations break the copyright and patent laws in purporting to be of British origin, and are justifiably banned. Another unfair practice, which is not illegal, is dumping. This involves selling exports at artificially low prices, in order to gain a start in foreign markets. For instance, Japanese excavators were sold for export at 45 per cent of the production cost. The losses abroad were subsidised by profits at home. Furthermore, the larger output, because of increasing exports, enabled economies of scale to be attained and unit costs lowered.

Unfair trading can be more subtle than either of the above two varieties. Governments often subsidise their industries to enable them to compete in world markets, and Britain is not without its critics for giving such help to farming. Clearly, it is very difficult to decide objectively what constitutes ‘fair trading’.

- To protect the balance of payments. One remedy suggested for persistent balance of payments deficit is the use of import controls. This has been advocated to enable Britain to rebuild its industries, before embarking again on world markets. It is argued that domestic expansion leads to large increases in imports, because of Britain’s high marginal propensity to import. The result is that frequent payments deficits have caused deflationary domestic policies, which inhibited domestic investment and weakened British industry. In addition, the rise in imports has reduced the market share of British firms, thereby making them less viable and less optimistic.
• **To raise revenue.** Protective tariffs will raise revenue for the Exchequer if such duties are levied on goods with inelastic demand.

• **To maintain security.** Essential products may be produced at home even when foreign goods may be more efficient, for example, defence equipment.

**Arguments against protection**

• **Inefficiency is encouraged.** If British firms are protected from competition they may settle for their existing market share and profits. Such complacency will discourage innovation and risk-taking. New technology may not be introduced and overmanning may persist. The protected industry (e.g. the textiles industry) may lobby to make temporary help permanent.

• **Resources are misallocated.** By maintaining existing patterns of trade, resources do not move from declining industries, which are protected, to expanding industries. In addition, protection for one industry (e.g. steel) may adversely affect another (e.g. buyers of steel) because unit costs are raised.

• **The cost of living is raised.** Protection will probably raise prices and so domestic consumers have to pay higher prices for (the taxed) imported goods or for (the protected) home-produced goods. Higher prices lower the consumer surplus.

• **Welfare gains will be lost.** The welfare gains resulting from specialisation-trade-exchange will be restricted if exchange is proscribed by protective measures. Ironically, it may be because a nation feels that it is not gaining enough of the global increase in welfare that it imposes trade restrictions. These restrictions may reduce consumer choice and increase the cost of living.

• **Retaliation may occur.** Protection by one nation may provoke its trading partners to take similar action, and this will reduce the volume of world trade with the attendant consequences outlined above. This may weaken confidence, as the internationally accepted rules for trading are weakened when governments take unilateral action.

**The methods of protection**

• **Tariffs.** The most common import control is the tariff. This tax may be *ad valorem* – a given percentage of the import price – or *specific* (a set amount per item). It is sensible to levy tariffs on imports with an elastic demand if the objective is to reduce the volume of imports (e.g. the 33 per cent tariff on Japanese excavators in 1986). However, if a tariff is imposed in order to raise revenue, then goods with inelastic demand should be chosen. Tariffs, therefore, act on the price of goods/services.

• **Quotas.** In contrast, quotas are restrictions on the *quantity* of imports. The General Agreement on Tariffs and Trade (now the World Trade Organisation) has tried to stop quotas, although it does permit exceptions for nations with severe balance of payments difficulties. A more acceptable and modern type of protection which aims to limit the amount of a certain good being imported is the *Voluntary Export Restraint Agreement* (VERA). In 1991 the EC applied a VERA to the Japanese car industry, which was supposed to have halted its exports to Europe when sales of Japanese cars exceeded 16 per cent of the market.

The EEC signed an agreement with Japan in 1983 establishing a VERA for videotape recorders, setting quantity and price controls on Japanese exports. In addition, EC members have negotiated VERAs with developing nations such as Taiwan, South Korea and Brazil.
Hidden restrictions. Also, there are hidden import restrictions and procedures which can be utilised to subtly undermine foreign competition. Administrative devices include complicated forms, special testing regulation and safety certification, unusual product specification and the specialisation of customs posts. For instance, the colour of yellow Trebor Refreshers had to be modified for sale in Japan because they were considered an optical health danger. Such devices may frustrate exporters and thereby protect domestic producers from imports. They are a relatively modern development in world trading and have accelerated since 1973. For example, in 1989 the EC banned hormone-fed meat from America for health and safety reasons.

In addition, the British government like others has used official persuasion to exclude imports; for example Ford Motor Company reduced the imports out of its European factories from 50 to 30 per cent of its UK sales because of government pleas. Public procurement can also be used to assist domestic firms. Government departments may deliberately buy goods from British firms even though they may not be the ‘best on the market’ (e.g. computer software for the Inland Revenue in 1993).

Subsidies. As well as restricting imports, governments often encourage exports by various means. The systematic use of export credits and official support for export deals by departments is increasingly becoming as part of Britain’s trading strategy. Such measures make exporting cheaper and easier; a theme which is furthered by the government-sponsored international promotions and exhibitions.

However, the most blatant help given to exporters is the direct subsidy, for example, the subsidies given by both national governments and the European Commission to European steel firms. This is outlawed by the WTO and so done in more subtle ways nowadays. For instance, VAT on exports is refunded by the British Government to the producers. Similarly, some European governments subsidise domestic producers. For example, Germany gives subsidies on electricity which indirectly helps German manufacturers’ costs of production.

International friction has increased because of the expansion of protectionism. There is friction between governments (e.g. between countries of the EC over beef and livestock movements), and between governments and trading blocs. The EC is often in dispute with the United States over steel and agriculture exports and with Japan over many manufactured goods. The procedures and ethics of GATT and the WTO have been undermined by trade intervention, and GATT’s weakness made world trade expansion less sustainable, but the WTO seems to have more teeth.

Exercise 4.1

Answer the following questions based on the preceding information. You can check your answers below.

1. International trade is based on which principle?
2. What is the difference between absolute advantage and comparative advantage?
3. Why are exchange rates important?
4. What are the terms of trade?
5. What factors inhibit international trade?
6. Give three arguments for trade protection policies.
7. What is a VERA?
8. What does the WTO attempt to do?
9. Why have some companies become multinational in structure?
10. How can multinational companies benefit national economies?

**Solutions**

1. International trade is theoretically based on the theory of comparative advantage.
2. Absolute advantage occurs where one country is much better than another at producing one good (but much worse at producing a second good). However, a country with a comparative advantage is one which is much better at producing two (or more goods) but by different amounts.
3. Exchange rates facilitate pricing and this enables international comparisons to be made.
4. The terms of trade refers to the average price of exports compared with the average price of imports.
5. International trade is inhibited by transport costs, the immobility of factors, market size and protective policies.
6. Protection is used to protect employment, help infant industries, prevent unfair competition and help the balance of payments.
7. Voluntary export restraint agreement.
8. The WTO tries to reduce tariff barriers and other protective measures.
9. To reduce costs and expand markets and sales. This has been helped by the development of appropriate organisational structures and technologies.
10. Direct foreign investment can boost: domestic capital fund; technology transfer; improvement in production processes and organisational structures; employment gains.

**4.3 Foreign Exchange**

**4.3.1 Exchange rates**

The exchange rate of a currency is a *price*. It is the external value of a currency expressed in another currency, for example, £1 = $1.60. A more complex measure expresses the value in terms of a *weighted average* of exchange rates as an index number. These are currencies of a nation’s main trading partners in manufactured goods and collected in a representative basket. This is known as the *effective* exchange rate and shows the relative importance of the country as a competitor in export markets. Britain’s effective exchange rate has fluctuated since the new indexing in 1985. A fall in the index shows an overall relative depreciation of a currency. Thus in March 1996 it had fallen to 78.2 after sterling’s exit from the ERM, and fell to DM 2.22 from DM 2.75 but by July 2000 had risen again to DM 3.30.

The exchange of currencies is vital for trade in goods and services. British firms selling abroad will require foreign buyers to exchange their currency into sterling to facilitate payment. Similarly, British importers will need to pay out in foreign currencies. Also, when funds are transferred between people in different countries, foreign exchange is required. Today, the sale and purchase of currencies for trading purposes is dwarfed by the *lending* and *borrowing* of funds.

The *internal* and *external* values of a currency are different. The former refers to the purchasing power of a currency at home. Inflation lowers the internal value. The external value is not affected by domestic inflation directly, but it changes with variations in other
nations’ exchange rates. These variations reflect the demand for and supply of currencies on foreign exchange markets. In turn these tend to reflect trade performance.

### 4.3.2 The Foreign Exchange market

This market enables companies, fund managers, banks and others to buy and sell foreign currencies. Capital flows arising from trade, investment, loans and speculative dealing create a large demand for foreign currency, particularly sterling, US dollars and euros and typically deals worth £300 billion are traded daily in London, the world’s largest foreign exchange centre. London benefits from its geographical location, favourable time intervals (with the United States and the Far East in particular) and the variety of business generated there – insurance, commodities, banking, Eurobonds, etc.

Foreign exchange trading may be spot or forward. Spot transactions are undertaken almost immediately and settled within two days. However, forward buying involves a future delivery date from three months onward. Banks and brokers, on behalf of their clients, operate in the forward market to protect the anticipated flows of foreign currency from exchange rate volatility. The forward price of a currency is normally higher (at a premium) or lower (at a discount) than the spot rate. Such premiums (or discounts) reflect interest rate differentials between currencies and expectations of currency depreciations and appreciations.

As the foreign exchange market has grown, so other instruments such as futures and options have been developed to protect foreign exchange commitments. Currency futures involve the trading of forward transactions other than for currencies themselves, while currency options enable buyers (at a premium paid to the writer of the option, usually a bank) to guarantee a buying (or selling) price for a currency at a future specified date.

### 4.3.3 Exchange rate systems

**The gold standard**

In the nineteenth and early twentieth centuries, exchange rates were fixed in terms of gold. A balance of payments surplus earned gold while a deficit meant a loss of gold reserves. This mechanism caused automatic adjustment. In theory, a trade deficit led to a gold outflow which produced domestic money contraction and thus deflation. The deflation lowered prices, thereby making exports more competitive and restoring the balance of payments to equilibrium.

The gold standard assumed the quantity theory of money, flexible and quickly adapting prices (and wages) and sufficient gold reserves. Lack of the latter prompted Britain to leave the gold standard in 1925 and adopt a partial gold standard until 1931. As world trade continued to expand faster than gold production, the central importance of gold reserves diminished. Other currencies such as sterling and the US dollar became acceptable means of paying trading debts, as they were valued in terms of gold. In addition, the adjustment mechanism’s slowness and the difficulty of lowering prices and wages meant that the deflation caused by a gold outflow was concentrated in lower output and the related higher unemployment.

The new reserve currencies were acceptable instead of gold, while their economies were strong and stable. The expansion of world trade depended on the liquidity which these currencies provided. However, increased liquidity was only produced by British (and American) balance of payments deficits, which ironically undermined confidence in the
reserve currencies. When the external holdings of the pound exceeded Britain’s gold reserves, holders of sterling lost confidence and rushed to convert their pounds into gold. The British government, fearing that the reserves would be vanquished, took the pound off the gold standard, to protect its remaining gold reserves. From 1931 to 1947 the pound floated. This meant that its value was determined by demand and supply.

**Managed exchange rates**

A system of fixed exchange rates was established at Bretton Woods (United States) in 1944. Each rate was allowed to fluctuate within a 1 per cent band either side of its parity in order to give some flexibility. In addition, a country could change its rate if it suffered a ‘fundamental disequilibrium’ on the balance of payments. Britain devalued the pound from $4.03 to $2.80 in 1949 and then from $2.80 to $2.40 in 1967. In general, if a country’s inflation exceeded its rivals’ inflation, that country devalued its currency. The idea of the new system was to obtain greater stability than during 1931–47 when exchange rates were floated and more flexibility than when the gold standard operated.

Although essentially fixed, this exchange rate system became termed ‘managed’ because of the role which it allowed for government intervention. A central bank would act on behalf of the government to buy and sell currency to stabilise the exchange rate within its zone of flexibility. For instance, if sterling was nearing its floor value because of a balance of payments deficit, the Bank of England would use some of its reserves to buy pounds on the foreign exchange market, thereby artificially stimulating demand. In Figure 4.2 a balance of payments deficit is caused by a fall in export revenues, which is represented as D1. This has pushed sterling towards the floor of the exchange rate band (£2.38), thereby prompting the Bank of England to buy £Q1Q through the exchange equalisation account.

In contrast, when the exchange rate moved towards its ceiling (£2.42), sterling would be sold and foreign currency reserves, mainly dollars, would be replenished. Alternatively a government could affect the exchange rate by use of interest rates. Interest rates would be raised to attract foreign capital into a country, thereby raising the demand for its currency. If it was desired to reduce the exchange rate, interest rates would be lowered and with it the demand for the currency by foreign investors, leading to a fall in the exchange rate.

However, the system worked well only during periods of low inflation. Once divergent rates of inflation began to appear, there was pressure on governments with high inflation to devalue their currencies rather than deflate to rectify the balance of payments deficits.

![Figure 4.2 A managed exchange rate](image-url)
which their lack of export competitiveness had caused. Also, confidence in the main reserve currency, the US dollar, fell as dollar holdings exceeded American gold reserves. Speculation against the dollar, similar to that against the pound in 1931, led to the dollar’s convertibility into gold being ended, and the dollar being floated. Although there was a brief attempt to re-establish a fixed exchange rate regime, the floating of the pound, which was the other key reserve currency, in 1972 signalled the end of the Bretton Woods ideal.

**Exchange rate mechanism**

The Exchange Rate Mechanism (ERM) was that part of the European Monetary System which required member states to keep the external value of their currencies within specified bands. It was, in effect, a fixed exchange rate system within the European Union. Most members of the EU were members of the ERM; Britain joined in October 1990 but was obliged to leave in September 1992 when it could no longer maintain sterling within its prescribed band. Most experts agree that this was because Britain joined the ERM at a rate which seriously overvalued sterling relative to other European currencies, especially the mark.

In this system the currencies were fixed against one another via a *European currency unit*, based on a basket of the participant currencies. However, the system was very dependent on Germany’s currency as the major trading nation. There was a 2.25 per cent band of flexibility, although the lira had a 6 per cent limit. However, after Britain’s exit and speculative pressure on other currencies, the bands were widened to 15 per cent in 1993 (with the plan to return to 2.25 per cent bands in January 1994. This was deferred).

Until 1993, ‘the zone of monetary stability’ seemed to work. There were some minor exchange rate adjustments but generally the stability promoted confidence, reduced trade uncertainty and helped to keep inflation lower in Europe. However, ultimately it fell to speculative pressure, which was encouraged by financial deregulation and the ending of exchange controls since 1979.

**Floating exchange rates**

Exchange rates that float are flexible and free to fluctuate in the light of changes which take place in demand and supply. Such exchange rates are examples of nearly perfect markets.

(a) **Theory.** The simple theory assumes that a currency is only demanded and supplied for trading purposes, and that the curves are elastic. The demand curve for a currency shows the amount that traders wish to buy at various rates of exchange. This demand is higher at low exchange rates, in the normal way. The demand for pounds is a derived demand, reflecting the demand for British exports. A fall in the exchange rate will increase the competitiveness of exports and thereby raise the demand for pounds, assuming elastic demand for exports. In contrast, the supply of pounds represents the demand for British imports. This is because pounds are needed to buy the foreign currencies required to pay for the imports.

In Figure 4.3, a fall in the demand for British exports causes a shift to $D_1$. This shift causes a fall in the exchange rate to $P_1$, assuming that the demand for British imports remains unchanged. $P_1Q_1$ would be a new equilibrium position at which the demand for pounds and the supply of pounds are equal. If pounds are bought and sold just for trading purposes, exchange rate equilibrium also produces balance of payments equilibrium. Nevertheless, changes in the non-price competitiveness of British goods and
other countries’ goods will cause disequilibrium. However, unimpeded floating exchange rates theoretically restore equilibrium automatically.

(b) Practice. The exchange rates, which have floated since 1972, are subject to influences other than trade.

Deposits of money can be transferred from one currency to another at short notice. This clearly affects the demand for, and supply of, currencies. The main factors influencing such transfers of what has been called ‘hot money’ are:

- relative interest rates – if the differential between nations changes, then capital tends to move towards the nation whose interest rate offers the most lucrative return;
- expectations – if the holders of ‘hot money’ expect a currency to appreciate, they will deposit money in that country, as the appreciation will raise the exchange value of the deposits;
- inflation – countries with relatively high rates will find their currency less attractive to depositors because its value is depreciating more than that of other countries.

Often, currencies are bought and sold for speculative motives. Speculators are interested in short-term capital gains. For instance, if a currency is backed by significant national assets, such as oil reserves, and sustained in attractiveness by high interest rates, it could be much demanded. This might override the demand for a currency for trading purposes and produce an exchange rate which does not reflect trading conditions. If this persists and the currency is higher than the underlying economic circumstances warrant, then it might be deemed overvalued. Thus, the simple theory does not apply in practice, as market forces can be distorted and exaggerated.

Furthermore, in the real world the demand and supply elasticities for goods and services, as well as currencies, are not perfectly elastic. A foreign exchange rate will tend to be unstable when the supply curve is more elastic than the demand curve. Thus, only in theory are floating exchange rates inherently self-stabilising.

**Dirty floating**

A further complication is the intervention which central banks sometimes undertake. This is usually to maintain or achieve an exchange rate target, which is usually unofficial. The authorities will buy their own currency to keep the exchange rate up, and sell to cause depreciation. In Figure 4.3 the fall to P₁ could be reversed if the Bank of England bought Q₁Q pounds, thereby restoring demand to D. Such attempts to manage the flexibility of floating rates have been termed dirty floating.
Governments may adopt unofficial exchange rate targets because exchange rates affect competitiveness and inflation. The government allowed market forces to determine the exchange rate in 1979–85, from 1985 they tried to stabilise sterling by intervention. Thus there developed a DM3 target and a shadowing of the deutschmark until ERM entry in October 1990. Unfortunately, the main effect was to keep the pound overvalued. British industry lost competitiveness because of this and also suffered from the high interest rates required to sustain the overvalued exchange rate. The only benefit was the reduction in import prices which assisted in the control of inflation.

4.3.4 Arguments for floating rates

(a) In theory, the floating rate automatically adjusts a balance of payments disequilibrium. This was explained above. The self-correcting mechanism means that policies, such as deflation, to rectify a balance of payments deficit will not need to be implemented. This gives a government greater freedom to pursue domestic policies.
- However, it can be countered that demand and supply inelasticities, the activities of speculators and the behaviour of government prevent this adjustment from occurring in the real world. The persistent over-valuation of the pound during the 1980s was evidence, for opponents of floating exchange rates, of the damage which can result (i.e. de-industrialisation).
- In addition, it can be argued that the freedom leads to reckless irresponsibility. A government may assume that a floating exchange rate will solve an inflation problem and so not pursue necessary domestic policies, which maintenance of a fixed exchange rate might have forced on them, thereby worsening the inflation problem.

(b) Less speculation will occur because a currency can appreciate or depreciate, whereas in the fixed rate regime changes were nearly always devaluations. This meant that speculators, who sold the currency which was devalued, could not lose and they could gain. For instance someone holding £1,000 at £1 = DM2.7 moves into DM, securing DM2700 (assuming no transaction costs). If sterling is devalued to £1 = DM2.4 his/her DM holding is now worth £1,125 if he wishes to switch back into pounds in order to make a capital gain. Conversely, if pounds are not devalued, he can switch back and still have £1,000 and no loss. Such speculative behaviour led to the removal of sterling from the ERM. Raising of interest rates in two stages during one day from 10 per cent to 15 per cent was enough to deter sales of sterling.

(c) A more efficient allocation of resources is secured if exchange rates reflect changed economic conditions. It is argued that floating rates will reflect changes in demand and supply, and that they are more sensitive and respond quickly to underlying economic trends. This might enable the theory of comparative advantage to be operative. As floating rates change daily, they are more subtle but probably at the cost of greater volatility.

The rapid fluctuations in sterling’s value in 1980 were very destabilising and probably caused by short-term factors rather than fundamental changes. Furthermore, such rapid changes cause uncertainty. This could deter trade, as contracts with fixed prices become more risky because an exchange rate appreciation will cut profit margins. However, to some extent this problem can be offset by buying a currency in the forward market.

(d) A large supply of reserves is unnecessary in a floating system because the automatic adjustment of a balance of payments deficit (or surplus) is achieved by an exchange rate depreciation (or appreciation). In theory, reserves will be automatically maintained.
and so domestic policy changes such as interest rate increases will not be needed to keep the exchange rate up.

In practice, nations keep reserves so that a run on the currency can be stemmed. For example, in August 1993 when there was speculation forcing the French franc beneath its ERM floor value, the Bank of France used up all its currency reserves.

The arguments against floating rates have also been implied above, as the arguments for fixed rates have been discussed. Clearly, the arguments against floating rates correspond with the points made in favour of managed exchange rates. These were outlined earlier and will also feature in the section on the European Monetary System.

4.3.5 Exchange rate changes

Long-term theory

There are three main theories which attempt to explain the underlying reasons why exchange rates change over time:

(a) Purchasing power parity (PPP). This theory maintains that exchange rates will tend towards the point at which their international purchasing power is equal. Thus, if one country’s inflation increases 5 per cent more than another’s in one year, the former’s exchange rate would depreciate by 5 per cent. This would restore the former country’s international purchasing power in theory.

However, there are several problems with the use of this theory:

- **Inflation measurement.** the usual measure (RPI) includes goods and services (e.g. housing) which are not internationally traded, and indirect taxes which only change domestic prices. This limits its usefulness. As an alternative measure of competitiveness unit wage costs have been suggested. However, unless they are taken just for manufactured goods, allowances will need to be made for non-tradeable goods and services and public sector employment.
- **Base year.** this choice is arbitrary, unless some very unrealistic assumptions are made about exchange rate equilibrium and inflation stability.
- **Capital movements.** Exchange rates, since the 1980s particularly, have reflected the perceptions and expectations of international financiers, rather than the real trading between economies. The massive transactions of currency relating to borrowing exceed those connected with trade by at least 20 times (some estimates give 100 times), and so it could be argued that exchange rates do not indicate real changes in a nation’s competitiveness. The massive rise of sterling from $1.75 to $2.50 in six months of 1980 was against a background of dwindling manufactured exports and rising domestic inflation.
- **Empirical evidence.** If PPP holds true then the ‘real exchange rate’, which is the nominal rate adjusted for differential inflation, should remain roughly constant. At worst, it should tend towards a long-run equilibrium, and be less volatile than the nominal rate. Research by both Williamson and Morgan Guaranty, using different base years, shows Britain’s real exchange rate persistently well above 100 since 1977, peaking around 150 in late 1980 and plunging to 115 in 1985, that is significantly overvalued.

(b) The Keynesian approach. Keynesians do not see exchange rates as automatically adjusting. They believe that the ‘real exchange rate’ can be in disequilibrium for years. There is not
a PPP equilibrium in the short or medium term because:

- prices may be very slow to adjust to changes in nominal exchange rates (mainly because of the wage market);
- interest rates have a distorting effect on the nominal exchange rate. High interest rates can be used to keep up the external value of the currency. This might enable a government’s anti-inflation strategy to succeed;
- speculators can distort market forces. If they see a price steadily falling, they sell, and it takes a shock to reverse the trend. In recent years, speculation has destabilised the foreign exchange market by following the trend rather than reversing it. The continued overvaluation of the dollar in 1985–86, which was attributable to high interest rates, fat profits and an economic boom, was only undermined by concerted intervention in the market by several major governments, bringing a fall in the dollar in Autumn 1986.

(c) Monetarist theory. Changes in exchange rates reflect changes in domestic money supply conditions (based on the quantity theory of money view of inflation). Thus, if Britain increases its monetary growth by 20 per cent and Japan keeps its growth unchanged, sterling will depreciate against the yen. This means that exchange rates will modify so that home goods are priced at the world equilibrium price. If not, British consumers will buy imports, unless trade is restricted, and eventually force down domestic prices.

Economic growth, by absorbing some of the monetary expansion, will tend to keep the exchange rate up. It will also encourage a currency to appreciate because international financiers will behave rationally (expecting the appreciation) and bring about the appreciation by buying the currency. Thus, supposedly rational factors will determine the exchange rate.

As in other matters, monetarists do not believe in government meddling. However, if a monetarist government has a policy rule of slow money supply growth, then the associated policy of high interest rates to deter the demand for money will probably cause the exchange rate to rise. Interestingly, this might bring about lower inflation, as an appreciating exchange rate reduced import prices. In general, the monetarists believe in the exchange rate, like other prices, being determined by market forces. To them, the exchange rate is ‘just another price’.

Short-/medium-term factors

The demand for the supply of currencies is determined by several economic forces, and some other elements:

- Relative inflation rates. Nations with comparatively high inflation are likely to find their currencies in less demand, other things being equal, because funds transferred will lose their real value more quickly.
- Trade flows. Countries with balance of payments deficits are more likely to suffer depreciating currency because supply of their currency will exceed its demand.
- Investment flows. If foreign investment is attracted to an economy (perhaps by its internal conditions, e.g. low wage costs) then this will stimulate demand for its currency.
- Economic prospects. If the economic forecasts for an economy are bullish, then this will attract footloose international funds, raising demand and enhancing the exchange rate.
- Speculators’ judgment. As 95 per cent of demand is from market makers and dealers, rather than trade customers, if they perceive that a currency is overvalued they will sell, thereby
lowering its rate. Often they react to political as well as economic news which is unexpected, because anticipated events will have already been ‘discounted’.

- **Technical analysis.** Sometimes the charts of banks and brokers indicate future movements of a currency are likely, given the underlying assumption that price movements follow broadly predictable patterns. Such predictions may influence demand.

### 4.4 European monetary integration

#### 4.4.1 Background

The European Union is essentially a regional trading bloc whose members operate within a free trade area. At the time of writing, the European Union has 15 member countries and accounts for approximately 20 per cent of world GDP and 42 per cent of world trade. The Maastricht Treaty in 1992 sought to develop the European Union into an economic and monetary union (EMU). As mentioned earlier, the EMS operated a type of managed exchange rate in the form of the ERM. In 1993 three stages were set down for the transition to full monetary union.

#### 4.4.2 Process of integration

Stage One required closer co-operation between governments in economic and monetary policy formulation. It required completion of the single market so that there were no barriers to trade within the EU. It also involved the strengthening of competition policy and an increase in structural funds to advance regional and industrial development.

Stage Two was to commence on 1 January 1994. A European Monetary Institute (EMI) was set up to strengthen co-operation between EU central banks and to coordinate monetary policy.

Stage Three saw the establishment of the European System of Central Banks (ESCB) which would hold and manage the official reserves of all the member states. At this stage currencies would be fixed and denominated in ECU's which would eventually become the single currency, known as the euro, of the EMU. In order to join the single currency, member states had to fulfil agreed convergence criteria:

- inflation should be within 1.5 percentage points of the average for the three best-performing members for a period of one year;
- government deficits should not exceed 3 per cent of GDP and national debt should not exceed 60 per cent of GDP;
- a 2.25 per cent narrow band for their currency, without initiating a realignment for at least two years;
- long-term interest rates must be within 2 percentage points of the three best-performing states, in terms of price stability, for a period of one year.

#### 4.4.3 Start of the single currency

Eleven member countries began using the euro on 1 January 1999. Two countries, the United Kingdom and Denmark, decided not to seek membership at that stage. On 1 January 2002 notes and coins were issued in euros although the euro had been used for business and electronic transactions since January 1999. National currencies have been
withdrawn in those countries which have adopted the euro though they could be used for a short transaction period. The European Central Bank (ECB) has been established and will have the exclusive right to issue the euro and the responsibility for setting short-term interest rates in the EMU.

### 4.4.4 Assessment of the euro

It is too early to make a fair assessment of the euro as an independent currency. At first its value against other major currencies fell partly because of the weakness of the EMU economies and partly because of uncertainty regarding the political independence of the ECB. However, by 2004 the Euro had recovered strongly against most other currencies, especially the US dollar.

The long-term effects of the introduction of the euro could be profound.

- As goods and services become priced in euros, consumers will be able to see whether prices vary in different countries of the European Union. This transparency should lead to a greater convergence in prices throughout the European Union.
- The removal of different currencies would also lead to the removal of transaction costs incurred when switching from one currency to another.
- For firms, a single currency will remove exchange rate risks within the EMU. This should particularly benefit smaller businesses who often lack the resources and knowledge for foreign exchange hedging. As a consequence intra-EU trade should expand.
- The EMU might also stimulate merger activity as firms seek to operate across the whole of the single market.

However, for the potential benefits of the single currency to be realised, certain factors will be decisive.

- First, the economies of the countries within the EMU must be at the same stage of the economic cycle so that economic convergence remains sustainable.
- Second, the ECB must retain its independence to be able to set short-term interest rates with a view to achieving price stability. It must not be diverted from these objective by political pressure to reflate EMU economies in order to overcome problems of low economic growth and high unemployment. Likewise national central banks must adhere to the intentions of monetary policy as laid down by the ECB.

The major disadvantage of adopting a single currency such as the euro is that member countries of the EMU give up their rights to conduct independent economic policies. Monetary policy is now conducted by the ECB. It uses one interest rate across the whole EMU to keep the rate of inflation at, or below, 2 per cent. The chosen interest rate may not be the same as that which is best suited for the economy of an individual country. One country may require a fall in interest rates as its economy is entering recession while the ECB is raising interest rates as it fears inflationary pressures elsewhere in the EMU. The effects of changes in interest rates may also be different in different economies, with some taking much longer to impact on their economies than others. Constraints have also been put on discretionary fiscal policy by the Growth and Stability Pact of the EMU which requires member states to keep budget deficits to 3 per cent of GDP. The low economic growth rates in the Eurozone economies in 2002 and 2003 have caused countries such as Germany, France and Portugal to exceed this limit. As a consequence a tension exists between those member states who wish to reflate their economies by running fiscal deficits...
and the ECB which requires adherence to the 3 per cent limit so as to support its monetary policy. The introduction of the euro has also meant that individual economies have lost the ability to devalue their exchange rate in order to restore international competitiveness. It is, therefore, of utmost importance that the economies of the EMU be converged and remain at the same stage of the business cycle. Otherwise the centralised operation of monetary and fiscal policy associated with the adoption of the euro will cause serious problems for member countries of the EMU who have given up their ability to pursue independent economic policies according to the circumstances of their own economies.

Exercise 4.2

Answer the following questions based on the preceding information. You can check your answers below.

1. What is the main determinant of the value of an exchange rate?
2. What are ‘managed’ exchange rates?
3. How does the ERM operate?
4. What is the advantage of freely floating exchange rates?
5. What is ‘dirty floating’?
6. What are the underlying reasons for changes in exchange rates in the long run?
7. What criteria were needed for EMU to proceed?
8. What are the advantages of the euro?

Solutions

1. The exchange rate is determined by the demand for that nation’s currency. In theory, this demand is by traders, but in practice it is by international financial institutions.
2. ‘Managed’ exchange rates are where small fluctuations are allowed within certain defined limits and governments (central banks) may intervene to smooth out fluctuations.
3. The ERM requires members to keep their currency values within specified bands around a weighted price.
4. Freely floating exchange rates are self-stabilising in theory and thus automatically rectify a balance of payments disequilibrium.
5. Dirty floating is intervention by a central bank in a foreign exchange market in order to achieve a desired objective (usually a specific exchange rate target).
6. In the long run, exchange rates may reflect their relative purchasing power, or domestic money supply conditions.
7. Agreed convergence criteria needed to be met in respect of inflation rates, government deficits, interest rates and stability of national currencies.
8. Convergence of prices within EU; reduction in transaction costs and hedging costs; stimulus to intra-EU trade.

4.5 The balance of payments

4.5.1 The accounts

The balance of payments is an account showing the financial transactions of one nation with the rest of the world over a period of time. The statistics are calculated monthly and analysed on quarterly and annual bases. The official figures are often revised. This results
from the use of estimates and the problems of information gathering. Clearly the national accounts are difficult to assemble and revisions sometimes occur years later. For instance, the overseas earnings of the Lloyd’s insurance syndicate can only be an estimate until Lloyd’s accounts are published, and these cover three-year trading periods.

Trend changes in the balance of payments can be a useful indicator to the government. For example, the deterioration in Britain’s non-oil visible trade balance caused by deindustrialisation is clear in the accounts. However, they are a lagging indicator and as such of limited value for immediate policy action.

The balance of payments accounts have been organised in various ways at different times. Presently, they are divided into current account and capital account.

The current account

This is composed of two parts.

(a) **Visible trade.** This is trade in goods. Exports by Britain are shown as credits (e.g. machinery sold to Saudi Arabia); while imports are debits (e.g. French perfume sold in Britain). The difference between the totals is known as the balance of trade.

Historically, Britain has run a deficit on visible trade, with the imports of food and raw materials outweighing the exports of manufactured goods. However, in 1980–82 visible trade moved into surplus because of the earnings of North Sea oil and gas. If the non-oil trade balance was calculated for the period, though, only four quarters showed a surplus. From 1983 visible trade returned to deficit and this has increased with the effects of de-industrialisation, as shown in Table 4.5.

(b) **Invisible trade.** This is trade in services and is shown in Table 4.6. The income earned from the sale of British services abroad is known as an invisible export (e.g. consultancy fees paid to a British firm for advice on a Saudi Arabian building project). In contrast, invisible imports arise when British citizens spend money on

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<th>Exports</th>
<th>Imports</th>
<th>Visible balance</th>
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<td>£m</td>
<td>£m</td>
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<td>195,217</td>
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<td>2003</td>
<td>187,846</td>
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foreign services (e.g. a British tourist to Texas pays for accommodation). The invisible account can be considered in three sectors:

- **Interest, profits and dividends (IPD).** This sector shows substantial surpluses (£20 billion in 2002). Interest, profits and dividends are earned from loans made by British institutions, from the activities of the overseas branches of British-based companies and from the holding by Britons of overseas (paper) assets. These earnings are likely to grow because, since 1979, with the abolition of exchange controls and the portfolio investment of the North Sea oil surpluses, British overseas investment by the private sector has increased. Some critics felt that it would be a once-and-for-all adjustment in institutional portfolios, but the expertise acquired by fund managers appears to have stimulated increasing capital outflows.

- **Services.** These have earned a large invisible surplus in most years. The financial services of the City of London dominate this sector, with the earnings of solicitors, brokers, merchants, bankers and commodity traders having a net credit of £14 billion in 2002, although transport and travel have a net debit over of £12 billion.

- **Transfers.** Transfers by both private individuals and the government tend to be outward on balance, with the government’s share being larger and being spent on embassies, military bases and contributions to international organisations, including the EU. This sector produced a debit of over £9 billion in 2002.

**Current account balance**

This combines the visible and invisible trade, as shown in Table 4.7. Generally a surplus balance is a good sign, and can indicate a prosperous and expanding economy. Britain’s current account was in surplus in the early 1980s, but except for 1997 and 1998 has been in deficit ever since.

A deficit is balanced against a net inflow in the transactions in external assets and liabilities account, which is the modern name of the old capital account. However, as changes in the current account affect national income, a deficit means a decrease in spending power (and a net withdrawal from the circular flow), which is deflationary.

**The capital and financial account**

This account shows transactions in Britain’s external assets and liabilities, as shown in Table 4.8. It records capital and financial movements by firms, individuals and governments. It also includes the balancing item. A positive balancing item indicates unrecorded net exports, while a negative total shows unrecorded net imports. Since 1988 Britain had some unusually high balancing items. The figure arises because of the errors and omissions which occur in

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<thead>
<tr>
<th>Year</th>
<th>Visibles £m</th>
<th>Invisibles £m</th>
<th>Current account balance £m</th>
</tr>
</thead>
<tbody>
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<td>1992</td>
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<tr>
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</tr>
<tr>
<td>2003</td>
<td>–47,290</td>
<td>+26,860</td>
<td>–20,430</td>
</tr>
</tbody>
</table>
the collection of such detailed and numerous statistics based on enormous numbers of international transactions.

The movement of funds into Britain (external liabilities) is indicated by positive numbers, whereas outflows of funds are marked with a minus sign (−). This is the acquisition of external assets. For example, the investment by Toyota in British car plants would be an inflow under the direct investment category. Conversely, if a British bank buys shares in a French company this would be included in the portfolio investment overseas by UK residents’ section. An ‘investment’ such as the latter will benefit the balance of payments in the long run as it generates invisible income for the current account. However, it has been argued that it harms the British economy because resources are used overseas and so a leakage from the circular flow is created.

In contrast, net inward investment benefits the balance of payments in the short run because less official financing is needed. It also adds to the circular flow and stimulates domestic economic activity in terms of employment and ancillary production. However, it may eventually be detrimental to the balance of payments because profits from the investment will be remitted abroad and become invisible imports, while the goods produced may supplant British goods in the home market.

The short-term capital movements in the account are the changes in foreign currency and sterling holdings. Such transfers of ‘hot money’ tend to be volatile and unpredictable, fluctuating with interest rate changes and exchange rate variations. The ‘other’ category includes the official resources, private sector transactions with banks, trade credit and inter-government loans. It was calculated that £15 billion of resources were used on ‘Black Wednesday’ in September 1992 to buy sterling in order to try to keep it in the ERM. When devaluation by about 20 per cent did occur, a £3 billion loss in the value of the reserves was sustained.

### 4.5.2 Disequilibrium

Although the balance of payments accounts always balance for technical reasons, economists are concerned with the component parts of the structure. Persistent imbalances in certain sections, such as the visible trade and the current account, indicate fundamental disequilibrium and induce governments to undertake policy action to create/restore equilibrium. For instance, a persistent balance of payments current account deficit may be covered by substantial capital inflows or by a decrease in official reserves. The former may be achieved by higher interest rates for a short period of time, while the latter similarly cannot be undertaken indefinitely. However, this temporary expediency may have
damaging consequences for the economy, such as higher debt repayments, lower investment and a higher exchange rate. Thus, remedial action to deal with a balance of payments problem may constrain policies which are designed to achieve other economic objectives, that is economic, growth via lower interest rates.

Disequilibrium occurs when the balance of payments on current account is persistently imbalanced over several years. In the case of Britain this occurred in the 1970s, when deficits frequently arose. However, in the early 1980s there were annual surpluses, mainly because of North Sea oil. Since 1985 the problem of persistent deficit has returned alarmingly. In 1989 the deficit was 4 per cent of GDP. Furthermore, it was a much larger deficit than it should have been at that stage of the economic cycle. Usually, in an economic downturn, Britain’s balance of payments recovers and moves into/towards surplus, as shown in Figure 4.4.

It has been calculated that if economic growth exceeds 1.5 per cent, then Britain will suffer a balance of payments deficit. However, 1.5 per cent economic growth is unfortunately not sufficient to remove unemployment. This creates a clash between policy objectives.

A deficit demonstrates the uncompetitiveness of British trade. In Britain’s case visible trade in goods suffers a comparative disadvantage, while the service sector with invisible surpluses seems to indicate a comparative advantage. The effect of a deficit is usually to depress the exchange rate and deplete official reserves. Although citizens benefit from a higher standard of living than would have been possible from the consumption of just British goods, this gain is only short term because a lower exchange rate means rising import prices, causing higher inflation and increased uncertainty for business.

**Causes**

(a) Import penetration. This can arise from imports taking larger shares of static markets or from imports maintaining their shares of expanding markets. In Britain’s case both occurred and most sectors of industry experienced substantial import penetration, mainly from Europe and Japan. For instance, 7 per cent of vehicles bought in Britain came from...
abroad in 1970, but by 1979 this had reached 36 per cent. These figures show the increased competitiveness of foreign suppliers.

Import penetration has increased for many reasons.

- The income elasticity of demand for manufactured goods is high in the UK, around +3 compared to 2 in Germany. The income elasticity of demand for all imports is +1.8.
- For many goods lower unit costs in the UK’s trading partners have made imports more competitive than domestic substitutes.
- The periodic overvaluation of sterling, for example in 1980-82 and 1998-2003 reduced the sterling price of imports in the UK market.
- Some UK producers have lacked competitiveness in non-price factors such as design, reliability, delivery and pre and after sales service.

By 1993, the Department of Trade and Industry maintained that Britain was competitive in price terms, because of falling unit labour costs and rising productivity. These had been achieved through the elimination of overmanning and the reduction of wage costs. Nevertheless some people fear that British products still lack quality.

However, the de-industrialisation of the 1980s had struck the manufacturing base. Even among the remaining firms their depleted product base has meant that they lack the variety of goods to sell when the economic upturn begins.

Another cause of the import penetration is Britain’s large consumption expenditure as a percentage of GDP. In the 1980s cuts in income tax, falls in the savings ratio and easy credit all combined to encourage consumer spending. However, from the whole economy viewpoint, Britain would have been better served by putting more resources into investment and exporting.

(b) Export performance. The other main obvious symptom of Britain’s 1970s deficits was the relatively poor export performance. British exports needed to grow disproportionately faster than those of rivals because of Britain’s high importing propensity. However, the factors determining British exports are similar to those affecting the demand for imports.

- First, the willingness and ability of domestic producers to supply abroad. For instance, a growing home market and a lack of surplus capacity will inhibit exporting and lead to concentration on home sales.
- Second, the price competitiveness of British exports. Unfortunately, the short-run price elasticity of demand for British exports has been calculated as less than 0.5.
- Third, the income elasticity of demand in foreign markets. This is much lower than in Britain because other trading economies are less open and their firms tend to have more surplus capacity which can be quickly utilised to raise output for domestic consumption.

Specific underlying problems with Britain’s exports seem to be insufficient investment in new technology, inadequate management and a lack of quality products. Despite productivity improvements, Britain’s overall productivity still lags 30 per cent behind France, Germany and the United States (OECD 1998). Furthermore a report, Made in Britain (IBM London Business School), reckoned that only 2 per cent of UK factories are world class and that at least 40 per cent are beyond hope. There is a big failure to invest in research and development. British companies spend 1.5 per cent of sales revenue on this, compared with 4.6 per cent by the world’s 200 largest companies.

Manufacturing is highly important to Britain’s current account, with around 43 per cent of its export earnings in 1997 coming from trade in manufactures. Since the 1970s the rate of growth of manufacturing exports has been well below that for manufacturing imports.
As a consequence Britain’s share of world manufacturing exports fell from 17 per cent in 1960 to 8 per cent in 1997 (OECD 1998). Some reckon that foreign-owned ‘transplants’ into Britain (e.g. Sony TV in South Wales, etc.) will act to bring British component makers up to the quality and delivery standards of our main trading rivals. However competition from newly industrialised countries may make this difficult to achieve. By 1997 the combined manufacturing exports of Korea and Singapore were greater than those of Britain.

It is perhaps significant that Japan, with regular massive balance of payments surpluses, has a high rate of export growth compared with its income elasticity of demand for imports. It has been argued that without such export performance to keep balance of payments equilibrium, a country’s economic growth will be constrained. Thus, without improved export performance and reduced demand for imports, Britain will have a structural disequilibrium on the balance of payments.

4.5.3 Policies

Many policies have been advocated to restore a balance of payments account to equilibrium, usually when deficits have been a regular feature and there is evidence of fundamental disequilibrium.

Depreciation of the exchange rate

Prior to 1972, when there was a system of fixed exchange rates, a reduction in the exchange rate was termed a devaluation. This was undertaken in 1967 when the pounds was devalued from $2.80 to $2.40. The objective was to make British goods more competitive by lowering an overvalued exchange rate which had kept prices artificially high. For instance, prior to devaluation a British export priced at £5 would sell in America for $14; but when the exchange rate was lowered to $2.40, it would sell for $12, thus becoming more price-competitive. Conversely, an American export at $56 would sell in Britain at £20 before the 1967 devaluation and at £23.33 afterwards. Thus British imports would become dearer and less competitive.

However, since 1972 exchange rates have for the most part floated, and a depreciation refers to a downward float. Thus in spring 1986, the £ fell from $1.50 to $1.10 before recovering. This had a similar effect, making British exports cheaper and British imports dearer. Floating exchange rates are less under government influence and they are supposedly determined by market forces. However, governments do intervene, by instructing their central banks to buy or sell the currency as necessary. Such action has been termed dirty floating. In September 1986 the Bank of England borrowed heavily to buy pounds to maintain the sterling.

In addition, a government can influence the exchange rate by general and specific policies. It can seek to persuade the market that it is pursuing economically acceptable policies in order to retain faith in the currency and keep the rate up. Alternatively, it can more specifically manipulate interest rates in order to artificially influence the international demand for the currency. An increase in interest rates tends to raise demand and thus the exchange rate appreciates. In September 1986, the Bank of England’s extra purchasing of sterling on the foreign exchanges was insufficient to cause the value of sterling to appreciate and so the Chancellor of the Exchequer acted to raise interest rates by 1 per cent to thwart the downward pressure on the pound. In this case the exchange rate was
maintained because a fall was not desired. The primary economic objective at the time was control of inflation, and it was feared that a lower exchange rate would raise the cost of living, via more expensive imports, and reduce real incomes. The Treasury model maintains that any gains from depreciating sterling turn into later losses as higher domestic costs feed through.

Usually, though, the objective behind depreciation and devaluation has been to induce expenditure-switching by consumers. This occurs in two ways: dearer imports hopefully lead British consumers to buy British goods instead, while cheaper exports cause foreign consumers to purchase British exports rather than foreign products.

The effectiveness of such an expenditure-switching policy is largely dependent upon the price elasticities of demand for imports and exports. The British balance of payments will benefit from devaluation only if the amount spent on imports is exceeded by the amount received from exports. This occurs if the sum of the import and export elasticities exceeds unity (1). For instance, if the demand for British exports is elastic, the lower price will bring about an increase in the total revenue from exports. Conversely, if the demand for foreign imports is elastic, then their higher price will cause a fall in total spending on imports.

However, the elasticities approach proposed by Marshall–Lerner has been heavily criticised. It is very simple in that it assumes that goods are bought solely on the basis of relative prices (ignoring design, delivery, etc.). In addition, it assumes that income effects are non-existent or that income elasticities are zero for all goods. Further, by looking at just the demand side, the Marshall–Lerner approach ignores supply. It assumes that supply is infinitely elastic so that increases in the quantity of exports demanded can be immediately fulfilled. Britain’s lack of spare capacity makes that assumption unrealistic. In the first quarter after the 1992 devaluation (ERM exit), exporters responded to the new competitive advantage by boosting export prices 6 per cent while export volume rose by only 0.5 per cent (thus suggesting that supply is most inelastic). Therefore, the elasticities approach is very simplistic.

It is also non-operational, because of the enormous difficulties of calculating the elasticity values. Estimates of the price elasticities for British goods vary between forecasting bodies and for different time periods. However, generally the price elasticity for British exports is low, being 0.5, but increasing to above 1.0 after 16 quarters in most models. As the price elasticity of imports is also low, and possibly around 0.4, it is clear that the Marshall–Lerner condition is unlikely to be achieved (as the total elasticity is less than 1.0). This conclusion undermines the devaluation/depreciation policy. Ironically, it suggests that appreciation would be better, because if combined elasticities are less than 1.0, a higher valued exchange rate will raise foreign exchange receipts by more than it increases import payments.

Even if elasticities are favourable, a depreciation/devaluation will not immediately benefit a balance of payments in practice. There is an initial worsening of the current account because volumes are fixed and prices adjust automatically. However, eventually demand and supply become more elastic and so consumption and production patterns change, creating an improvement in the accounts. This tendency for the balance of payments to deteriorate initially following depreciation and subsequently to improve has been termed the ‘J’-curve effect, as illustrated in Figure 4.5.

The exact shape of the ‘J’-curve depends upon the assumptions made. In Figure 4.5 the optimistic ‘J’-curve shows that after nine months the balance of payments gains from devaluation and that this benefit may continue for another six quarters, yielding a net
surplus. The pessimistic curve has a wholly negative effect, because it assumes inelastic supply and rising domestic inflation. Furthermore, there is some evidence that, following a depreciation, British exporters maintain their foreign exchange price (i.e. raise their prices measured in sterling) rather than lowering them; this raises their short-run profits at the expense of long-run sales growth.

**Deflation**

An effective, but generally undesirable, policy used to return a balance of payments deficit to equilibrium has been domestic deflation. The government, through either tight fiscal or restrictive monetary policy, curbs demand at home. The balance of payments is improved because the growth of import demand is weakened and domestic suppliers, facing a static home market, might switch resources towards export markets in order to fully utilise capacity. An additional gain from the government’s 1979–82 deflationary policies was to weaken trade union bargaining power, through the fear of unemployment, and this probably restrained production costs, and inflation.

Although deflation induces beneficial expenditure-switching, it has unfortunate costs for the economy. The tightening of fiscal policy, by either tax increases or expenditure cuts, and the restrictions on money supply, both reduce the demand for goods. Less demand means less supply and so unemployment rises. The general effect is to constrain the rate of economic growth, by depressing business optimism, lowering investment and under-utilizing resources.

Deflation was used in conjunction with the 1967 devaluation to improve the balance of payments. It seemed to be effective. However, the severe costs make governments reluctant to use it and economists keen to find an acceptable alternative.

**Import controls**

These have the effect of reducing expenditure rather than causing switching. *Quotas* prevent the purchase of imports, while *tariffs* raise import prices and possibly lower outgoings (assuming elastic demand for imports). The advantage gained from implementation will probably only be temporary because the basic weakness of price uncompetitiveness has not been changed. The likelihood would be that a fundamental disequilibrium would return once the import controls were lifted.
In Britain’s case, wide-ranging import controls are not a realistic option. As a member of the WTO Britain has disavowed such a policy, while membership of the EU obviates such a unilateral action. There is also the danger of retaliation by our trading partners, with the consequent diminution in world trade.

**Supply-side policies**
These were the ‘solution’ advocated and attempted in the 1980s. It was claimed that by freeing up markets, increasing incentives, deregulating and removing the ‘dead hand’ of the state from economic activity, an economic miracle of non-inflationary economic growth would be achieved. The aim was to transform attitudes and behaviour so that British competitiveness re-emerged. Clearly, it would not happen overnight. However, after a decade there is little sign that the economic pain of the early 1980s has restored British competitiveness to the extent that there has been a permanent improvement in the balance of payments.

**Exercise 4.3**
Answer the following questions based on the preceding information. You can check your answers below.

1. Name one invisible earning.
2. What does the capital account show?
3. What is ‘hot money’?
4. What has caused Britain’s balance of payments current account deficit?
5. What is the difference between devaluation and depreciation of the exchange rate?
6. How could a fall in the exchange rate help an economy?
7. What does the ‘J’-curve show?
8. How can deflation help the balance of payments deficit?

**Solutions**

1. A dividend from an overseas share.
2. The capital account shows changes in Britain’s external assets and liabilities when British residents buy/sell capital items.
3. ‘Hot money’ refers to short-term capital movements of currencies by international financiers/speculators.
4. Britain’s current account deficit has been caused by a lack of competitiveness (for many reasons) in trade.
5. A devaluation occurs when a fixed exchange rate is lowered, whereas depreciation refers to a floating exchange rate which is moving downwards.
6. A fall in the exchange rate could help an economy by reducing the price of exports (and increasing the price of imports) and thereby increasing sales, which might lead to increased employment and greater export earnings (if demand is elastic).
7. The ‘J’-curve shows the likely effect of depreciation/devaluation on the current account.
8. Deflation can help the balance of payments by suppressing domestic demand for imports and by releasing goods for export (if home sales are stagnant).
4.6 Chapter summary

In this chapter the analysis of economic issues and decision-making at a micro and macro level has been extended to the situation of an open economy. An open economy is one where there is a significant movement of both goods and services and factors of production (e.g. capital) between that economy and the rest of the world. These international economic relationships raise a range of issues; these have been considered in this chapter. In particular the chapter has discussed:

- the growth and impact of multinational companies;
- international trade, its causes and consequences;
- trade policy;
- the foreign exchange market, the determination of exchange rates and exchange rate systems;
- European monetary integration and the euro;
- the balance of payments and balance of payments policy.

On completing this chapter you will have a firm grasp of the impact of the open economy on business and an understanding of the overall impact of the process of globalisation on the world economy.
Readings

Trade and globalisation

The two articles in this section consider the impact of the increasing openness of economies associated with the process of globalisation. The first deals with the impact of globalisation in employment patterns; the second considers the problems with trade negotiations in the World Trade Organisation.

Service Industries go Global: Skilled White-collar Jobs are Starting to Migrate to Lower-cost Centres Overseas

Dan Roberts, Edward Tuce, and Andrew Bibby, Financial Times, 20 August 2003 Reproduced by permission

Clutching her side in pain, the woman with suspected appendicitis who was rushed to a hospital on the outskirts of Philadelphia last week had little time to ponder how dependent her life had become on the relentless forces of globalisation. Within minutes of her arrival at the Crozer–Chester Medical Centre, the recommendation on whether to operate was being made by a doctor reading her computer-aided tomography (CAT) scan from a computer screen 5,800 miles away in the Middle East.

Jonathan Schlakman, a Harvard-trained radiologist based in Jerusalem, is one of a new breed of skilled professionals proving that geographic distance is no obstacle to outsourcing even the highest paid jobs to overseas locations. The migration of white-collar work has moved up the value chain from call centre operators and back-office clerks to occupations such as equity research, accounting, computer programming and chip design.

The trend – still only a trickle at present – may look to some like a temporary fad pursued by companies seeking to cut costs. For trade unions in the US and Europe, it heralds a fundamental restructuring of rich-world economies, akin to the globalisation of manufacturing in the 1980s and the outsourcing of unskilled service jobs in the 1990s.

At present, only 35 patients’ scans are transmitted each day from US emergency rooms to Dr Schlakman’s small team of doctors in Israel. But with senior radiologists costing up to $300,000 a year to hire in the US and many emergency cases arriving at night, the use of medical expertise based in a different time zone and earning less than half US rates is almost certain to rise. ‘It’s much more expensive to use night staff in the US because they need time off the following day’, says Dr Schlakman. ‘Radiography is probably the best area to start with because a lot of it is based on computer imaging, which you don’t need to be physically present for.’
In Thailand, a team of 50 architects is working on behalf of 16 UK architectural practices that have outsourced some of their technical drawing and three-dimensional computer-generated design work. Trieu Nguyen, technical and compliance manager at Atlas Industries, used to teach architecture to university students in Ho Chi Minh City. Today, his days may be spent checking technical drawings for a new secondary school in the English home counties. Typical pay at Atlas is about $6,000 net a year, high by local standards – Vietnam’s average per capita income is about $400 – but a fraction of comparable workers receive in the UK.

Like Jerusalem’s radiographers, Thailand’s architects use broadband internet connections as a link to their markets; but occasionally customers will make the journey themselves.

During the past year, Singapore’s Changi airport has begun receiving empty aircraft from the US. A growing number of US-based airlines are sending their fleets to Asia for maintenance. Lower wage rates for skilled aerospace engineers more than compensate for the $60,000 it can cost to fly across the Pacific.

At the centre of this service revolution is India. Just as China is fast becoming the new workshop of the world for light manufacturing, India has its eye on the globe’s professional services.

A growing clutch of Indian companies provide computer-generated animation and special effects services for the western film industry. Reuters, the financial and media group, is preparing to open a production facility for preparing and analysing the financial data it sends to screens in investment banks – threatening some of the 1,150 staff currently doing the work in the UK and US. And there are signs that India will take a slice of offshore fund management and other financial services in the next few years.

‘There is no economic limit to what can be outsourced to India,’ says Tarun Das, head of the Confederation of Indian Industry. ‘The only limit that we can see is a political backlash in the west against the migration of jobs to India and elsewhere.’

Ramesh Sharma, head of Moving Pictures India, a Delhi-based company that makes documentaries and provides animation and special effects services for western production companies, says his advantage is exactly the same as that of Indian information technology or call centres. The same cost advantages that attracted General Electric, banks such as HSBC and Standard Chartered, and BT Group, the UK telecommunications company, to relocate back-office and treasury operations to India are prompting others to see what the country’s 1.5 m English-speaking graduates are capable of.

‘Our animators are just as qualified as most western animators’, says Mr Sharma, whose company has won outsourcing work from Dutch, Italian and British production companies. ‘The key element here is that they provide the same quality service for roughly a quarter the price.’

Moving Pictures has been sending film crews around the world to make documentaries for western broadcasting companies. ‘We make a documentary for $25,000 when it would cost $100,000 in the Netherlands,’ Mr Sharma says. The only limit he can imagine is the extent to which foreign companies can shoot their films at India’s large film studios in Bombay and Hyderabad: ‘You would have to fly in all the extra if you wanted them to be white.’

Ajay Lavakare, chief executive of RMSI, an Indian ‘geographic information services’ company, says India is now a world leader in this niche subsector. By analysing maps and satellite images, RMSI helps insurance companies assess whether their risks are too concentrated, it helps ordnance surveys in creating sophisticated maps (in the UK and Japan) and it provides computerised road maps for vehicles.
‘Which western company can assemble a project team of 200 people including qualified geologists at the drop of a hat?’ asks Mr Lavakare. ‘The advantage is not just in our lower costs – it is in the easy availability of highly qualified English-speaking technicians.’

The cost advantages are even more striking in healthcare. Naresh Trehan, director of Escorts Heart Institute in New Delhi, says that an increasing number of foreigners is coming to India for heart bypass operations. The average cost, including air fare, is about $7,000 – roughly a quarter of what it would be in the UK private sector. And there are no waiting lists.

‘Last year we did more than 4,000 heart bypass operations – the highest of any single institute in the world,’ says Dr Trehan. At 0.8 per cent, Escorts’ mortality rate was comparable with international standards.

Indian companies in almost every sector are beginning to wake up to the commercial logic of such arguments. ‘What is to stop Indian legal companies from providing legal services to the UK, which also has a common law system?’ asks Omkar Goswami, a leading economist. ‘If it can happen in accountancy and the medical profession, why not law?’

But there is also growing awareness in India of the potential for a popular backlash in the west against the ‘loss’ of jobs. ‘Protectionism can take on very sophisticated guises’, says one Indian executive. ‘We believe that India will increasingly become the target of such arguments and we must act to defend ourselves.’

One consequence is that Indian companies now play down their success; western journalists are increasingly refused access to call centres in Madras, Hyderabad, New Delhi and Bombay. More importantly, India’s government is adopting a strikingly new trade negotiating position, hoping to secure a market access agreement for service professionals in the Doha round of global trade talks. This contrasts markedly with India’s traditional suspicion of open markets. ‘India has finally struck economic gold’, says a senior trade official. ‘We have to adjust our policies accordingly.’

Another policy change involves heavy lobbying by Indian trade associations in Washington, DC, where US politicians are under pressure to react to the impact of overseas outsourcing on the still-struggling technology industry. In New Jersey there has been pressure to ban outsourcing of public sector contracts to offshore processing centres such as India.

The sensitivity is well understood by technology companies but many feel compelled to look at moving jobs to lower-cost countries because, as one Microsoft executive put it recently, ‘our competitors have already got this religion’.

An internal presentation by a human resources director at International Business Machines obtained by union campaigners at the Washington Alliance of Technology Workers summed up the problem: ‘One of our challenges is to balance what the business needs to do with the impact on people and this is one of those areas where this challenge hits us squarely between the eyes. Our competitors are doing it, so we have to do it’.

Marcus Courtney, a campaigner at the Washington Alliance, says the result is a hollowing out of the US IT industry at all levels. ‘When you have a software developer with postgraduate level qualifications having to train his replacement in India, you realise this not about skills’, he says. ‘This is about a global economy that is increasingly based on the lowest-cost labour, and multinationals are beginning to exploit that’.

Europe, too, fears a repeat of the job losses that hit manufacturing in the 1980s and 1990s. ‘It’s just a trickle right now but we’re very worried that higher-skills jobs are beginning to go too, such as information technology’, says Peter Morris, policy adviser at the Communication Workers Union in the UK. ‘In theory, there is no limit: any job which can be done remotely could disappear abroad.’
While unions in the US and the UK argue that India’s advantage in service industry outsourcing lies in its ‘shop’ wages and working conditions, few Indians take such descriptions seriously. Working conditions at India’s call and IT centres – whether directly managed by western companies or by Indian-owned contractors – are considered among the best of any type of employment. Wages are high by Indian standards. And in spite of an average 50 per cent annual growth rate in revenues – expected to continue indefinitely – India’s business processes out-sourcing sector still employs fewer than 200,000 people. That number is certain to rise rapidly.

**Discussion points**

**Discuss these within your study group before reading the outline solutions**

1. From the article, identify the main reasons for the shift of white collar occupations to locations such as India and SE Asia.
2. What trade policy issues related to this phenomenon are identified in the article?

**Outline solutions**

1. The main reasons for the growing shift of white collar occupations to India and SE Asia appear to be:
   - low wage costs for a whole range of skilled work in service sector activities including technical and administrative jobs;
   - the development of international communications through computer technology making the transfer of information both rapid and extremely cheap.

2. The main trade policy issues identified in the article are:
   - the possibility that western countries, in the face of large job losses, might attempt to create trade protection barriers to prevent the outflow of employment to these low cost countries.
   - the countries benefiting from this process, such as India, are beginning to adjust their own approach to trade policy: traditionally suspicious of the benefits of free trade they are now beginning to take a more optimistic view of open and may be willing to bargain away some of their own trade barriers to encourage western countries to not raise protectionism in the service sector industries.

**Dealing in Doha**


As ministers and officials from the World Trade Organisation’s more than 140 members prepare for their five-day meeting in Doha, in the Gulf state of Qatar, many are haunted by the spectre of an unwelcome outsider: Osama bin Laden.

There is much anxiety that the event, which starts on Friday, could be the target of a terrorist attack, despite Qatar’s promises of tight security. Although no WTO member has pulled out, delegations, particularly from the US, have been cut and some are taking gas masks and emergency medical supplies and making their own security arrangements.
However, Mr bin Laden has also inadvertently done the WTO a big favour. The economic damage inflicted by the September 11 attacks in the US has galvanised efforts to launch a global trade round – so much so, that many diplomats now think a deal can be done in Doha.

The increased momentum is spurred mainly by fear. Proponents of a round argue that global negotiations would deter outbreaks of protectionism that would imperil the world trade system. They also worry that a failure in Doha could be devastating for the WTO, after the collapse of its 1999 Seattle meeting.

Preparations have focused little on the biggest potential prize from a new round: the economic boost from removing trade barriers. Most negotiators have been too busy haggling over the fine print of the agenda to pay attention to the bigger picture.

A renewed liberalisation drive could bring huge gains. A Michigan University study predicts that global income would rise by $612bn (£418bn) if trade barriers were cut by a third. The World Bank estimates the increase could be as much as £2,800bn if all barriers were eliminated.

But identifying barriers is one thing; dismantling them is another. Even if a round is launched, the many obstacles it will face make eventual success far from certain.

Hopes for progress centre on three main areas: agriculture, industrial tariffs and services.

Although export subsidies have fallen since the 1994 Uruguay Round agreement, the Organisation for Economic Co-operation and Development says rich countries’ total support for agriculture was $327bn last year, or 34 per cent of gross farm incomes – just below the proportion in the mid-1980s. And while WTO members have cut tariffs, many remain very high, sometimes exceeding 500 per cent.

Chipping away at these distortions will meet strong resistance from the European Union, Japan and other agricultural protectionists. In addition, even supposedly liberal farm-exporting nations, such as the US and Canada, discriminate against some imports.

It is also unclear that the latter group will remain united behind its main goal of eliminating EU export subsidies. The US stance is likely to be decisive. But it seems unsure whether its interests are better served by pressing for better access to other countries’ markets or by lavishing ever larger domestic subsidies on American farmers.

Another problem is that even if existing barriers were removed, they might be replaced by new ones erected in the name of consumers rather than producers. This risk has been increased by successive food scares, particularly in Europe, and public suspicions of genetically modified foods.

Those popular anxieties have led the EU to insist on negotiations to ‘clarify’ WTO environment rules. Many countries oppose its demands, fearing they would open the door to arbitrary import curbs imposed on questionable health and safety grounds.

Industrial tariffs, the main target of earlier rounds, offer plenty of scope for cuts. Although rates average about 4 per cent in rich countries and 15 per cent in poor ones, duties on some products are far higher. US and EU tariffs on imported trucks exceed 20 per cent, while duties on sports footwear are 48 per cent in the US and 27 per cent in Japan.

In addition, while many countries impose low tariffs on raw materials such as timber, their duties on imports made from them, such as furniture, are often much steeper.

Arguably, an even bigger threat to trade is anti-dumping measures, which can choke off affected imports. They have proliferated since the 1997 Asian economic crisis, particularly among developing countries, which nonetheless want stricter WTO disciplines on them.
However, the US is under strong pressure from Congress and business to resist those demands. Services – a fast growing activity in most economies – appear to offer the biggest gains from liberalisation. Removing barriers could also offset rises in the cost of doing business across borders since 11 September.

But the impact of the attacks could cut both ways. They could stimulate negotiations on electronic commerce and telecommunications, and possibly insurance, if the industry’s recent problems lead to more cross-border consolidation. However, they may well make the US and some other countries even more reluctant to open their aviation markets to accept more temporary skilled workers from abroad.

Some observers also question how much a round could contribute, arguing that governments have so far proved unwilling to liberalise services markets in the WTO faster than they planned to do anyway. ‘As an engine of liberalisation, it is not very powerful,’ says Pierre Sauvée, an OECD trade economist. ‘It is really an engine for locking in existing commitments.’

In any case, liberalisation pledges may achieve little unless buttressed by effective regulation to ensure fair competition and transparent national markets. It is unclear how much the WTO can do to entrench sound domestic regulatory practices, particularly in poorer countries.

More generally, a new round would also have to contend with at least two other sources of uncertainty. One arises from deep north–south splits in the WTO, crystallised in developing countries’ repeated complaints that only rich ones have profited from trade liberalisation.

In fact, such claims are ill-founded. In the past decade, western Europe and Japan’s shares of world merchandise exports by value fell sharply, those of south-east Asia and Latin America rose and Mexico’s grew much faster than those of the US and Canada. The only mainly poor regions to lose ground were Africa and the Middle East.

But developing countries’ determination to air their grievances is a sign of their growing assertiveness in the WTO. They account for most of its members and are increasingly aware of, and ready to exert, their bargaining power in a forum long dominated by the US and Europe.

Whether they will use it to promote a positive liberalisation agenda or to thwart progress is uncertain. Much may depend on how China plays its hand after it joins the WTO and whether it chooses to act as their champion. What is clear is that they are no longer a silent majority.

The second question concerns the role of campaigners against globalisation and of pressure groups hostile to the WTO. Although the anti-capitalism and anti-Americanism that underlie many of their protests has lost some of its popular appeal since September 11, they continue to exercise political influence, particularly in national legislatures.

Some observers believe their arguments have gained currency because governments have not made the case for free trade forcefully enough. According to a forthcoming survey by the International Chamber of Commerce, many business leaders believe politicians’ failure to defend liberalisation is a bigger threat to the world trade system than global recession.

The recent acceleration of efforts to start a new round suggests many policymakers have, at least for the moment, turned a deaf ear to opponents of free trade. That creates a window of opportunity at Doha. But if global negotiations do get under way, launching the round may soon look like the easy part.
Discussion points
Discuss these within your study group before reading the outline solutions

1. Identify the three main areas of international trade where progress in trade liberalisation is most urgent.
2. What might be the main threats to progress in trade liberalisation in the WTO?

Outline solutions

1. The main areas where progress in trade liberalisation is most needed are:
   - agriculture where both barriers against imports and subsidies for exports are common, especially in the EU and Japan;
   - industrial tariffs which remain high on certain products and where anti-dumping duties are often used as disguised protectionist measures;
   - services which form the bulk of economic activity in rich economies yet where competition from abroad is severely restricted by domestic regulations.
2. The main threats to progress in trade talks in the WTO appear to be:
   - reluctance on the part of developing countries, many of whom believe that they have made little economic gain from previous rounds of trade liberalisation;
   - the growth of groups around the world that are hostile to the work of the WTO and to the process of globalisation and who may put pressure on governments of member states to limit trade liberalisation.
Revision Questions

You should use these questions for practice and revision for the content of this chapter. The first question contains a selection of multiple-choice subquestions; questions 2 and 3 are data-response questions. In the latter case the solutions are those which a student should be able to produce under examination conditions to achieve a good pass mark.

Question 1 Multiple-choice selection

1.1 A country is said to have a comparative advantage in the production of a good when:

(A) it can produce more of it than any other country.
(B) it has captured a larger share of the world market than any other country.
(C) it can produce it at a lower opportunity cost than its trading partners.
(D) its costs of production for the good are lower than in other countries.

1.2 The existence of international trade is best explained by the fact that countries:

(A) use different currencies.
(B) have different economic systems.
(C) have different endowments of factors of production.
(D) have specialised in different goods and services.

1.3 Which of the following might cause a country’s exports to fall?

(A) A fall in the exchange rate for that country’s currency.
(B) A reduction in other countries’ tariff barriers.
(C) A decrease in the marginal propensity to import in other countries.
(D) A rise in that country’s imports.

1.4 The current account of the balance of payments includes all of the following items except which one?

(A) The inflow of capital investment by multinational companies.
(B) Exports of manufactured goods.
(C) Interest payments on overseas debts.
(D) Expenditure in a country by overseas visitors.

1.5 The main objective of the WTO is:

(A) to raise living standards in developing countries.
(B) to minimise barriers to international trade.
(C) to harmonise tariffs.
(D) to eliminate customs unions.

1.6 The main advantage of a system of flexible (floating) exchange rates is that it:

(A) provides certainty for international traders.
(B) provides automatic correction of balance of payments deficits.
(C) reduces international transactions costs.
(D) provides policy discipline for governments.

1.7 Which of the following would normally result from an increase (appreciation) in a country’s exchange rate?

(i) A fall in the country’s rate of inflation.
(ii) A rise in the volume of its exports.
(iii) An improvement in its terms of trade.
(iv) A surplus on its current account.

(A) (i), (ii) and (iii) only.
(B) (ii), (iii) and (iv) only.
(C) (i) and (iii) only.
(D) (ii) and (iv) only.

1.8 If a country has a floating (flexible) exchange rate, which one of the following would lead to a fall (depreciation) in the rate of exchange for its currency?

(A) A rise in capital inflows into the economy.
(B) An increase in the country’s exports.
(C) An increase in the country’s imports.
(D) A fall in the country’s rate of inflation.

? Question 2 Balance of payments

The following data refer to a country’s balance of payments:

<table>
<thead>
<tr>
<th>Item</th>
<th>$m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Exports</td>
<td>65,500</td>
</tr>
<tr>
<td>2. Interest, profits and dividends (net)</td>
<td>+1,080</td>
</tr>
<tr>
<td>3. Services (net)</td>
<td>+2,400</td>
</tr>
<tr>
<td>4. Imports</td>
<td>63,200</td>
</tr>
<tr>
<td>5. Current transfers</td>
<td>1,810</td>
</tr>
<tr>
<td>6. Increase in external assets (net)</td>
<td>30,830</td>
</tr>
<tr>
<td>7. Increase in external liabilities (net)</td>
<td>28,570</td>
</tr>
<tr>
<td>8. Balancing item</td>
<td>1,710</td>
</tr>
</tbody>
</table>

Requirements

Using both your knowledge of economic theory and the material contained in the table:

(a) From the table calculate the following:

(i) the visible trade balance;
(ii) the invisible trade balance;
(iii) the current account balance;
(iv) the net capital outflow.

(4 marks)

(b) State whether each of the following is true or false:

(i) The value of the balancing item is determined by the extent to which total currency inflows and outflows differ.
(ii) Current account surpluses have to be financed by capital account deficits.
(iii) The ‘J’-curve shows that the short-term effect of a depreciation in the currency is that the current account moves towards surplus.
(iv) Capital flows are counted in the capital account but interest payments on that capital are counted in the current account.
(v) The balance of payments accounts always balance to zero.
(vi) If a country has a freely floating exchange rate system, imbalances on the current account will not occur.

(6 marks)
(Total marks = 10)

Question 3

The following passage is based on a newspaper article published in February 1997, and discusses the effects of the rise in the sterling exchange rate in 1996:

‘UK companies are expressing alarm at the strength of sterling after seeing the rising exchange rate choke off their exports’ the CBI (Confederation of British Industry) said yesterday as the pound sterling rose to DM2.7070 in late trading.

The CBI said that demand for exports had levelled off for the first time since the autumn of 1993, with optimism and order books hit by the 9 per cent appreciation of sterling in the final three months of 1996. According to the CBI survey, prices were regarded as more of a constraint on exports than at any time since October 1989. The picture which emerged was of weakening export orders balanced by the strength of domestic demand for UK-produced consumer goods.

The CBI said that the decision on whether the government should raise interest rates was ‘finely balanced’. Any rise in interest rates to prevent the very rapid recovery from recession leading to excessive inflation was likely to further strengthen sterling and have an adverse effect on exporters’ order books.

However, the prospects of a rise in interest rates to slow inflation were lessened by the latest figures for the growth of the money supply. They showed that broad money growth fell from an annual rate of 10.8 per cent in November to 9.6 per cent in December. However, these were still well above the government’s target for the growth of the money supply. In response, a Government source pointed out that the rise in sterling itself would act to reduce the rate of inflation through its effects on costs and on the level of aggregate demand.

Requirements

Using both your knowledge of economic theory and material contained in the above passage:

(a) State whether, other things being equal, the effect of each of the following would be to raise the exchange rate for a currency, lower the exchange rate or leave the exchange rate unaffected.
(i) A rise in interest rates in the country.
(ii) A rise in the rate of inflation in a country.
(iii) A surplus on the current account of the balance of payments.
(iv) A government budget deficit.
(v) An increase in the export of capital from the country.

(5 marks)

(b) State whether each of the following is true or false:

(i) A rise in the exchange rate tends to reduce the domestic rate of inflation.
(ii) A rise in the exchange rate tends to reduce domestic unemployment.
(iii) A rise in the exchange rate tends to worsen the terms of trade.
(iv) A rise in the exchange rate tends to worsen the balance of trade.
(v) A rise in the exchange rate tends to raise domestic living standards.

(5 marks)

(Total marks = 10)
1.1 Solution: (C)

The comparative cost theory is concerned with costs, not the level of output. A and B are therefore incorrect. The theory also stresses that trade is based on relative or opportunity cost, not absolute cost. C, not D, is therefore the correct answer.

1.2 Solution: (C)

The existence of different currencies is irrelevant, as is the fact that countries may have different economic systems. Trade occurs because of comparative advantage and this arises mainly because different countries have different endowments of land, labour and capital. Specialisation is not the reason for international trade, but the consequence of it.

1.3 Solution: (C)

A fall in the exchange rate (depreciation or devaluation) or a fall in barriers to trade will be likely to lead to increases in a country’s exports. A rise in a country’s imports will have no direct effect on its exports, but may indirectly raise them, since it will have increased the level of incomes in trading partners. However, if the propensity to import in the country’s trading partners falls, exports would decline.

1.4 Solution: (A)

Exports of goods clearly appears in the balance of trade element of the current account. Interest payments and tourist expenditure appear on the invisible items section of the current account. The movement of capital by multinational companies, however, is recorded on the capital account.

1.5 Solution: (B)

The WTO is an organisation concerned with trade agreements and associated matters, and seeks a reduction in barriers to trade. The minimalisation of trade barriers is its primary aim. The WTO may see the others as desirable, but they are not its direct concerns.

1.6 Solution: (B)

A and B are benefits of a fixed exchange rate system since the exchange rate remains fixed and domestic economic policy is constrained by this. Response C is incorrect
since transaction costs occur whenever foreign exchange is bought or sold, irrespective of the exchange rate regime. The correct solution is B since a deficit would lead to a fall in the exchange rate, which would improve the country’s competitiveness and thus correct the deficit.

1.7 Solution: (C)
A rise in the exchange rate will raise export prices; exports will fall and the current account will move towards deficit. However, import prices will fall, dampening domestic inflation. Also, since import prices will have fallen and export prices risen, the terms of trade, the ratio of import and export prices, will have improved.

1.8 Solution: (C)
The exchange rate will rise if the demand for the currency increases; this will result from increased inward capital flows and increased exports, especially if lower inflation increases the demand for exports. Increased imports however will increase the supply of the currency to pay for them; the currency will therefore depreciate.

✓ Solution 2

(a) (all in $m)
(i) +2,300
(ii) +1,670
(iii) +3,970
(iv) −2,260

(b) (i) False
Total currency inflows and outflows are always equal; the balancing item is the amount by which these flows have been miscounted.
(ii) True
All surpluses and deficits on the current account must be offset (‘financed’) on the capital account.
(iii) False
The ‘J’-curve shows that in the short run the effect of a depreciation is to shift the current account toward a deficit; only in the long run does the account move towards a surplus.
(iv) True
The capital account is concerned with the sale and acquisition of capital assets, but any income, such as interest or profits, appears in the current account.
(v) True
The balance of payments are a set of double entry accounts and therefore always balance.
(vi) False
A floating exchange rate system cannot guarantee a competitive rate and so a currency may become overvalued or undervalued.
Solution 3

(a) (i) Raise
(ii) Lower
(iii) Raise
(iv) No effect
(v) Lower

(b) (i) True
   A rise in the exchange rate reduces the domestic price of imports.

(ii) False
   A rising exchange rate reduces exports and raises imports, thus increasing domestic unemployment.

(iii) False
   The terms of trade are a measure of the relative prices of imports and exports; a rising exchange rate raises export prices and reduces import prices.

(iv) True
   As export prices rise, total exports tend to fall, but the opposite occurs for imports, thus worsening the trade balance.

(v) True
   The rise in exchange rate reduces import prices and thus raises the purchasing power of domestic incomes.
Preparing for the Assessment

This chapter is intended for use when you are ready to start revising for your assessment. It contains:

- a summary of useful revision techniques;
- details of the format of the assessment;
- a bank of assessment-standard revision questions and suggested solutions. These solutions are of a length and level of detail that a competent student might be expected to produce in an assessment.

**Revision technique**

**Planning**

The first thing to say about revision is that it is an addition to your initial studies, not a substitute for them. In other words, do not coast along early in your course in the hope of catching up during the revision phase. On the contrary, you should be studying and revising concurrently from the outset. At the end of each week, and at the end of each month, get into the habit of summarizing the material you have covered to refresh your memory of it.

As with your initial studies, planning is important to maximise the value of your revision work. You need to balance the demands of study, professional work, family life and other commitments. To make this work, you will need to think carefully about how to make best use of your time.

Begin as before by comparing the estimated hours you will need to devote to revision with the hours available to you in the weeks leading up to the assessment. Prepare a written schedule setting out the areas you intend to cover during particular weeks, and break that down further into topics for each day’s revision. To help focus on the key areas try to establish:

- which areas you are weakest in, so that you can concentrate on the topics where effort is particularly needed;
- which areas are especially significant for the assessment – the topics that are tested frequently.

Don’t forget the need for relaxation, and for family commitments. Sustained intellectual effort is only possible for limited periods, and must be broken up at intervals by lighter activities. And don’t continue your revision timetable right up to the moment when you enter for the assessment: you should aim to stop work a day or even two days before the assessment. Beyond this point the most you should attempt is an occasional brief look at your notes to refresh your memory.
Getting down to work

By the time you begin your revision you should already have settled into a fixed work pattern: a regular time of day for doing the work, a particular location where you sit, particular equipment that you assemble before you begin and so on. If this is not already a matter of routine for you, think carefully about it now in the last vital weeks before the exam.

You should have notes summarizing the main points of each topic you have covered. Begin each session by reading through the relevant notes and trying to commit the important points to memory.

Usually this will be just your starting point. Unless the area is one where you already feel very confident, you will need to track back from your notes to the relevant chapter(s) in the Study System. This will refresh your memory on points not covered by your notes and fill in the detail that inevitably gets lost in the process of summarisation.

When you think you have understood and memorised the main principles and techniques, attempt an assessment-standard question. At this stage of your studies you should normally be expecting to complete such questions in something close to the actual time allocation allowed in the exam. After completing your effort, check the solution provided and add to your notes any extra points it reveals.

Tips for the final revision phase

As the assessment looms closer, consider the following list of techniques and make use of those that work for you:

- Summarise your notes into more concise form, perhaps on index cards that you can carry with you for revision on the way to work.
- Go through your notes with a highlighter pen, marking key concepts and definitions.
- Summarise the main points in a key area by producing a wordlist, mind map or other mnemonic device.
- In areas that you find difficult, rework questions that you have already attempted, and compare your answers in detail with those provided in the Study System.

Format of the assessment

The assessment for Economics for Business is a one hour computer-based assessment comprising 40 compulsory questions. Single part questions are generally worth 1–2 marks; two or three part questions may be worth 4 or 6 marks. There will be no choice and all questions should be attempted if time permits. CIMA are continuously developing the question styles within the CBA system and you are advised to try the on-line website demo, to both gain familiarity with the assessment software and examine the latest style of questions being used.

In broad terms, the entire syllabus will be covered in each assessment. Please note that the weightings of the syllabus and of the assessment are not exactly reflected in the space allocated to the various topics in this book.

The current weightings for the syllabus sections are:

- The economy and the growth of economic welfare – 10 per cent
- The market system and the competitive process – 40 per cent
- The macroeconomic framework – 30 per cent
- The open economy – 20 per cent.
# Revision Questions

**Learning Outcome**

<table>
<thead>
<tr>
<th>The economy and the growth of economic welfare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain the principal issues related to economic welfare and its growth.</td>
</tr>
<tr>
<td>Explain the main trends in the rate and structure of economic growth in recent years.</td>
</tr>
<tr>
<td>Explain the central economic problem and the concepts of scarcity and opportunity cost.</td>
</tr>
<tr>
<td>Explain the main factors determining the rate of growth.</td>
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<tr>
<td>Explain the main elements of government policy towards economic growth.</td>
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<th>Question number</th>
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<table>
<thead>
<tr>
<th>The market system and the competitive process</th>
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</thead>
<tbody>
<tr>
<td>Explain the functioning of a market economy.</td>
</tr>
<tr>
<td>Explain how the price system works by applying appropriate economic concepts and principles.</td>
</tr>
<tr>
<td>Explain and illustrate how product and factor markets operate.</td>
</tr>
<tr>
<td>Apply basic economic analysis to explain economic and business issues.</td>
</tr>
<tr>
<td>Explain the behaviour of costs in both the short and long run.</td>
</tr>
<tr>
<td>Explain the economic factors which affect the structure, behaviour and performance of individual businesses and industries.</td>
</tr>
<tr>
<td>Analyse the process of competition in different market structures.</td>
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<tr>
<td>Identify the public issues that are raised by business activities.</td>
</tr>
<tr>
<td>Explain how governments might respond to the effects of business on the environment.</td>
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<th>Question number</th>
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<tr>
<td>5.11</td>
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<tr>
<td>5.7</td>
</tr>
</tbody>
</table>
Learning Outcome

The macroeconomic framework
Identify the appropriate macroeconomic concepts to explain the measurement and determination of national income.  
17.5
20

Explain macroeconomic phenomena by demonstrating a simple circular flow model.  
17.8
17.11
26(a)

Identify the main indicators of macroeconomic performance and demonstrate their significance.  
17.9
17.10
18
23(a)

Identify the main elements of the monetary system and financial system.  
17.1
17.3
17.6
17.12

Explain the importance of the monetary environment to the business sector.  
24
26(b)

Explain the economic role of government through fiscal and monetary policy and demonstrate the impact of such policies on the business sector.  
17.2
17.4
17.7

Explain the nature of the trade cycle, its causes and consequences.  
19
21

Explain the debates concerning the nature of the macroeconomy and appropriate government policy.  
22
23(b)
25

The open economy
Explain patterns of international trade and the sources of international specialisation.  
27.4
27.5
28
31(a)

Identify the international movement of factors of production and the role of transnational companies in this process.  
27.7
29(a) & (b)

Identify and explain the concept and consequences of globalisation for businesses and national economies.  
27.3
27.9
30(a)

Explain the concept of the balance of payments and its determinants.  
27.1
27.2
27.12
30(b)
32

Distinguish between different exchange rate regimes and explain their implications for the business sector.  
27.6
27.8
27.10
27.11
29(c)
31(b)
33

Identify the main elements of national policy with respect to external economic relations, especially in the context of regional trading blocs.
Note that the published Examiner’s Reports contain much useful detailed guidance on areas of difficulty experienced by candidates sitting these questions. You are strongly recommended to obtain the Examiner’s Reports for the questions included here and read them after you have attempted your answer and before looking at the suggested solution.

The economy and the growth of economic welfare

Question 1 Multiple-choice selection

1.1 In a market economy, the price system provides all of the following except which one?

(A) An estimation of the value placed on goods by consumers.
(B) A distribution of income according to needs.
(C) Incentives to producers.
(D) A means of allocating resources between different uses.

1.2 Which of the following would prevent the price mechanism in a market economy from efficiently allocating resources?

(i) External costs and benefits.
(ii) Shortages of raw materials.
(iii) Firms with monopoly powers.
(iv) Tariffs on imports.

(A) (i) and (ii) only.
(B) (ii) and (iii) only.
(C) (i), (iii) and (iv) only.
(D) (i) and (iii) only.

1.3 The production possibility frontier shows:

(A) the bundles of goods that use up a household’s income.
(B) the trade-offs a society faces because of the problem of scarcity.
(C) all those combinations of goods that yield the same satisfaction for a consumer.
(D) the relationship between the price of a commodity and its supply.

1.4 The term ‘opportunity cost’ means:

(A) the difference between the cost of a good and its price.
(B) a special sale of goods below their cost of production.
(C) a change in costs resulting from a shift in the production possibility frontier.
(D) the value of goods that are forgone in order to produce something else.

1.5 The term ‘economic welfare’ refers to:

(A) social security payments by the government.
(B) the amount of money which citizens of a country have.
(C) the standard of living enjoyed by individuals.
(D) the stock of assets held by individuals and organisations.
1.6 All of the following would tend to raise the rate of economic growth in a country except which one?

(A) A rise in the rate of investment.
(B) An improvement in the education and training of workers.
(C) More rapid technological change.
(D) A rise in the propensity to consume.

1.7 All of the following would be likely to restrict long-term economic growth except which one?

(A) Increasing cost of energy as oil reserves decrease.
(B) The scarcity of natural resources and raw materials.
(C) Environmental damage caused by both production and consumption.
(D) Increasing openness of economies to international trade.

1.8 Rapid economic growth is desirable because it:

(A) always leads to lower unemployment.
(B) raises the average standard of living.
(C) reduces the cost of living.
(D) slows down inflation.

**Question 2**

The following diagram represents the production possibility frontiers (curves) for an economy:

![Diagram](image)

**Requirements**

Using both your knowledge of economic theory and the diagram above:

(a) Identify the point on the diagram which corresponds to:

(i) less than full employment of available resources;
(ii) a bias in production towards consumer goods;
(iii) a bias in production towards investment goods;
(iv) economic growth compared to point A.

(4 marks)
(b) State which of the following (yes/no) could explain the shift in the production possibility frontier from 1 to 2:
(i) a rise in the rate of investment;
(ii) a reduction in unemployment;
(iii) an increased surplus on the balance of trade;
(iv) a rise in labour productivity.

(4 marks)

c) State whether each of the following is true or false:
(i) For economic growth to take place, output per worker must rise.
(ii) The best measure of living standards is personal consumption per capita.

(2 marks)

(Total marks = 10)

Question 3

The following passage is based on a newspaper article:

The spectre of the sort of economic havoc last seen in the United Kingdom in the 1970s has been raised by sustained surges in oil prices, reviving fears of high inflation and recession. Predictions of oil shock have risen as the crude oil price climbed to more than $30. Few dispute that the oil shocks of 1973/74 and 1979/80 caused major problems for the United Kingdom. They led first to double digit inflation and then to rising unemployment and recession as inflation was painfully squeezed out of the system. Moreover, the cumulative effect of this was a marked slowdown in economic growth in OECD economies as investment and research and development effort declined.

However, economies may be better placed to deal with this new oil price shock than on previous occasions. The evidence of the previous shocks was that economies with flexible labour markets, such as the United States, coped fairly well. Since workers were unable to demand pay rises to match the increase in fuel prices, the initial oil shock did not generate an inflationary spiral. In turn governments did not have to adopt deflationary policies to limit inflation. The more flexible labour markets in some economies will thus help. Also, with the shift away from heavy, energy-intensive industry towards the service sector, OECD economies may in any case be less vulnerable to rises in energy prices.

Requirements

Using both your knowledge of economic theory and information contained in the passage:

(a) Which of the following would occur in oil-consuming countries as a result of a large rise in the price of oil? (yes/no)
(i) Demand pull inflation.
(ii) Falling national output.
(iii) Trade deficits.
(iv) Frictional unemployment.

(4 marks)
(b) For each of the following cases state whether the impact will be strongest on the price of oil or the sales of oil.

(i) An outward shift (increase) in the supply curve with a high price inelastic demand curve.

(ii) An outward shift (increase) in the demand curve with a high price elastic supply curve.

(iii) An inwards shift (decrease) in the demand curve with a high price inelastic supply curve.

(3 marks)

(c) State whether each of the following are true or false.

(i) As the importance of service activities in western economies increases, their vulnerability to oil price changes decreases.

(ii) A rise in oil prices is a supply side shock to the economy and thus will not affect employment but will cause inflation.

(iii) An oil price rise would lead to a deterioration in the terms of trade of oil importing countries.

(3 marks)

(Total marks = 10)

Question 4

The following passage is based on a newspaper article:

The world’s six billionth person was born yesterday according to the United Nations. The world’s population has risen by 1 billion in the past twelve years strongly fuelled by falling death rates in developing economies. But population growth in the United Kingdom and other European countries, where birth rates have steeply fallen, has slowed to less than 10 per cent over the last three decades. For the United Kingdom this means that it faces the challenge of an ageing population as the average age rises and the proportion of people over the age of 65 rises from 15 per cent to 20 per cent of the total population over the next twenty years. This may mean that the UK companies may soon be facing a growing shortage of younger workers just as experienced, mature workers move into retirement. This increases the burden of people who do not work relative to those who do. The ageing population also presents a difficulty for pension arrangements. Retired people consume goods and services but do not produce any. This places pressure on the labour force to increase output but not their own consumption. Moreover, if people live longer after retirement they may need to build up a bigger stock of financial assets to finance their pension provision. On both of these grounds, governments may have to review official retirement ages. The recent trend towards earlier retirement may have to be reversed.

Requirements

Using both your knowledge of economic theory and information contained in the passage:

(a) State whether each of the following would increase, decrease or have no effect on the dependency burden for an economy (ratio of dependents to working population).

(i) An increase in life expectancy.

(ii) A rise in the retirement age.
(iii) An increase in the proportion of young people going to university.
(iv) Rising incomes of pensioners.
(v) An increase in the number of married women in full-time employment.

(b) State whether each of the following is true or false.
(i) The only problem of a larger number of pensioners is how to finance their pensions.
(ii) A rising proportion of retired people in a population requires that those working need to save a larger proportion of their income.
(iii) Pensioners are a burden only if they do not have a private pension and rely on the state pension.
(iv) Increased labour productivity would ease the problem of the increasing dependency burden.
(v) Immigration into a country makes the dependency problem worse.

The market system and the competitive process

? Question 5 Multiple-choice selection

5.1 When the price of a good is held above the equilibrium price, the result will be:

(A) excess demand.
(B) a shortage of the good.
(C) a surplus of the good.
(D) an increase in demand.

5.2 If the price of a good fell by 10 per cent and, as a result, total expenditure on the good fell by 10 per cent, the demand for the good would be described as:

(A) perfectly inelastic.
(B) perfectly elastic.
(C) unitary elastic.
(D) elastic.

5.3 The fall in a firm’s short-run average total cost with an increase in production would be due to which of the following?

(A) The greater divisibility of fixed costs.
(B) Diminishing returns to a fixed factor.
(C) Economies of scale.
(D) Diseconomies of scale.

5.4 One of the characteristic features of oligopoly is that:

(A) the pricing policy of firms is influenced by that of rival firms.
(B) the pricing policy of a firm is largely determined by the state.
(C) known consumers’ preferences play no part in firms’ policy decisions.
(D) free entry of firms into the industry is always encouraged.
5.5 Which one of the following would not, of itself, cause a shift of the demand curve for a product? A change in:
   (A) consumers’ preferences.
   (B) consumers’ income.
   (C) the price of the product.
   (D) the prices of related products.

5.6 According to the traditional theory of the firm, the equilibrium position for all firms will be where:
   (A) profits are maximised.
   (B) output is maximised.
   (C) revenue is maximised.
   (D) costs are minimised.

5.7 If the social costs of producing a good exceeds its private cost, in order to improve resource allocation, the government should:
   (A) provide the producers with a subsidy equal to the difference between private and social costs.
   (B) impose an indirect tax equal to the difference between private and social costs of producing the good.
   (C) tax the profits of the producers of the good at a higher rate than normal.
   (D) pay a subsidy to all consumers of the product.

5.8 A horizontal merger occurs when the merging firms are:
   (A) in different stages of the production chain.
   (B) major firms operating in the same region.
   (C) producing different goods or services.
   (D) producing the same goods or services.

5.9 The kinked demand curve model of oligopolistic competition is used to explain:
   (A) collusion between firms.
   (B) price rigidity.
   (C) price leadership.
   (D) price competition.

5.10 If trade unions attempt to increase the wages of their members, the result is usually that for their members:
   (A) wages rise and employment falls.
   (B) wages and employment both rise.
   (C) wages rise without affecting employment.
   (D) wages fall but employment rises.

5.11 All of the following are examples of anti-competitive behaviour by manufacturing companies except which one?
   (A) Price-fixing agreements.
   (B) Minimum price contracts with retailers.
   (C) Exclusive contracts with retailers.
   (D) The heavy use of advertising.
The pursuit of profit will ensure that business organisations are efficient provided that:

(A) they operate in competitive markets.
(B) they produce at the profit-maximizing level of output.
(C) prices are set where demand and supply are equal.
(D) excess profits are reinvested in the businesses.

**Question 6**

The following passage is based on newspaper reports:

At first sight, the UK brewing industry might seem to be very competitive, with numerous brands of beer and lager on sale in many pubs and bars. In fact, most pubs and bars are owned by the major brewing companies and generally sell only a limited range of beers. The oligopolistic nature of the brewing industry can be seen from the data on the market shares of the main companies:

<table>
<thead>
<tr>
<th>Market shares of the major UK brewing companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985 (%)</td>
</tr>
<tr>
<td>Bass</td>
</tr>
<tr>
<td>Carlsberg-Tetley</td>
</tr>
<tr>
<td>Grand Met</td>
</tr>
<tr>
<td>Whitbread</td>
</tr>
<tr>
<td>Scottish &amp; Newcastle</td>
</tr>
<tr>
<td>Courage</td>
</tr>
</tbody>
</table>

The increasing concentration in the industry is reflected in the decline of small, independent brewers in the face of the market power of the large brewing companies, which are vertically integrated, combining brewing with retailing. Also, horizontal integration has occurred as a result of mergers and takeovers. For example, in 1996, Bass announced the takeover of Carlsberg-Tetley: the combined company now produces many of the famous brands of beer and lager – Bass, Carling, Tennents, Worthington, Tetley, Carlsberg and Skol.

The Monopolies and Mergers Commission investigated the brewing industry and recommended that brewers should be allowed to own a maximum of 2000 pubs and bars each. Following pressure from the major brewers, the government agreed to modify the recommendation and allow the brewers to retain more retail outlets, particularly pubs and bars. Even so, it was expected that, as brewers were required to sell pubs and bars, competition would be increased. This hope was ill-founded, since the brewers sold off the less popular and least profitable of their pubs and bars.

Thus, smaller brewers face two barriers to increased market share: the hold which large brewers have over the retail sector and the dominance of established brands of beer and lager. Heavy advertising of these brands makes entry of new brewers into the industry very difficult. The results of this limited competition have been to contribute to the rise in the real price of beer and lager and to reduce choice for consumers.
Requirements
Using both your knowledge of economic theory and information contained in the passage:

(a) State which of the following are typical features of an oligopolistic industry (yes/no):
   (i) heavy advertising;
   (ii) independent decision-making;
   (iii) frequent price competition;
   (iv) price leadership;
   (v) freedom of entry and exit.

(5 marks)

(b) State whether each of the following statements is true or false.
   (i) The brewing industry is an oligopoly because the largest firm has more than 25 per cent of the market.
   (ii) A barrier to entry in the brewing industry is the difficulty small brewers have in retailing their products.
   (iii) The kinked demand curve model of oligopoly suggests an oligopoly such as brewing will feature severe price competition.
   (iv) Barriers to entry have led to higher prices and profits in the brewing industry.
   (v) Product differentiation is a typical feature of oligopolies such as brewing.

(5 marks)

Note: In the United Kingdom, a ‘pub’ is a retail establishment, selling beer, wine, food, etc., for consumption on the premises, and is similar to a ‘bar’ in other parts of the world.

(Total marks = 10)

Question 7

The following passage discusses changes in the price of oil:

Between December 1973 and June 1974, the Organisation of Petroleum Exporting Countries (OPEC) put up the price of oil from $3 to $12 per barrel. The price was raised to $30 in 1979. In the 1980s the price fluctuated, but the trend was downwards. By 1993 the price was $16 per barrel: in real terms (i.e. after correcting for inflation) the price was back to its pre-1973 level.

The initial rise in price was achieved by OPEC members restricting their output of oil by agreed amounts. The amount by which output had to be restricted in order to achieve the rise in price was relatively small because, in the short run, the demand for oil was highly price inelastic.

In the long run it was more difficult for OPEC to maintain the price of oil. In the long run the demand for oil was much more price elastic than in the short run. Consumers could begin to economise on the use of oil and to find substitute sources of power. Thus, the long-run demand curve would be much more elastic than the short-run curve. Moreover, income growth in the main industrial economies was slowing down under the impact of serious recessions, and this affected the demand for oil.

To make matters worse for the OPEC producers, there was also a long-run supply response to their initial raising of the price of oil. The higher price of oil made oil production much more profitable and there was thus an incentive for non-OPEC producers to increase their output. An obvious example of this is North Sea oil. Moreover,
OPEC members themselves were tempted to break their agreed ‘quotas’ and sell more oil. Thus, the supply curve for oil shifted, with each new supply curve representing an increased number of oil fields in operation.

**Requirements**

Using *both* your knowledge of economic theory and material contained in the passage:

(a) Identify the correct word(s) to complete each of the following statements.

(i) If the price elasticity of demand for oil is low, a reduction in supply will cause a large/small/equal change in the price of oil.

(ii) OPEC is an example of a monopoly/oligopoly/cartel where producers collude to limit output and raise prices.

(iii) A rise in oil prices might reduce the demand for large-engine cars; this is an example of price sensitivity/income elasticity of demand/cross elasticity of demand.

(iv) In the long run the price elasticity of demand for oil will be high because consumers will reduce their demand for oil/find other sources of supply of oil/find substitute for oil.

(v) Oil prices tend to fluctuate a great deal because both the demand and supply of oil are highly price elastic/price inelastic/income elastic.

(b) State whether each of the following are true or false.

(i) Over time the demand for oil will rise faster than income because the income elasticity of demand for oil is positive.

(ii) If the short run supply curve of oil is highly price inelastic, a fall in demand for oil in a recession will only produce a small fall in the price of oil.

(iii) The long run supply of oil is more price elastic than the short run supply.

(iv) The demand for oil is price inelastic because there are few substitutes.

(v) Because there is a single world price for oil, the oil market is an example of a perfect market.

(5 marks)

(Total marks = 10)

**Question 8**

The following data refer to the cost and revenue schedules of a business:

<table>
<thead>
<tr>
<th>Quantity sold</th>
<th>Price</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>£-</td>
<td>£12</td>
</tr>
<tr>
<td>1</td>
<td>£16</td>
<td>£20</td>
</tr>
<tr>
<td>2</td>
<td>£14</td>
<td>£25</td>
</tr>
<tr>
<td>3</td>
<td>£12</td>
<td>£30</td>
</tr>
<tr>
<td>4</td>
<td>£10</td>
<td>£34</td>
</tr>
<tr>
<td>5</td>
<td>£8</td>
<td>£45</td>
</tr>
<tr>
<td>6</td>
<td>£6</td>
<td>£66</td>
</tr>
<tr>
<td>7</td>
<td>£4</td>
<td>£110</td>
</tr>
</tbody>
</table>
Requirements
Using both your knowledge of economic theory and the data above:

(a) Calculate for each level of sales:
   (i) the marginal revenue;
   (ii) the marginal cost.

   (4 marks)

(b) Calculate:
   (i) the price elasticity of demand for a price rise from £10 to £12;
   (ii) the profit maximizing level of sales and the total profits made at this point.

   (2 marks)

(c) State whether each of the following statements is true or false:
   (i) The short run is defined as that period of time when all factors of production are fixed.
   (ii) In the long run firms can secure economies of scale and the long-run average cost curve is downward sloping.
   (iii) The data given above shows that the firm is not operating under perfect competition.
   (iv) In the short run firms can only gain normal profits.

   (4 marks)

   (Total marks = 10)

Question 9
A profitable airline is considering the introduction of a new transatlantic flight and is faced with the following costs per flight:

£

Fuel charges 10,000
Depreciation 700
Insurance 300
Landing charges 500
Interest 500
Labour 5,000
Other fixed costs 5,000

Requirements
Using both your knowledge of economic theory and the data given above:

(a) State which of the following are fixed costs and which are variable costs.
   (i) Insurance;
   (ii) Fuel charges;
   (iii) Interest;
   (iv) Landing charges.

   (4 marks)

(b) Assuming that there is a maximum seating capacity of 300 persons:
   (i) calculate the minimum short-run price that must be charged on this flight;

   (2 marks)

   (ii) calculate what price the airline must charge to remain in business in the long run.

   (2 marks)
(c) State whether each of the following statements is true or false.

(i) The airline could raise revenue by reducing prices if the demand for seats was price elastic.

(ii) The emergence of new competitors would shift the demand curve for this airline to the right.

(2 marks)
(Total marks = 10)

Question 10

The minimum efficient scale (MES) refers to that level of output for a business at which most economies of scale have been gained and the long-run average cost curve is becoming horizontal.

The following data refers to the MES of factories for a variety of industries in the United Kingdom and the United States, expressed as a percentage of the domestic market for the product. It also shows how much average cost (AC) would rise if factory size were only one-third of the MES.

<table>
<thead>
<tr>
<th>Industry</th>
<th>MES as % of US market</th>
<th>MES as % of UK market</th>
<th>% increase in MES at 1/3 MES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement</td>
<td>1.7</td>
<td>6.1</td>
<td>26.0</td>
</tr>
<tr>
<td>Steel</td>
<td>2.6</td>
<td>15.4</td>
<td>11.0</td>
</tr>
<tr>
<td>Fibres</td>
<td>0.2</td>
<td>1.8</td>
<td>7.6</td>
</tr>
<tr>
<td>Refrigerators</td>
<td>14.1</td>
<td>83.3</td>
<td>6.5</td>
</tr>
<tr>
<td>Oil refining</td>
<td>1.9</td>
<td>11.6</td>
<td>4.8</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>6.5</td>
<td>30.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Shoes</td>
<td>0.2</td>
<td>0.6</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Requirements

Using both your knowledge of economic theory and the data given above:

(a) State which industry shows the strongest economies of scale and which industry shows the weakest economies of scale. (2 marks)

(b) Identify the correct word or phrase in the following to complete each of the following statements.

(i) Internal commercial economies of scale can only be obtained when the industry/plant/company increases in size.

(ii) Diseconomies of scale occur when the business becomes inefficient/technically outdated/too large and, in consequence, costs begin to rise.

(iii) External economies of scale reduce the costs of all firms when suppliers become more efficient/the industry becomes larger/social costs of production are reduced.

(iv) Technical economies of scale arise when a company is large enough to adopt new technology/invest in research and development/produce on a large scale.

(4 marks)

(c) State whether each of the following statements is true or false.

(i) Economies of scale act as a barrier to entry to an industry.

(ii) If there are significant economies of scale, the numbers of firms in an industry will tend to be small.

(iii) Diseconomies of scale cause the short-run average cost curve to rise.

(4 marks)
(iv) If output rises at the same rate as average cost rises, this is called constant returns to scale.

(4 marks)
(Total marks = 10)

**Question 11**

The following diagram represents the demand and supply for a particular good over a period of time:

![Diagram showing demand curve D1 and supply curve S1]

**Requirements**

Using both your knowledge of economic theory and the diagram above:

(a) With respect to the diagram answer the following questions.

(i) Would the imposition of an indirect tax shift the supply curve or the demand curve?

(ii) Would the burden of tax be shifted most to consumers when the demand curve for the product was price elastic or price inelastic?

(iii) Would the government get the most tax revenue from imposing the tax if the demand for the product was price elastic or price inelastic?

(iv) Would the sales/output of the good fall most when the demand for the good was price elastic or price inelastic?

(4 marks)

(b) Identify from the following the two factors that would make the demand for a good less price elastic.

- Many substitutes.
- A small proportion of income spent on the good.
- A short time period under consideration.
- A high price for the good.
- A restricted supply of the good.

(2 marks)

(c) State whether each of the following statements is true or false.

(i) The heaviest indirect taxes tend to be on goods with a high price elasticity of demand.

(ii) An indirect tax is one where the incidence and the burden of the tax fall on different persons.

(2 marks)
(iii) Indirect taxes on imported goods are desirable since the burden of the tax falls on the foreign producer.
(iv) Direct taxes are preferred to indirect taxes because they are always progressive.

(4 marks)
(Total marks = 10)

Question 12

The following passage is based on a newspaper article:

The Office of Fair Trading (OFT) has cleared the supermarkets and leading oil companies of unfairly low pricing. But petrol retailers, who fear the closure of smaller petrol stations, reacted angrily. Their spokesman said that OFT had failed to protect consumers, who would have to pay higher prices in the future.

The director of the OFT said its investigation had found no evidence of unfair competition despite the rapid decline in the numbers of small, independent petrol stations. There have been major changes in the industry since 1990, with supermarkets taking more than 20 per cent of the £20 billion market, and the number of smaller retailers falling to 10,000 compared with 40,000 in the 1960s; but the director insisted that competition between supermarkets and major oil companies had been in the consumers’ interests.

He pointed to a fall of one-third in the real selling price of petrol received by retailers. In 1990 a retailer would receive 15p per litre of petrol. The equivalent now is just 10p. This had led to a drop of a third in the profit margin, from 6p to 4p a litre, and reflects what the director called ‘a vigorous struggle between the supermarkets and the major petrol retailers’. The battle for market share saw a fierce price war two years ago, initiated by Esso. But prices have recovered, and independent retailers warned that they would continue to rise as more small retailers were forced out of business.

Requirements

Using both your knowledge of economic theory and information in the passage:

(a) Identify the appropriate words to complete the following sentence.
Economies of scale occur whenever an increase in the size of the business results in a decrease in average costs/a rise in profit margins/an increase in revenue. In the retail petrol industry smaller companies cannot compete with larger firms and the evidence of this is a falling profit margin/reduced income for retailers/a fall in the number of smaller retailers. The dominance of large petrol retailers may not be in the interest of consumers because in the long run there will be fewer retailers/large retailers may experience diseconomies of scale/prices may rise.

(3 marks)

(b) Identify from the following list which two are examples of internal commercial economies of scale.
Advertising costs are spread over a larger output.
Large scale production reduces unit costs.
Fixed costs are spread over a larger output.
Specialist suppliers develop as the industry gets bigger.
Bulk buying from suppliers reduced costs per unit.

(2 marks)

(c) State whether each of the following statements is true or false.
(i) The demand for petrol is price inelastic because there are no real substitutes.
(ii) The demand for any brand of petrol is price elastic because there are many substitutes.

(iii) The fierce price wars in the petrol market show that this industry is not an oligopoly.

(iv) Heavy advertising is a typical feature of oligopoly markets.

(v) Oligopoly markets rarely show formal or informal collusion between firms.

(5 marks)

(Total marks = 10)

Question 13

The following data refers to consumer expenditure in the United Kingdom:

<table>
<thead>
<tr>
<th></th>
<th>£ billion in 1985 prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer-durable goods</td>
<td>9.4</td>
</tr>
<tr>
<td>Food</td>
<td>29.1</td>
</tr>
<tr>
<td>Drink and tobacco</td>
<td>19.7</td>
</tr>
<tr>
<td>Clothing and footwear</td>
<td>8.9</td>
</tr>
<tr>
<td>Energy products</td>
<td>14.4</td>
</tr>
<tr>
<td>Other goods</td>
<td>15.2</td>
</tr>
<tr>
<td>Rent, water and rates</td>
<td>20.7</td>
</tr>
<tr>
<td>Other services</td>
<td>40.6</td>
</tr>
<tr>
<td>Total expenditure</td>
<td>158.0</td>
</tr>
</tbody>
</table>

Requirements

Using both your knowledge of economic theory and the data given above:

(a) With respect to the data in the table,
   (i) identify the two categories of goods and services which have shown the fastest demand growth since 1970;  
       (2 marks)
   (ii) identify the two categories of goods and services which have shown the slowest demand growth since 1970.  
       (2 marks)

(b) With respect to the income elasticity of demand,
   (i) Identify which of the following are the two variables that determine the income elasticity of demand for a good:
       Price
       Income
       Proportionate change in demand
       The level of demand
       Proportionate change in income.  
       (2 marks)
   (ii) state whether you would expect the income elasticity of demand to be highest for a luxury good or a necessity;  
       (1 mark)

(c) State whether each of the following statements is true or false.
   (i) In a recession, demand will fall most for goods with a low income elasticity of demand.  
       (1 mark)
An inferior good is one that has a negative income elasticity of demand. The demand for consumer durable goods fluctuates over the trade cycle because the purchase of these goods can be postponed. (3 marks) (Total marks = 10)

**Question 14**

The following data refer to the revenue and costs of a firm:

<table>
<thead>
<tr>
<th>Output</th>
<th>Total revenue (£)</th>
<th>Total costs (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>110</td>
</tr>
<tr>
<td>1</td>
<td>50</td>
<td>140</td>
</tr>
<tr>
<td>2</td>
<td>100</td>
<td>162</td>
</tr>
<tr>
<td>3</td>
<td>150</td>
<td>175</td>
</tr>
<tr>
<td>4</td>
<td>200</td>
<td>180</td>
</tr>
<tr>
<td>5</td>
<td>250</td>
<td>185</td>
</tr>
<tr>
<td>6</td>
<td>300</td>
<td>194</td>
</tr>
<tr>
<td>7</td>
<td>350</td>
<td>219</td>
</tr>
<tr>
<td>8</td>
<td>400</td>
<td>269</td>
</tr>
<tr>
<td>9</td>
<td>450</td>
<td>325</td>
</tr>
<tr>
<td>10</td>
<td>500</td>
<td>425</td>
</tr>
</tbody>
</table>

**Requirements**

Using *both* your knowledge of economic theory *and* the data given above:

(a) From the data above calculate:

(i) marginal revenue for every level of output; (2 marks)

(ii) marginal cost for every level of output; (2 marks)

(iii) the firm’s fixed costs. (2 marks)

(b) Assuming that the firm is a profit maximiser, state:

(i) the level of output the firm will aim to produce; (2 marks)

(ii) the total level of profit at this level of output. (2 marks)

(Total marks = 10)

**Question 15**

The following diagram shows the cost and revenue curves for a monopoly firm selling its products in two separate markets:

![Diagram](image.png)
Requirements
Using both your knowledge of economic theory and the diagram:

(a) With the use of the diagram
   (i) show the total output the firm will aim to produce;  
   (ii) show the share of output allocated to each market;  
   (iii) identify the price that the firm will charge in each market.  

(b) State whether each of the following is true or false:
   (i) Monopolists always charge higher prices than competitive firms.
   (ii) Monopolists are inefficient because they always produce at less than optimum output.
   (iii) Monopolists can fix price or output, but not both.
   (iv) In the long run, a monopolist cannot earn more than normal profit.

(Total marks = 10)

Question 16
The following passage is based on newspaper articles and refers to the market for coffee:

Supermarkets recently ended ten years of cheap coffee when some raised the price of their own brands of instant coffee by up to 12 per cent.

Reports of severe frost damage to Brazilian coffee plantations sent the open market price of coffee beans up from $3100 a ton to $4000 a ton – the highest price since 1986. Even before the frost damage, the price had been rising because many coffee farmers, discouraged by the previous low price of coffee, had moved away to other crops in the search for more profit.

The current price increases will end a golden age for coffee drinkers. From 1986 to 1993, the retail price of coffee had fallen by more than 15 per cent; given that these were years of rapid inflation, the real price of coffee fell even more steeply. The result was a boom in coffee drinking, and coffee sales in the United Kingdom exceeded those of tea. Rising coffee prices may now lead to a switch back to tea drinking. This happened in the 1970s when sharp rises in coffee prices encouraged many coffee drinkers to switch their consumption to tea.

Requirements
Using both your knowledge of economic theory and information in the passage:

(a) With reference to the concept of the price elasticity of demand,
   (i) which one of the following is the correct measurement of the price elasticity of demand for coffee?

   1. $\frac{\text{% change in price of coffee}}{\text{% change in the demand for coffee}}$
   2. $\frac{\text{change in the demand for coffee}}{\text{change in the price of coffee}}$
   3. $\frac{\text{% change in the demand for coffee}}{\text{% change in the price of coffee}}$

(Total marks = 10)
(ii) if the price elasticity of demand for coffee has a value of \(-2\) would the demand be said to be
1. price elastic or
2. price inelastic or
3. of unitary elasticity?

(1 mark)

(iii) if the demand for coffee was price inelastic, would the result of a shift in the supply of coffee to the left be,
1. a large fall in price and small fall in sales or
2. a large rise in price and large fall in sales or
3. a large rise in price and a small fall in sales or
4. a small rise in price and a large fall in sales or
5. a small fall in price and a large rise in sales?

(2 marks)

(iv) if there was a high positive cross elasticity of demand between coffee and tea and the supply of tea was price inelastic, would the result of a rise in the price of coffee be
1. a small rise in the sales of tea and small rise in its price or
2. a large rise in the sales of tea and a large rise in its price or
3. a small rise in the sales of tea and a large rise in its price or
4. a large rise in sales of tea and small rise in its price?

(2 marks)

(b) State whether each of the following statements are true or false.
(i) A change in supply of coffee will have the largest effect on the price of coffee when the demand is price elastic.
(ii) The cross elasticity of demand measures the relationship between the demand for one commodity and the demand for another.
(iii) If a cross elasticity of demand has a negative value it shows that the two goods are complements.
(iv) If the real price of coffee fell it means that its price fell relative to the general level of prices.

(4 marks)

(Total marks = 10)

The Macroeconomic Framework

Question 17 Multiple-choice selection
17.1 Venture capital is best described as:

(A) investment funds provided for established companies.
(B) short-term investment in Eurocurrency markets.
(C) capital funds that are highly mobile between financial centres.
(D) equity finance in high-risk enterprises.
17.2 Which one of the following can be used by governments to finance a public-sector borrowing requirement (public-sector net borrowing)?
(A) A rise in direct taxation.
(B) The sale of public assets.
(C) An increase in interest rates.
(D) An issue of government savings certificates.

17.3 Other things being equal, all of the following would lead to a rise in share prices except which one?
(A) A rise in interest rates.
(B) A reduction in corporation tax.
(C) A rise in company profits.
(D) A decline in the number of new share issues.

17.4 Which one of the following can be used by governments to finance public sector financial deficit?
(A) A rise in direct taxation.
(B) The sale of public assets.
(C) An increase in interest rates.
(D) An issue of government savings certificates.

17.5 Which one of the following is a transfer payment in national income accounting?
(A) Educational scholarships.
(B) Salaries of lecturers.
(C) Payments for textbooks.
(D) Payments of examination entry fees.

17.6 Which one of the following is not a function of a central bank?
(A) Management of the National Debt.
(B) Holder of the foreign exchange reserves.
(C) The conduct of fiscal policy.
(D) Lender of the last resort.

17.7 Which one of the following is likely to result from an increase in the size of the public-sector net borrowing?
(A) A decrease in the level of inflation.
(B) A reduction in the level of taxation.
(C) A rise in the price of shares.
(D) A rise in the rate of interest.

17.8 Which one of the following is a withdrawal from the circular flow of income?
(A) Investment.
(B) Exports.
(C) Taxation.
(D) Profits.

17.9 The theory of the natural rate of unemployment says that:
(A) there is no inflation–unemployment trade-off in the long run.
(B) the short-run Phillips curve is steeper than the long-run Phillips curve.
(C) there will always be some workers seeking employment who cannot find jobs.
(D) there is always some frictional unemployment in an economy.
17.10 All of the following are consequences of inflation except which one?
(A) Wealth is shifted from creditors to debtors.
(B) Income-earners are, on average, made poorer in real terms.
(C) Governments receive more tax revenue.
(D) The internal purchasing power of money declines.

17.11 An inflationary gap exists in an economy when:
(A) the government has a budget deficit.
(B) aggregate demand is greater than the full employment level of income.
(C) withdrawals exceed injections at the full employment level of income.
(D) the money supply rises faster than the national income.

17.12 All of the following would be likely to occur if there was a reduction in the money supply in an economy, except which one?
(A) A fall in the rate of inflation.
(B) A rise in the exchange rate.
(C) A rise in interest rates.
(D) An increase in the demand for money.

Question 18

The following diagram is known as the economic diamond and is used to illustrate how well an economy is performing in terms of the major objectives of economic policy.

![Economic Diamond Diagram]

Requirements
Using both your knowledge of economic theory and the material contained in the diagram:

(a) With respect to the economic diamond state whether the normal effect of a rapid rise in the rate of economic growth would be to raise, lower or leave unaffected the following:
   (i) the level of unemployment;
   (ii) the rate of inflation;
   (iii) the deficit on current account of the balance of payments.

(3 marks)
(b) With respect to the economic diamond state whether the normal effect of a rapid rise in unemployment would be to raise, lower or leave unaffected the following:

(i) the rate of inflation;
(ii) the current account of the balance of payments;
(iii) the rate of economic growth.

(3 marks)

c) State whether each of the following statements are true or false:

(i) Inflation redistributes wealth from those who own financial assets to those who have debts.
(ii) A rise in import prices would be an example of cost push inflation.
(iii) A deflationary monetary policy would involve lowering interest rates to discourage business investment.
(iv) Inflation tends to be higher in the downswing phase of the trade cycle.

(4 marks)

(Total marks = 10)

Question 19

The following data refer to the UK economy:

<table>
<thead>
<tr>
<th>Year</th>
<th>Change in gross domestic product from previous year (%)</th>
<th>Change in business investment (exc. dwellings) from previous year (%)</th>
<th>Level of interest rates (LIBOR) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>+3.5</td>
<td>+10.1</td>
<td>9</td>
</tr>
<tr>
<td>1979</td>
<td>+2.8</td>
<td>+3.4</td>
<td>13</td>
</tr>
<tr>
<td>1980</td>
<td>-2.0</td>
<td>-3.9</td>
<td>17</td>
</tr>
<tr>
<td>1981</td>
<td>-1.1</td>
<td>-4.8</td>
<td>13</td>
</tr>
<tr>
<td>1982</td>
<td>+1.7</td>
<td>+8.4</td>
<td>12</td>
</tr>
<tr>
<td>1983</td>
<td>+3.7</td>
<td>-2.0</td>
<td>10</td>
</tr>
<tr>
<td>1984</td>
<td>+2.0</td>
<td>+4.9</td>
<td>10</td>
</tr>
<tr>
<td>1985</td>
<td>+4.0</td>
<td>+4.1</td>
<td>12</td>
</tr>
<tr>
<td>1986</td>
<td>+4.0</td>
<td>+0.5</td>
<td>10</td>
</tr>
<tr>
<td>1987</td>
<td>+4.6</td>
<td>+17.3</td>
<td>9</td>
</tr>
<tr>
<td>1988</td>
<td>+4.9</td>
<td>+17.8</td>
<td>9</td>
</tr>
<tr>
<td>1989</td>
<td>+2.2</td>
<td>+6.1</td>
<td>14</td>
</tr>
<tr>
<td>1990</td>
<td>+0.6</td>
<td>-3.1</td>
<td>15</td>
</tr>
<tr>
<td>1991</td>
<td>-2.3</td>
<td>-9.5</td>
<td>11</td>
</tr>
<tr>
<td>1992</td>
<td>-0.5</td>
<td>-5.1</td>
<td>10</td>
</tr>
<tr>
<td>1993</td>
<td>+2.0</td>
<td>-0.7</td>
<td>6</td>
</tr>
<tr>
<td>1994</td>
<td>+3.0</td>
<td>+4.6</td>
<td>5</td>
</tr>
</tbody>
</table>

(Source: HMSO Economic Trends)
Requirements

Using both your knowledge of economic theory and the data above:

(a) With reference to the data given above:
   (i) identify one 2-year period of recession in the UK economy and one 2-year period of boom in the UK economy;  
      (2 marks)
   (ii) state whether the apparent relationship between the rate of interest and the level of business investment is positive or negative or whether there is no relationship;  
      (1 mark)
   (iii) state whether the apparent relationship between the level of business investment and the rate of growth of GDP is positive or negative or whether there is no relationship.  
      (1 mark)

(b) State whether each of the following statements is true or false:
   (i) The accelerator principle shows how the level of investment is affected by the rate of change in demand for goods.  
   (ii) Most business investment in the United Kingdom is financed by bank borrowing.  
   (iii) Investment is an injection into the circular flow of income.  
   (iv) Investment expenditure varies over the trade cycle by more than consumption expenditure.  
   (v) For national income to be in equilibrium, savings and investment must be equal.  
   (vi) The main external source of funds for business investment is the money market.  
      (6 marks)
      (Total marks = 10)

? Question 20

The following diagram shows the relationship between income and expenditure for an economy:
Requirements

Using both your knowledge of economic theory and the diagram above:

(a) With reference to the diagram, state what are the following:

(i) two components of the expenditure curve; (2 marks)
(ii) the equilibrium level of national income; (1 mark)
(iii) the deflationary gap. (1 mark)

(b) State what would happen to the equilibrium level of national income if there was:

(i) an increase in the marginal propensity to save; (4 marks)
(ii) a move toward surplus on the current account of the balance of payments;
(iii) a decrease in personal taxation;
(iv) an increase in stockholding by businesses.

(c) State whether each of the following statements are true or false:

(i) A reflationary fiscal policy may involve a positive PSNCR which will have to be financed by borrowing. (2 marks)
(ii) A deflationary monetary policy will tend to reduce sales revenue for the business sector but lead to a deterioration in the trade balance by reducing exports.

(Total marks = 10)

Question 21

The following data refer to an economy between 1987 and 1997:

<table>
<thead>
<tr>
<th>Year</th>
<th>Real gross domestic product (GDP) (£billion)</th>
<th>Inflation (increase in the RPI (%))</th>
<th>Consumer credit (increase in lending to consumers (£billion))</th>
<th>Interest rate (Bank base rate (%))</th>
<th>Sales of cars (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>515</td>
<td>4.2</td>
<td>6.3</td>
<td>8.9</td>
<td>2.184</td>
</tr>
<tr>
<td>1988</td>
<td>542</td>
<td>4.6</td>
<td>6.9</td>
<td>8.9</td>
<td>2.403</td>
</tr>
<tr>
<td>1989</td>
<td>552</td>
<td>8.3</td>
<td>6.8</td>
<td>14.2</td>
<td>2.494</td>
</tr>
<tr>
<td>1990</td>
<td>552</td>
<td>9.8</td>
<td>4.6</td>
<td>15.0</td>
<td>2.179</td>
</tr>
<tr>
<td>1991</td>
<td>540</td>
<td>5.8</td>
<td>2.3</td>
<td>11.2</td>
<td>1.708</td>
</tr>
<tr>
<td>1992</td>
<td>540</td>
<td>3.9</td>
<td>0.5</td>
<td>10.0</td>
<td>1.694</td>
</tr>
<tr>
<td>1993</td>
<td>548</td>
<td>1.2</td>
<td>2.6</td>
<td>5.9</td>
<td>1.853</td>
</tr>
<tr>
<td>1994</td>
<td>572</td>
<td>2.6</td>
<td>5.7</td>
<td>5.2</td>
<td>1.991</td>
</tr>
<tr>
<td>1995</td>
<td>587</td>
<td>3.5</td>
<td>8.2</td>
<td>6.7</td>
<td>2.024</td>
</tr>
<tr>
<td>1996</td>
<td>601</td>
<td>2.1</td>
<td>11.2</td>
<td>5.9</td>
<td>2.093</td>
</tr>
<tr>
<td>1997</td>
<td>620</td>
<td>3.1</td>
<td>12.1</td>
<td>6.9</td>
<td>2.157</td>
</tr>
</tbody>
</table>
**Requirements**
Using both your knowledge of economic theory and the data given above:

(a) (i) Identify two data series that show that the economy experienced a recession during the period.  
(ii) State what each of the following elements of the quantity theory of money stands for:  
\[ MV = PT \]  

(b) State whether the following statements are true or false:
(i) The data shows that inflation is higher whenever consumer credit grows rapidly.  
(ii) Real interest rates were highest in 1991.  
(iii) Monetarists do not believe that cost push inflation is possible.  
(iv) The data shows that increased inflation is a typical feature of recessions.

(Total marks = 10)

**Question 22**
The following diagram is a stylised Phillips curve diagram.

**Requirements**
Use both your knowledge of economic theory and the diagram above to answer the following:

(a) With respect to the diagram:
(i) State whether each of the following would shift the Phillips curve to the right (I to II) or to the left (II to I);
- increased cost push inflation
- a decrease in structural unemployment
- a successful supply side policy.

(3 marks)
(ii) State whether each of the following would move the economy downwards on a given Phillips curve (towards the horizontal axis) or upwards along the curve (towards the vertical axis): an expansionary fiscal policy a significant rise in exports a large fall in business investment.

(3 marks)

(b) State whether each of the following is an example of supply side policy or fiscal policy:

(i) Income tax cuts to encourage work and effort.
(ii) Tax rise and public expenditure cuts to reduce the budget deficit.
(iii) Reductions in expenditure on unemployment pay.
(iv) General tax cuts without reducing public expenditure.

(4 marks)

(Total marks = 10)

Question 23

The following data refer to prices and gross domestic product (GDP) in some European countries:

<table>
<thead>
<tr>
<th>Real GDP 1997 (1990 = 100)</th>
<th>Consumer prices index 1997 (1990 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>112.4</td>
</tr>
<tr>
<td></td>
<td>114.2</td>
</tr>
<tr>
<td>Finland</td>
<td>99.2</td>
</tr>
<tr>
<td></td>
<td>116.0</td>
</tr>
<tr>
<td>France</td>
<td>109.7</td>
</tr>
<tr>
<td></td>
<td>115.6</td>
</tr>
<tr>
<td>Germany</td>
<td>120.9</td>
</tr>
<tr>
<td></td>
<td>123.0</td>
</tr>
<tr>
<td>Holland</td>
<td>111.9</td>
</tr>
<tr>
<td></td>
<td>117.4</td>
</tr>
<tr>
<td>Norway</td>
<td>123.0</td>
</tr>
<tr>
<td></td>
<td>116.5</td>
</tr>
<tr>
<td>Spain</td>
<td>111.0</td>
</tr>
<tr>
<td></td>
<td>133.6</td>
</tr>
<tr>
<td>UK</td>
<td>110.6</td>
</tr>
<tr>
<td></td>
<td>122.2</td>
</tr>
</tbody>
</table>

(Source: Main Economic Indicators, OECD)

Requirements

Using both your knowledge of economic theory and data given in the table:

(a) From the table, identify which countries had:

(i) the highest and lowest rates of inflation;       (2 marks)
(ii) the highest and lowest rates of economic growth. (2 marks)

(b) State whether each of the following statements is true or false:

(i) In a recession the government budget tends to move automatically towards a deficit.
(ii) The retail price index is the best measure of inflation for the economy as a whole.
(iii) The imposition of limits on imports tends to be inflationary.
(iv) The Phillips curve shows the relationship between inflation and the rate of growth in an economy.
(v) Real wages are nominal wages deflated by the rate of inflation.
(vi) To slow down cost push inflation, governments should attempt to reduce aggregate demand.

(6 marks)

(Total marks = 10)
Question 24

The following passage and diagram refer to the recession of 1979–83 in the United Kingdom:

That high interest rates have been an important cause of the recession is beyond dispute, especially as the recession has taken the form of an unprecedented rate of destocking and a fall in fixed investment rather than any collapse of private or public consumption. The diagram shows that the overdraft rate for first-class borrowers, less the increase in wholesale output prices, reached 10 per cent at its peak towards the end of 1980 because the fall in the inflation rate was greater than the 3 per cent drop in nominal interest rates in the second half of the year.

Requirements

Using both your knowledge of economic theory and information given:

(a) (i) Identify from the diagram the years when real interest rates were highest and lowest.  

(ii) State whether the following processes would result from a rise in real interest rates or a fall in real interest rates: a rise in business investment a fall in consumer demand a high exchange rate an increase in consumer borrowing.

(b) State which of the following statements are true or false:

(i) Governments may wish to maintain high interest rates to limit aggregate demand so as to prevent cost push inflation.

(ii) If a government has a high exchange rate target, it will need to set high interest rates to encourage inflows of capital to maintain the demand for the currency.

(iii) A consequence of joining the single European currency is that members all have the same interest rates and cannot use monetary policy to manage their own economies.

(iv) High real interest rates discourage investment and savings and thus lead to slower economic growth.

(Total marks = 10)
**Question 25**

The following diagram shows the aggregate demand curve (AD) and the aggregate supply curve (AS) for an economy:

![Diagram of AD and AS curves]

**Requirements**

Using both your knowledge of economic theory and the diagram given:

(a) With reference to the diagram show what would happen to national output if there were:
   - (i) a negative supply shock;
   - (ii) a positive supply shock;
   - (iii) an expansionary fiscal policy;
   - (iv) a deflationary monetary policy.
   
   (4 marks)

(b) With reference to supply side policy state whether each of the following is an example of supply side policy or not.
   - Tax cuts to encourage work and effort.
   - Increased expenditure on social welfare.
   - Reductions in the legal powers of trade unions.
   - General tax cuts without decreasing public expenditure.

   (4 marks)

(c) State whether each of the following is true or false:
   - (i) If governments respond to a negative supply shock with a reflationary fiscal policy, the result will higher output and higher inflation.
   - (ii) An increase in oil prices would produce a positive supply shock for importing countries.

   (2 marks)

(Total marks = 10)
Question 26
The following refers to the Japanese economy in the 1990s:

### Table 1  Gross domestic product (1996)

<table>
<thead>
<tr>
<th></th>
<th>Billions Yen</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Private consumption expenditure</td>
<td>299,440</td>
<td>59.8</td>
</tr>
<tr>
<td>2. Domestic fixed capital formation</td>
<td>148,190</td>
<td>29.6</td>
</tr>
<tr>
<td>3. Government consumption expenditure</td>
<td>48,969</td>
<td>9.6</td>
</tr>
<tr>
<td>4. Stockbuilding</td>
<td>1,058</td>
<td>0.2</td>
</tr>
<tr>
<td>5. Exports</td>
<td>49,589</td>
<td>9.9</td>
</tr>
<tr>
<td>6. Imports</td>
<td>−46,900</td>
<td>−9.1</td>
</tr>
<tr>
<td><strong>Gross domestic product</strong></td>
<td><strong>500,355</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

### Table 2  Growth rates of GDP components (% per annum)

<table>
<thead>
<tr>
<th></th>
<th>GDP</th>
<th>Consumption</th>
<th>Investment</th>
<th>Government expenditure</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>4.8</td>
<td>4.4</td>
<td>8.8</td>
<td>4.3</td>
<td>5.7</td>
</tr>
<tr>
<td>1991</td>
<td>3.8</td>
<td>2.3</td>
<td>2.8</td>
<td>3.8</td>
<td>−0.9</td>
</tr>
<tr>
<td>1992</td>
<td>1.0</td>
<td>2.2</td>
<td>−2.0</td>
<td>2.8</td>
<td>−0.3</td>
</tr>
<tr>
<td>1993</td>
<td>0.3</td>
<td>1.7</td>
<td>−2.8</td>
<td>2.9</td>
<td>−7.3</td>
</tr>
<tr>
<td>1994</td>
<td>0.6</td>
<td>2.5</td>
<td>−2.4</td>
<td>2.0</td>
<td>0.3</td>
</tr>
<tr>
<td>1995</td>
<td>1.4</td>
<td>2.1</td>
<td>0.2</td>
<td>4.6</td>
<td>2.8</td>
</tr>
<tr>
<td>1996</td>
<td>3.6</td>
<td>3.0</td>
<td>8.3</td>
<td>2.9</td>
<td>9.2</td>
</tr>
</tbody>
</table>

### Requirements
Using both the data given above and your knowledge of economic theory:

(a) (i) From table 1 identify the three injections into the circular flow.  
       (3 marks)
(ii) State whether slow GDP growth would be expected to raise, lower or be of no  
     effect on each of the following:  
     • the level of employment;  
     • the government budget surplus;  
     • the level of imports.  
       (3 marks)

(b) State whether each of the following statements are true or false:
(i) A policy of low interest rates would help boost both investment and exports.  
(ii) Fiscal expansion may be of limited value because it may crowd out private  
     investment.  
(iii) With negative inflation in Japan, real interest rates will never be positive.  
(iv) Rapid growth in GDP might raise inflation but it would also improve the trade  
     balance.  
       (4 marks)
(Total marks = 10)
The Open Economy

Question 27 Multiple-choice selection

27.1 Which one of the following would not lead to a depreciation (fall) in the sterling exchange rate?

(A) A reduction in UK interest rates relative to world interest rates.
(B) An increase in overseas investment by UK companies.
(C) An increase in UK exports.
(D) Expectations of falling exchange rates.

27.2 A devaluation of the exchange rate for a country’s currency will normally result in:

(i) a reduction in the current account deficit.
(ii) an improvement in the country’s terms of trade.
(iii) a reduction in the domestic cost of living.
(iv) an increased level of domestic economic activity.

(A) (i) and (ii) only.
(B) (i) and (iv) only.
(C) (ii) and (iii) only.
(D) (ii) and (iv) only.

27.3 All of the following would raise the demand for imports in a country except which one?

(A) A rise in consumer incomes.
(B) A reduction in tariffs.
(C) A rise in the domestic price level.
(D) A devaluation of the exchange rate.

27.4 All of the following would increase the potential benefits of international trade except which one?

(A) The existence of economies of scale in production.
(B) A high mobility of capital and labour between economies.
(C) Large differences in the opportunity costs of production between countries.
(D) Low international transport costs.

27.5 A favourable movement in the terms of trade for a country means that:

(A) the balance of trade has improved.
(B) the volume of exports has risen relative to the volume of imports.
(C) the prices of exports have risen relative to the prices of imports.
(D) the revenue from exports has risen relative to the revenue from imports.

27.6 The imposition of a tariff on imported goods will benefit:

(A) domestic producers.
(B) domestic consumers.
(C) foreign producers.
(D) none of the above.
27.7 A transnational company is one which:
(A) exports goods to more than one country.
(B) buys many of its inputs from overseas countries.
(C) has shareholders in many countries.
(D) has production facilities in more than one country.

27.8 The European Union has all the following features except which one?
(A) The absence of barriers to trade between all member states.
(B) The absence of barriers to the movement of capital between member states.
(C) Common rates of indirect taxation.
(D) A common external tariff.

27.9 All of the following are included as invisible items on the current account of the balance of payments except which one?
(A) Flows of profits from assets held overseas.
(B) Inflows of overseas investment.
(C) Expenditure by foreign tourists within the country.
(D) Interest payments received from bank accounts held in other countries.

27.10 Which one of the following would not result from the United Kingdom joining the single European currency (the Euro)?
(A) International transactions costs would rise.
(B) Exchange rate uncertainty would be reduced.
(C) The United Kingdom could no longer operate an independent monetary policy.
(D) There would be increased price transparency between the United Kingdom and other EU countries.

27.11 All of the following are non-tariff barriers to trade, except which one?
(A) import quotas.
(B) voluntary export restraints.
(C) import duties.
(D) subsidies to domestic producers.

27.12 All of the following are benefits of a flexible (floating) exchange rate system, except which one?
(A) Automatic correction of balance of payments deficits.
(B) Interest rates can be determined solely on domestic grounds.
(C) Trade is encouraged by eliminating uncertainty.
(D) Loss of competitiveness is offset by changes in the exchange rate.
Question 28

The following data refers to the pattern of UK trade in goods:

Structure of UK exports and imports

<table>
<thead>
<tr>
<th></th>
<th>1960 (%)</th>
<th>1995 (%)</th>
<th>1960 (%)</th>
<th>1995 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and drink</td>
<td>5</td>
<td>7</td>
<td>33</td>
<td>10</td>
</tr>
<tr>
<td>Fuel and raw materials</td>
<td>8</td>
<td>8</td>
<td>33</td>
<td>7</td>
</tr>
<tr>
<td>Semi-manufactured goods and metals</td>
<td>36</td>
<td>28</td>
<td>22</td>
<td>27</td>
</tr>
<tr>
<td>Finished manufactured goods</td>
<td>48</td>
<td>55</td>
<td>11</td>
<td>55</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Destination of UK exports

<table>
<thead>
<tr>
<th></th>
<th>1960 (%)</th>
<th>1995 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Union</td>
<td>21</td>
<td>58</td>
</tr>
<tr>
<td>Other European countries</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>North America</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Other OECD economies</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Rest of the world</td>
<td>39</td>
<td>20</td>
</tr>
</tbody>
</table>

Based on: A Griffiths and S Wall, Applied Economics (1997)

Requirements

Using both your knowledge of economic theory and the material contained in the tables:

(a) From the date given above identify:
   (i) which destination for UK exports has increased in importance over the period;  
       (1 mark)
   (ii) which two types of exports have increased in importance over the period;  
        (2 marks)
   (iii) which two types of imports have decreased in importance over the period.  
        (2 marks)

(b) State whether each of the following is true or false:
   (i) All countries have a comparative advantage in the production of some goods even if they have an absolute advantage in the production of none.  
   (ii) In international trade the main economic welfare gain for a country comes from its export earnings.
   (iii) A trade surplus is useful as a means of financing the government budget deficit.
   (iv) Trade permits countries to specialise in the production of the goods and services they are efficient at producing.
   (v) An additional benefit of the specialisation made possible by international trade is the cost reduction from securing economies of scale.

       (5 marks)

(Total marks = 10)
Question 29

The following table shows imports as a percentage of total home demand:

<table>
<thead>
<tr>
<th>Imports/home demand</th>
<th>1982 (%</th>
<th>1983 (%)</th>
<th>1984 (%)</th>
<th>1985 (%)</th>
<th>1986 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing industries</td>
<td>29.0</td>
<td>31.1</td>
<td>33.4</td>
<td>34.3</td>
<td>34.3</td>
</tr>
<tr>
<td>Class:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metals</td>
<td>33</td>
<td>36</td>
<td>43</td>
<td>45</td>
<td>48</td>
</tr>
<tr>
<td>Chemicals and man-made fibres</td>
<td>34</td>
<td>36</td>
<td>39</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>Motor vehicles and their parts</td>
<td>47</td>
<td>52</td>
<td>51</td>
<td>50</td>
<td>51</td>
</tr>
<tr>
<td>Food, drink and tobacco</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Textile industry</td>
<td>39</td>
<td>41</td>
<td>44</td>
<td>44</td>
<td>45</td>
</tr>
<tr>
<td>Paper, printing and publishing</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
</tbody>
</table>

Source: Adapted from *Annual Abstract of Statistics* (HMSO, 1988)

Requirements

Using both your knowledge of economic theory and the data above:

(a) With reference to the above data:
   identify those industries which show above-average and below-average levels of import penetration.  
   
(b) State whether each of the following could have been a reason for the increased import penetration into this economy:
   
(i) an undervalued exchange rate for the country’s currency;
(ii) a change in the country’s comparative advantage;
(iii) domestic inflation;
(iv) deflationary policy in the country.

(c) State whether each of the following is true or false:

(i) Import penetration always reduces economic welfare and should therefore be discouraged.
(ii) Trade barriers to prevent import penetration reduce economic welfare in the country imposing them.
(iii) Countries can reduce import penetration by allowing their currencies to depreciate.
(iv) A fall in the price of imports will encourage import penetration and lead to a deterioration in the terms of trade.

(Total marks = 10)

Question 30

The following data refers to a country’s balance of payments accounts, measured in billions of dollars.
Requirements

Using both your knowledge of economic theory and the data above:

(a) Calculate the country’s:
(i) balance of trade;
(ii) balance on current account;
(iii) net flow of foreign direct investment;
(iv) adjusting item to balance the accounts.

(b) State whether each of the following is true or false:
(i) An appreciation in a country’s exchange rate will reduce the price of imported materials for the business sector.
(ii) A depreciation in a country’s exchange rate will make it easier for domestic producers to compete with imports.
(iii) A fixed exchange rate benefits a country’s trading businesses by eliminating currency transactions costs.
(iv) Flexible exchange rate systems are advantageous for the business sector because they provide exchange rate certainty.
(v) Flexible exchange rate systems mean that countries no longer need to hold large reserves of foreign exchange.
(vi) A fixed exchange rate system means that whatever happens in the foreign exchange market, the rate of exchange remains the same.

(Total marks = 10)

Question 31

The following table shows some of the economic characteristics of a group of countries. The data shows total population, gross national product (GNP) and imports and exports. This data shows that the trade ratio (the ratio of exports or imports to GNP) varies considerably.
Requirements
Using both your knowledge of economic theory and the data above:

(a) With reference to the data above:
   (i) identify the two countries with the lowest trade ratios; (2 marks)
   (ii) identify which country has the largest trade surplus; (1 mark)
   (iii) identify which country has the largest trade deficit; (1 mark)
   (iv) identify which country has the highest exports per capita. (1 mark)

(b) State whether each of the following statements is true or false.
   The imposition of tariffs on imported goods will:
   (i) lead to an inefficient allocation of resources; (1 mark)
   (ii) be inflationary; (1 mark)
   (iii) benefit the economy as a whole; (1 mark)
   (iv) benefit the business sector as whole; (1 mark)
   (v) lead to a loss of exports. (1 mark)

(Total marks = 10)

Question 32

The following passage is based on a newspaper article:

The renewed strength of sterling has confounded expectations that it would weaken after a series of interest rate cuts. The pound has remained stubbornly high on the foreign exchanges and has stayed in the $1.60 to $1.70 exchange-rate range for more than two years. It has strengthened considerably against the euro. On a trade-weighted basis, sterling is trading at around 103 compared with around 100 last October.

For manufacturers dependent on international trade, sterling’s recent rise is worrying. A stronger exchange rate erodes the competitiveness of UK-based producers. It also makes foreign imports into the UK cheaper. UK manufacturers therefore must lose market share or cut prices and accept lower profit margins. This effect of sterling’s strength is visible in the UK’s trade with the rest of the world. The trade deficit rose to a record level in January.
**Requirements**

Using *both* your knowledge of economic theory *and* information in the passage:

(a) State whether the effect of each of the following would be to raise or to lower the exchange rate for a country’s currency:
   (i) a rise in interest rates in that country;
   (ii) an increase in the money supply in that country;
   (iii) the imposition, by its trading partners, of tariffs on the country’s exports;
   (iv) a fall in the rate of inflation in the country.

   (4 marks)

(b) Identify the effect of a rise in the exchange rate:
   (i) the country’s terms of trade would *improve/deteriorate*;
   (ii) the country’s balance of trade would *improve/deteriorate*;
   (iii) inflationary pressure in the country would *increase/decrease*;
   (iv) unemployment in the country would *rise/fall*.

   (4 marks)

(c) State whether each of the following statements are *true* or *false*:
   (i) a rise in the exchange rate would mean that to compete with imports companies may have to accept lower prices or cut profit margins.
   (ii) Some businesses may gain if the exchange rate falls as they will pay lower prices for their imports.

   (2 marks)

   (Total marks = 10)

**Question 33**

The following diagram shows the effect of the imposition of a tariff (import tax) on the market for that good in the country which imposed the tariff:
Requirements
Using both your knowledge of economic theory and the diagram, and assuming that $P$ was the price before the tariff was imposed and $P_t$ is the price after the tariff has been imposed:

(a) With reference to the diagram:
   (i) identify the level of imports before and after the tariff has been imposed.  
      \(2\) marks
   (ii) state which areas represent each of the following:
        \begin{itemize}
        \item the tax revenue gained by the government
        \item the increase in producer surplus
        \item the welfare loss resulting from the tariff.
        \end{itemize}
      \(3\) marks

(b) State whether each of the following is true or false:
   (i) the more price inelastic the demand for the product, the bigger the fall in imports resulting from a given tariff;
   (ii) the amount of revenue the government receives from the tariff is the greater, the higher is the price elasticity of demand;
   (iii) the main effect of a tariff is to protect domestic producers at the expense of domestic consumers;
   (iv) a tariff is an example of an indirect tax;
   (v) As a member of the European Union, the United Kingdom cannot levy tariffs on imports from other member states or from any other country.
      \(5\) marks
      (Total marks = 10)
Solutions to Revision Questions

Solution 1

1.1 Solution: (B)

Prices reflect demand for goods by consumers, and act as incentives to producers to meet that demand. Thus, resources are allocated between competing uses. However, income is distributed via factor prices which reflect demand and supply, and not the subjective needs of individuals.

1.2 Solution: (C)

The price mechanism will only allocate resources efficiently if markets are competitive, there are no costs/benefits that are not reflected in prices and there are no taxes and subsidies to distort prices. Only (ii) would have no effect; this is simply a case of scarcity, the central economic problem.

1.3 Solution: (B)

The production possibility frontier shows all those combinations of goods that an economy could produce with its current resources and technology. It would thus show how much of one good would have to be sacrificed to obtain further units of another good.

1.4 Solution: (D)

Opportunity costs arise from the scarcity of resources. When an economy is fully employed, the output of one good can only be increased by decreasing the output of another. Thus the real, or opportunity, cost of a good is the value of the forgone production.

1.5 Solution: (C)

Economic welfare is not the same as the welfare state. The latter is concerned with the role of the state in raising the living standards of some citizens, for example, through state pension schemes. Economic welfare in general is concerned with the overall standard of living of the population as a whole.

1.6 Solution: (D)

A would provide a country with more resources to produce output, and B and C would raise the productivity (output per unit of input) of resources. All these would
contribute to economic growth. However, a rise in consumption would, of itself, contribute nothing to productive capacity and the fall in savings might reduce investment in the economy.

1.7 Solution: (A)

Increased output requires extra energy and raw materials, so a shortage of either would constrain the rate of economic growth. Also, environmental damage from pollution may become unacceptable (e.g. global warming) and thus place limits on output. Increased trade does none of these things and generally tends to raise productivity and hence economic growth.

1.8 Solution: (B)

Although economic growth may increase employment and may reduce inflation, there is no guarantee that it will do so. Neither would growth necessarily reduce the level of prices and bring down the cost of living. However, growth will always raise average living standards because this is the definition of economic growth.

Solution 2

(a) (i) D
(ii) C
(iii) A
(iv) E

(b) (i) Yes
(ii) No
(iii) No
(iv) Yes

(c) (i) False
Economic growth could occur as a result of using more factors of production such as labour or capital.
(ii) True
Living standards are best measured by the amount of consumer goods and services each person consumes.

Solution 3

(a) (i) No
The effect of the oil price rise would be to cause cost push inflation.
(ii) Yes
The oil price rise would cause a negative supply shock, shifting the aggregate supply curve to the right, reducing national output.
(iii) Yes
The total import bill of oil importing countries would rise, worsening the trade balance.
(iv) No
Frictional unemployment occurs when workers are between jobs; this is unaffected by the oil price rise which may, however, cause structural or demand deficient unemployment.

(b) (i) The strongest effect would be on the price of oil.
(ii) The strongest effect would be on the sales/output of oil.
(iii) The strongest effect would be on the price of oil.

(c) (i) True
Service activities are less energy intensive than manufacturing.
(ii) False
The supply shock would shift the aggregate supply curve to the left, raising the price level and lowering output and employment.
(iii) True
Import price would rise relative to export prices thus leading to a fall in the terms of trade.

Solution 4

(a) (i) Increase.
(ii) Decrease.
(iii) Increase.
(iv) No effect.
(v) Decrease.

(b) (i) False
There is also a production problem.
(ii) True
Workers need to consume less of their output; this is the same as raising their savings rate.
(iii) False
The production problem remains whether the pension is a private one or the state one.
(iv) True
Increasing labour productivity would provide output for pensioners without workers having to reduce their own consumption.
(v) False
It would depend on the age structure of immigrants; most are of working age and thus ease the dependency burden.

Solution 5

5.1 Solution: (C)

The equilibrium price is where demand and supply are equal. If the price is forced above this level, it will lead to an extension of supply and a contraction of demand. Thus supply would exceed demand and a surplus would exist in the market.
5.2 Solution (A)

If a reduction in price of 10 per cent resulted in a fall in total revenue of 10 per cent then, since revenue is equal to price multiplied by the quantity sold, the quantity sold must have remained the same. This implies that price has no effect on the quantity demanded: the demand must be perfectly inelastic.

5.3 Solution: (A)

Economies and diseconomies of scale refer to the long-run cost curve, hence C and D are incorrect. Diminishing returns is the short-run process which leads to rising costs. Short-run average costs thus fall because fixed costs are spread over a larger output.

5.4 Solution: (A)

The essential feature of oligopoly is that of interdependence: the effects of policy decisions are crucially affected by the reactions of rival firms. Thus pricing decisions must always take into account how rival firms are likely to react to reductions or rises in price.

5.5 Solution: (C)

Responses A, B and D all refer to conditions of demand which affect the position of the demand curve. Response C refers to the price of the good itself; a change in this would lead to a movement along the demand curve, not a shift of the curve itself.

5.6 Solution: (A)

The traditional theory of the firm states that firms are profit-maximisers. Thus, to be in equilibrium, where the firm would have no incentive to raise or lower output, the firm would have to be at the profit-maximizing level of output.

5.7 Solution: (B)

Efficient resource allocation requires that prices reflect costs. Prices will only reflect private costs since social costs are those not incurred by the producers. To correct this, the government should impose an indirect tax equal to the difference between private and social costs.

5.8 Solution: (D)

A horizontal merger is one between firms producing similar goods at the same stage of production. A is an example of vertical integration and C is a conglomerate merger. B might be a merger of any sort.

5.9 Solution: (B)

The kinked demand shows that, under conditions of oligopoly, price competition may be dangerous and reduce the firm’s revenue; hence there is a tendency to avoid changing prices and to concentrate on non-price competition.

5.10 Solution: (A)

If trade unions secure a wage increase for their members, employment is likely to fall since the demand curve for labour (the marginal revenue product) like any other demand curve, slopes downwards. A rise in the price of labour (wages) will thus reduce the demand for labour and decrease employment.
5.11 Solution: (D)

All of the first three are attempts to limit competition in one way or another. However D, the use of advertising, is not since advertising is one form of competition and is particularly important in some markets, especially oligopolies.

5.12 Solution: (A)

B and C are simply the conditions necessary for profit maximisation and D refers to the use of profits whether the firm is efficient or not. The necessary condition for the pursuit of profits to lead to efficiency is competition; when competition is restricted firms may make profits without being efficient.

Solution 6

(a) (i) Yes
Advertising is a form of non-price competition typical of oligopolies.

(ii) No
Decision-making is interdependent since the reactions of rivals must be considered.

(iii) No
Oligopoly firms tend to avoid price competition and prefer non-price competition.

(iv) Yes
To avoid price wars, the dominant company may become a price leader whose prices are followed by other firms.

(v) No
Barriers to entry are the main source of oligopoly.

(b) (i) False
This is a standard definition of a monopoly, not an oligopoly.

(ii) True
Control of retail outlets by large firms makes it more difficult for new brewers to enter the industry.

(iii) False
The kinked demand curve model predicts the avoidance of price competition in oligopoly industries.

(iv) True
The reduced competition has enabled firms to raise prices and therefore expand profit margins.

(v) True
Product differentiation, such as branding, is often used by oligopolies as a substitute for price competition.

Solution 7

(a) (i) A large fall in price.

(ii) OPEC is an example of a cartel.

(iii) This is an example of cross elasticity of demand.
(iv) Consumers will find substitutes for oil.
(v) The demand and supply of oil are highly price inelastic.

(b) (i) False
The income elasticity of demand would have to be both positive and have a value greater than + 1.

(ii) False
If the supply is price inelastic a fall in demand will produce a large fall in price.

(iii) True
In the long run additional sources of supply can be developed.

(iv) True
The fewer the number of substitutes for a good, the less price elastic the demand will be.

(v) False
In perfect market a single price is the outcome of perfect competition, not collusion between producers as in the case of oil.

✅ Solution 8

(a)

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Total revenue</th>
<th>Marginal revenue</th>
<th>Total cost</th>
<th>Marginal cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>£0</td>
<td>£0</td>
<td>£0</td>
<td>£0</td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>16</td>
<td>20</td>
<td>8</td>
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<td>2</td>
<td>28</td>
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<td>6</td>
<td>36</td>
<td>-4</td>
<td>66</td>
<td>21</td>
</tr>
<tr>
<td>7</td>
<td>28</td>
<td>-8</td>
<td>110</td>
<td>44</td>
</tr>
</tbody>
</table>

(b) (i) Price elasticity of demand is \[ \frac{\% \text{ change in demand}}{\% \text{ change in price}} \]

Thus \[ \frac{-25\%}{+20\%} = -1.25 \]

(ii) Profit maximizing point is where MC = MR
This is at output level 4.
Total profit at this point is total revenue — total cost.
This is £40 — £34 = £6.

(c) (i) False
In the short run at least one factor of production is fixed, but at least one is variable otherwise production could not be increased at all.
In the long run all factors are variable; the scale of output can therefore be increased and economies of scale gained.

Under perfect competition the demand curve is horizontal.

In the short run the firm may earn any level of profits but in competitive markets competition reduces profits to normal in the long run.

Solution 9

(a) (i) Fixed cost.
(ii) Variable cost.
(iii) Fixed cost.
(iv) Variable cost.

(b) (i) £51.67 per ticket. In the short run the minimum price is that which just covers total variable costs. Total variable costs are £15,500 (fuel, labour and landing charges). There are three hundred seats so the minimum price is £15,500 divided by 300.

(ii) £73.34 per ticket. In the long run the firm must cover all of its costs. The total costs in the table are £22,000 so the minimum ticket price is £22,000 divided by 300.

(c) (i) True
If demand was price elastic it would increase proportionately more than the fall in price thus raising total revenue.

(ii) False
New airlines would reduce the demand for this airline and the demand curve would shift to the left.

Solution 10

(a) Strongest economies of scale: Cement
Weakest economies of scale: Shoes.

(b) (i) When the company increases in size.
(ii) When the business becomes too large.
(iii) When the industry becomes large.
(iv) When a company is large enough to produce on a large scale.

(c) (i) True
Economies of scale will give large, established firms a competitive advantage over potential new firms.

(ii) True
Economies of scale lead to industries having small numbers of large firms.

(iii) False
Economies and diseconomies of scale are about the long-run average cost curve, not the short-run average cost curve.

(iv) False
Constant returns of scale lead to the average cost of production being constant.
Solution 11
(a) (i) An indirect tax shifts supply curve.
(ii) The burden of tax would be shifted most to consumers when the demand curve for the product was price inelastic.
(iii) If the demand for the product was price inelastic.
(iv) Sales/output of the good would fall most when the demand for the good was price elastic.

(b) A small proportion of income spent on the good.
A short time period under consideration.

c) (i) False
The heaviest taxes are on goods with low price elasticity of demand such as alcohol and tobacco.
(ii) True
The incidence (responsibility to pay) falls on the seller of the good but some of the burden is passed onto the consumer in the form of a higher price.
(iii) False
Like any indirect tax the burden of the tax falls on the consumer.
(iv) False
Not all direct taxes are progressive; some are proportional and some may be regressive (e.g. national insurance in the United Kingdom).

Solution 12
(a) Economies of scale occur whenever an increase in the size of the business results in a decrease in average costs. In the retail petrol industry smaller companies cannot compete with larger firms and the evidence of this is a fall in the number of smaller retailers. The dominance of large petrol retailers may not be in the interest of consumers because in the long run prices may rise.

(b) Advertising costs are spread over a larger output.
Bulk buying from suppliers reduced costs per unit.

c) (i) True
Petrol has few substitutes so the price elasticity of demand is low.
(ii) True
Each brand of petrol has many other brands as close substitutes so the price elasticity of demand is high.
(iii) False
Price wars do occasionally break out in oligopolies even though companies try to avoid them.
(iv) True
In attempting to avoid price competition, companies resort to non-price competition including advertising.
(v) *False*

The nature of oligopolies is that collusion is safer than competition so informal collusion, such as price leadership, is common and formal collusion, such as price fixing, not unknown.

**Solution 13**

(a) (i) Consumer durable goods

Other Services

(ii) Tobacco

Food

(b) (i) Proportionate change in demand

Proportionate change in income

(ii) Luxury good

(c) (i) *False*

As income falls demand will fall most for goods with high income elasticities of demand.

(ii) *True*

Inferior goods are those where the demand falls as income rises thus producing negative income elasticity of demand.

(iii) *True*

If income fell in a recession consumers could postpone replacing their existing consumer durable goods.

**Solution 14**

<table>
<thead>
<tr>
<th>Output</th>
<th>Total revenue</th>
<th>Marginal revenue</th>
<th>Total costs</th>
<th>Marginal costs</th>
<th>Total profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>110</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>50</td>
<td>50</td>
<td>140</td>
<td>30</td>
<td>-90</td>
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<tr>
<td>2</td>
<td>100</td>
<td>50</td>
<td>162</td>
<td>22</td>
<td>-62</td>
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<td>3</td>
<td>150</td>
<td>50</td>
<td>175</td>
<td>13</td>
<td>-25</td>
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<td>200</td>
<td>50</td>
<td>180</td>
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<td>5</td>
<td>250</td>
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<td>185</td>
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<td>50</td>
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<td>7</td>
<td>350</td>
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<td>219</td>
<td>25</td>
<td>121</td>
</tr>
<tr>
<td>8</td>
<td>400</td>
<td>50</td>
<td>269</td>
<td>50</td>
<td>131</td>
</tr>
<tr>
<td>9</td>
<td>450</td>
<td>50</td>
<td>325</td>
<td>56</td>
<td>125</td>
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<tr>
<td>10</td>
<td>500</td>
<td>50</td>
<td>425</td>
<td>100</td>
<td>75</td>
</tr>
</tbody>
</table>

(a) (i) The firm’s marginal revenue is given in the table above.

(ii) The firm’s marginal cost is given in the table above.

(iii) The firm’s fixed costs are £110.

(b) (i) The firm will maximise profits where marginal cost and marginal revenue are equal; this is at output level 8.
(ii) Total profit at this level of output will be the difference between total costs and total revenue; this is £131.

Solution 15

(a) The firm will:
(i) produce a total output of $Q_3$ in part C of the diagram since here the combined marginal revenue is equal to the marginal cost of production;
(ii) sell in each market an amount where the marginal cost of production is equal to the marginal revenue in that market, that is, $Q_2$ in market B and $Q_1$ in market A;
(iii) charge a price determined by the demand for the product in each market, that is $P_2$ in market B and $P_1$ in market A.

(b) (i) False
   A monopolist may secure economies of scale so that its profit maximizing price would be lower than in the equivalent, smaller competitive firm.
   (ii) True
   The monopolist will produce below the point where average cost is least (the optimum output).
   (iii) True
   With any demand curve, the firm can either choose a price or a level of output but not both.
   (iv) False
   The existence of entry barriers ensures that monopolists may earn above-normal profits even in the long run.

Solution 16

(a) (i) 3. % change in the demand for coffee
(ii) 1. price elastic.
(iii) 3. a large rise in price and a small fall in sales.
(iv) 3. a small rise in the sales of tea and a large rise in its price.

(b) (i) False
   The effect on price of a shift in the supply curve is greatest when the demand curve is steep, that is demand is price elastic.
   (ii) False
   The cross elasticity of demand measures the relationship between the demand for one good and the price of another.
   (iii) True
   Thus a rise in the price of a good (cars) reduces its demand and also reduces the demand for its complementary goods (e.g. petrol).
   (iv) True
   The real price of a good is its price relative to the general price level.
Solution 17

17.1 Solution: (D)

Venture capital is that invested in new and high-risk enterprises by buying shares in those businesses.

17.2 Solution: (D)

The public-sector borrowing requirement (now called public-sector net borrowing), is the difference between government expenditure and its income from taxation; this difference is financed by borrowing. Only D represents this borrowing: A and B would reduce the size of the PSBR (PSNB) and C has no direct relevance.

17.3 Solution: (A)

The price of shares is determined by demand and supply. B and C would raise the demand for shares and D would reduce the supply. However, a rise in interest rates would reduce the demand for shares as alternative investments have become more attractive.

17.4 Solution: (D)

An increase in taxation, or the sale of assets, would reduce the financial deficit, not provide a means of financing it. A change in interest rates has no direct effect on government finances. A government deficit has to be financed by borrowing, for example, by selling savings certificates.

17.5 Solution: (A)

Solutions B, C and D all represent payments for economic services. However, educational grants and scholarships are transfers from taxpayers for which no economic service is received.

17.6 Solution: (C)

Fiscal policy is concerned with the government budget and the balance of taxation and public expenditure. This is the responsibility of the central government, not the central bank.

17.7 Solution: (D)

Increased borrowing by the government is likely to lead to a rise in interest rates. This, in turn, will normally depress share prices. Moreover increased borrowing tends to inject expenditure into the economy, thus raising the rate of inflation.

17.8 Solution: (C)

A withdrawal from the circular flow is a process that removes income from the circular flow. Investment and exports add to the flow and are, therefore, injections. Profit is a form of income and is neither an injection, nor a withdrawal.

17.9 Solution: (A)

The natural rate of unemployment is where the demand and supply for labour are equal and is known as the vertical long run Phillips curve. Attempts to reduce
unemployment below this level merely lead to higher inflation. Responses C and D are true statements, but have nothing to do with the natural rate hypothesis.

17.10 Solution: (B)
Inflation cannot, of itself, reduce all incomes since prices represent someone’s income, so B is the correct response. However, inflation will change the distribution of income and wealth as in A and C. D is the inevitable consequence of inflation.

17.11 Solution: (B)
An inflationary gap can only occur when aggregate demand exceeds the full employment level of income at full employment. The other three could occur at less than full employment and thus would necessarily be inflationary.

17.12 Solution: (D)
The demand for money is independent of the supply of money and is thus unaffected by the change in the supply of money. All the others are likely consequences of a reduction in the money supply.

Solution 18
(a) (i) the level of unemployment would be lower.
(ii) the rate of inflation would be raised.
(iii) the deficit on the current account of the balance of payments would be raised.

(b) (i) the rate of inflation would be lower.
(ii) the deficit on the current account of the balance of payments would be lower.
(iii) the rate of economic growth would be unaffected.

(c) (i) True
Inflation reduces the real value of monetary values – both assets and debts.
(ii) True
Rising import prices raise costs for domestic producers.
(iii) False
A deflationary policy would involve raising interest rates to depress expenditure.
(iv) False
Inflation tends to rise in the upswing phase of the trade cycle as increasing demand exceeds production capacity.

Solution 19
(a) (i) Periods of recession are 1980/81 and 1991/92.
Period of boom is 1987/88.
(ii) The apparent relationship between the rate of interest and the level of business investment is negative; when interest rates rise, investment falls.
(iii) The apparent relationship between the level of business investment and the rate of growth of GDP is positive, when investment rises the growth of GDP rises.

(b) (i) True
(ii) False
The most important source of investment financing in the United Kingdom is retained profits.

(iii) True
(iv) True

This is because of the accelerator effect.

(v) False
Equilibrium requires that the total of injections are equal to the total of withdrawals.

(vi) False
The main external source of funds for business investment is the capital market.

**Solution 20**

(a) (i) Any two of Consumer expenditure; Investment expenditure; Government expenditure; Net exports.
(ii) Point C at income level D (i.e. where income and expenditure are equal).
(iii) Gap EF (i.e. the level of expenditure is less than the level of income).

(b) (i) Consumption would fall; the equilibrium level of national income would fall.
(ii) Net exports would rise; the equilibrium level of national income would rise.
(iii) Consumption would rise; the equilibrium level of national income would rise.
(iv) Investment would rise; the equilibrium level of national income would rise.

(c) (i) True
Reflation may involve a deficit budget. This would involve borrowing to finance the resulting PSNCR.
(ii) False
A deflationary policy would reduce aggregate monetary demand; this would reduce imports and improve the trade balance.

**Solution 21**

(a) (i) GDP which fell from 1990 to 1993
Car sales which fell from 1989 to 1992
(ii) M: money stock
V: velocity of circulation
P: price level
T: transactions

(b) (i) False
The most rapid period of credit growth is 1995–97 but inflation is relatively low.
(ii) True
The real interest rate is the nominal rate minus the rate of inflation. This was +7.1 per cent in 1992.
(iii) True
For monetarists, all inflation is demand pull inflation caused by excessive growth of the money supply.
In the recession period 1990–93, the rate of inflation declines from 9.8 per cent to 1.2 per cent.

**Solution 22**

(a) (i) Increased cost push inflation: move to right (from I to II)
A decrease in structural unemployment: move to left (from II to I)
A successful supply side policy: move to left (from II to I)
(ii) An expansionary fiscal policy: upwards along the curve.
A significant rise in exports: upwards along the curve.
A large fall in business investment: downwards along the curve.

(b) (i) Supply side policy.
(ii) Fiscal policy.
(iii) Supply side policy.
(iv) Fiscal policy.

**Solution 23**

(a) (i) Highest rate of inflation: Spain (33.6 per cent over the period)
Lowest rate of inflation: Denmark (14.2 per cent over the period)
(ii) Highest rate of growth: Norway (23 per cent over the period)
Lowest rate of growth: Finland (−0.8 per cent over the period)

(b) (i) True
In a recession tax revenues fall, but expenditure on unemployment pay increases.
(ii) False
The RPI only takes into account consumer goods, not goods bought by business.
A wider measure is the GDP deflator.
(iii) True
Limiting imports restricts supply and reduces competition.
(iv) False
The Phillips curve shows the relationship between inflation and the level of unemployment.
(v) True
Real values are those which take inflation into account.
(vi) False
Cost push inflation occurs irrespective of the level of aggregate demand.

**Solution 24**

(a) (i) The lowest real interest rate was in 1974 (−15%).
The highest real interest rate was in 1980 (+10%).
(ii) A rise in business investment would result from a fall in real interest rates.
A fall in consumer demand would result from a rise in real interest rates.
A high exchange rate would result from a rise in real interest rates.
An increase in consumer borrowing would result from a fall in real interest rates.
(b) (i)  *False*
Limiting aggregate demand would prevent demand pull inflation not cost push inflation.
(ii)  *True*
High interest rates attract foreign capital and this represents a demand for the currency.
(iii)  *True*
With a single currency only one interest rate is possible.
(iv)  *False*
High real interest rates discourage investment but encourage savings.

**Solution 25**

(a) (i) National output would fall.
(ii) National output would rise.
(iii) National output would rise.
(iv) National output would fall.

(b)  *Yes*
Providing incentives to work and effort is part of supply side policy.
*No*
Increased social welfare expenditure may make the labour market work less well.
*Yes*
This would reduce elements of monopoly and distortion in the labour market.
*No*
This would be an example of fiscal policy designed to raise aggregate demand.

(c) (i)  *True*
The AD curve would shift to right.
(ii)  *False*
This would be a negative supply shock, shifting the AS curve to the left.

**Solution 26**

(a) (i) The three injections are:
- Domestic fixed capital formation
- Government consumption expenditure
- Exports.
(ii) Slow GDP growth would be expected to:
- *raise* the level of employment;
- *reduce* the government budget surplus;
- *reduce* the level of imports.

(b) (i)  *True*
Lower interest rates would cut the cost of financing investment and also lead to a lower exchange rate thus boosting exports.
(ii)  *True*
Fiscal expansion may involve borrowing which would raise interest rates and discourage private investment.
(iii) \textit{False}

With negative inflation all nominal interest rates must mean positive real interest rates.

(iv) \textit{False}

Rapid growth increases the demand for imports thus leading to a deterioration in the trade balance.

\begin{itemize}
\item \textbf{Solution 27}
\end{itemize}

\textbf{27.1 Solution: (C)}

The sterling exchange rate will depend on the demand for and supply of sterling. A would discourage inflows of capital; the demand for sterling would fall. B refers to increased capital exports; the supply of sterling would increase. However, if exports rise, the demand for sterling rises and an appreciation would occur.

\textbf{27.2 Solution: (B)}

Devaluation improves competitiveness by reducing the price of exports and raising the price of imports. Thus the terms of trade (relative prices of exports and imports) deteriorates, and import prices rise, raising the cost of living. But improved competitiveness reduces the current account deficit, and increased exports would raise the level of economic activity.

\textbf{27.3 Solution: (D)}

Devaluation of the currency has the effect of raising the price of imports in the domestic currency this would reduce the demand for imports. Both B and C would make imports look cheaper, thus raising demand for them. A rise in consumer incomes would increase the demand for goods generally, including imports.

\textbf{27.4 Solution: (B)}

Trade in goods and services acts as a substitute for the movement of factors of production between economies. The less easily factors can move, the more valuable trade is. Thus if capital and labour have high international mobility, the benefits of trade are lessened.

\textbf{27.5 Solution: (C)}

The terms of trade are concerned with the relative prices of imports and exports. Thus an improvement in the terms of trade is where export prices have risen relative to import prices; a unit of exports now buys more imports. The other responses are incorrect since they are concerned with the volume and value of trade flows.

\textbf{27.6 Solution: (A)}

The imposition of a tariff on imports raises their prices and thus enables domestic producers of competing goods to raise their prices; domestic producers gain. Domestic consumers lose since they have to pay higher prices, and foreign producers lose through reduced sales.

\textbf{27.7 Solution: (D)}

A transnational (or multinational) company is one which produces goods or services in more than one country. A and B might be done by a company operating in just one country, and C refers to the ownership of the company, not to its production facilities.
27.8 Solution: (C)

The EU is a common market and thus has no internal barriers to the movement of either goods and services or factors of production. It also maintains a common external tariff, but indirect tax rates, for example, VAT, still vary from one member state to another.

27.9 Solution: (B)

Response A, C and D are all payments for economic services received. All would thus appear on the current account as invisible items. However, the flows of investment are flows of capital and therefore appear on the capital account, not the current account.

27.10 Solution: (A)

The benefits of a single currency would include reduced exchange rate uncertainty (there would be no exchange rates within Europe) and because no currency would be exchanged on intra-European trade, transactions cost would fall, not rise.

27.11 Solution: (C)

Barriers to trade are either tariff barriers (e.g. import duties and taxes) or non-tariff barriers which include all other types of barrier. C is a tariff barrier and therefore the correct response.

27.12 Solution: (C)

A floating exchange rate means that businesses cannot be entirely sure of the exchange rate when they make contracts involving imports and exports, thus profitability is uncertain. This is clearly a disadvantage of floating exchange rates.

Solution 28

(a) (i) The European Union.
(ii) Semi-manufactured goods and metals.
   Finished manufactured goods.
(iii) Food and drink.
   Fuel and raw materials.

(b) (i) True
   Each country will have goods and services in which they are relatively, if not absolutely, efficient.
(ii) False
   The gain from trade comes from being able to import goods that cannot be made efficiently domestically. Exports provide the means of paying for these imports.
(iii) False
   The balance of payments and the government budget are quite separate.
(iv) True
   This is the source of gains from international trade.
(v) True
   Specialisation implies a higher level of output thus making economies of scale possible.
Solution 29

(a) Above-average import penetration:
- metals;
- chemicals;
- man-made fibres;
- motor vehicles;
- textiles.

Below-average import penetration:
- food;
- drink;
- tobacco;
- paper;
- printing;
- publishing.

(b) (i) No
An undervalued exchange rate would make imports more expensive in terms of the domestic currency.

(ii) Yes
Comparative advantage is not static; the country may be losing comparative advantage in some industries hence the rising imports.

(iii) Yes
If domestic inflation were higher than in trading partners, imports would become progressively more competitive.

(iv) No
Deflationary policy would reduce demand for all goods and services including imports.

(c) (i) False
Import penetration may occur as a result of changing comparative advantage and may therefore raise economic welfare.

(ii) True
Economic welfare is maximised by free trade; the obvious losers here would be domestic consumers who would be faced by higher prices.

(iii) True
A depreciation of the currency will raise the price of imports in terms of the country’s domestic currency, thus discouraging demand.

(iv) False
The terms of trade would improve since they measure the ratio of export prices to import price; a fall in import prices improves the ratio.

Solution 30

(a) (i) −$20 billion
(ii) −$5 billion
(iii) −$11 billion
(iv) −$18 billion
(b) (i) True
An appreciation will reduce the price of imports in terms of the domestic currency.
(ii) True
A depreciation will raise the price of imports.
(iii) False
Transactions costs arise when currencies are bought and sold; this is unaffected by the exchange rate system.
(iv) False
Exchange rate certainty is only achieved under fixed exchange rate systems.
(v) True
Since the exchange rate does have to be managed, central banks no longer need foreign exchange reserves.
(vi) False
With fixed exchange rate systems, central banks have to manage the foreign exchange market to ensure that demand and supply for the currency produces the desired exchange rate.

Solution 31

(a) (i) Brazil (5.9%)
Japan (7.4%)
(ii) Germany ($71 billion)
(iii) USA ($129 billion)
(iv) Singapore ($15,000 per capita)

(b) (i) True
Resources will flow to the protected industry even though the country does not have a comparative advantage in this industry.
(ii) True
Since import price will rise, this will cause a cost push inflationary shock to the economy.
(iii) False
By limiting trade and distorting resource allocation, tariffs reduce overall economic welfare for a country.
(iv) False
Some businesses are buyers of the products on which the tariffs have been imposed and therefore suffer from higher costs.
(v) True
This may be the result of retaliation by trading partners or because exporting firms face higher costs as a result of the tariffs.

Solution 32

(a) (i) Raise
Higher interest rates will attract inflows of capital and increase the demand for the currency.
(ii) *Lower*
An increased money supply will lower interest rates and increase spending, some of which will be on imports. The demand for the currency falls and the supply increases.

(iii) *Lower*
Exports will decline, reducing the demand for the currency.

(iv) *Raise*
Lower inflation will improve the trade balance and raise the exchange rate.

(b) (i) the country’s terms of trade would *improve*;
(ii) the country’s balance of trade would *deteriorate*;
(iii) inflationary pressure in the country would *decrease*;
(iv) unemployment in the country would *rise*.

(c) (i) *True*
A rise in the exchange rate reduces the prices of imports increasing the competition for domestic companies.
(ii) *False*
A fall in the exchange rate would raise the price of imported goods.

**Solution 33**

(a) (i) Before the tariff, imports were $Q_1$ (demand) minus $Q_1$ (domestic supply).
After the tariff, imports were $Q_3$ (demand) minus $Q_2$ (domestic supply).

(ii) Tax revenue is area A.
Increased producer surplus is area B.
The welfare loss is the two areas C combined.

(b) (i) *False*
Demand for imports will fall most if the demand is price elastic.

(ii) *False*
As with all indirect taxes, the more inelastic is the demand, the greater is the total tax revenue.

(iii) *True*
The tariff enables domestic producers to raise their prices.

(iv) *True*

(v) *True*
There are no tariffs within the EU and the EU has a common external tariff, so only the EU can impose tariffs on imports from other countries.
Mock Assessment 1

Instructions: attempt all 40 questions

Time allowed 1 hour

Do not turn the page until you are ready to attempt the assessment under timed conditions
Mock Assessment Questions

Question 1
Which ONE of the following would lead directly to an outward shift in a country’s production possibility frontier?

(A) A rise in the population of working age.
(B) A fall in unemployment.
(C) An increase in outward migration.
(D) A rise in the school leaving age.

(2 marks)

Question 2
The cost of one good or service measured in terms of what must be sacrificed to obtain it is called:

(A) real cost.
(B) potential cost.
(C) opportunity cost.
(D) social cost.

(2 marks)

Question 3
All of the following are supply side policies which would promote economic growth EXCEPT which ONE?

(A) Increased expenditure on education and training.
(B) A reduction in marginal rates of taxation.
(C) Deregulation of industry and finance.
(D) Increased social welfare expenditure.

(2 marks)

Question 4
All of the following are essential features of a market economy EXCEPT which ONE?

(A) Private ownership of productive resources.
(B) Allocation of resources by the price mechanism.
(C) Absence of entry and exit barriers to and from industries.
(D) Prices determined by market forces.

(2 marks)
Question 5
All of the following are features of modern economic growth EXCEPT which ONE?

(A) Increased importance of human capital as a source of growth.
(B) An increased role for public sector industries.
(C) A declining share of manufacturing in the economy.
(D) An increased role for multinational companies.

(2 marks)

Question 6
A business will maximise profits only if it produces where:

(A) average cost = marginal revenue.
(B) marginal cost = marginal revenue.
(C) average cost = average revenue.
(D) marginal cost = average revenue.

(2 marks)

Question 7
If a business currently sells 10,000 units of its product per month at $10 per unit and the demand for its product has a price elasticity of -2.5, a rise in the price of the product to $11 will:

(A) raise total revenue by $7,250.
(B) reduce total revenue by $17,500.
(C) reduce total revenue by $25,000.
(D) raise total revenue by $37,500.

(2 marks)

Question 8
In the kinked demand curve model of oligopoly, the kink in the firm’s demand curve is due to the firm’s belief that competitors will:

(A) set a price at the kink of the demand curve.
(B) will match all price increases and price reductions.
(C) will match any price increases, but not any price reductions.
(D) will match any price reductions, but not any price increases.

(2 marks)

Question 9
Which ONE of the following is a natural barrier to the entry of new firms into an industry?

(A) Large initial capital costs.
(B) The issuing of patents.
(C) A government awarded franchise.
(D) The licensing of professions.

(2 marks)
Question 10
A good which is characterised by both rivalry and excludability is called:
(A) a public good.
(B) a private good.
(C) a government good.
(D) an external good.

(2 marks)

Question 11
The burden of an indirect tax on a good will fall more heavily on the producer when:
(A) demand for the good is price elastic.
(B) demand for the good is price inelastic.
(C) demand for the good has unit elasticity.
(D) supply of the good is price elastic.

(2 marks)

Question 12
In practice a monopoly may have its market power limited by all of the following EXCEPT which ONE?
(A) Countervailing power from its customers.
(B) The market may be contestable.
(C) There may be close substitutes for the good.
(D) The firm’s long run average cost curve may be falling.

(2 marks)

Question 13
All of the following are examples of where externalities are likely to occur EXCEPT which ONE?
(A) A business providing training schemes for its employees.
(B) Government expenditure on vaccination programmes for infectious diseases.
(C) Attending a concert given by a government funded orchestra.
(D) Private motorists driving cars in city centres.

(2 marks)

Question 14
Whenever government intervention prevents prices from reaching their equilibrium level, the result will always include ALL of the following EXCEPT which ONE?
(A) Shortages or surpluses.
(B) Demand and supply not equal.
(C) Reduced profits for producers.
(D) Resources not allocated by price.

(2 marks)
Question 15
A rise in the price of a good accompanied by a fall in the quantity sold would result from

(A) a decrease in supply.
(B) an increase in demand.
(C) a decrease in demand.
(D) an increase in supply.

(2 marks)

Question 16
If the demand curve for Good A shifts to the left when the price of Good B rises, we may conclude that

(A) the goods are substitutes.
(B) Good A is an inferior good.
(C) the goods are complements.
(D) the demand for Good A is price elastic.

(2 marks)

Question 17
The introduction of a national minimum wage will lead a business to reduce its number of employees most when

(A) the demand for its final product is price elastic.
(B) wage costs are a small proportion of total costs.
(C) there is a low degree of substitutability between capital and labour.
(D) the supply of substitute factors of production is price inelastic.

(2 marks)

Question 18
(i) For each of the following economic processes, indicate whether the effect on the short run average cost for a firm would be to raise the cost curve, lower the cost curve or to leave the cost curve unaffected.

<table>
<thead>
<tr>
<th>Economic process</th>
<th>Raise curve</th>
<th>Lower curve</th>
<th>Leave curve unaffected</th>
</tr>
</thead>
<tbody>
<tr>
<td>A rise in wage costs</td>
<td></td>
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<tr>
<td>Increase opportunities for economies of scale.</td>
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<tr>
<td>A fall in the price of raw materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A shift in the demand curve to the left</td>
<td></td>
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</tr>
</tbody>
</table>

(4 marks)
(ii) Indicate whether each of the following statements is true or false.

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>The law of diminishing returns shows how long run cost</td>
<td></td>
<td></td>
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<tr>
<td>tends to rise as if the scale of output becomes too great</td>
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<td></td>
</tr>
<tr>
<td>A firm’s short run cost curve is always U shaped; the long</td>
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<td></td>
</tr>
<tr>
<td>cost curve may or may not be</td>
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<td></td>
</tr>
<tr>
<td>For most firms technological change is one of the most</td>
<td></td>
<td></td>
</tr>
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<td></td>
</tr>
</tbody>
</table>

(4 marks)

**Question 19**

(i) Indicate whether each of the following are typical characteristics of an oligopoly market (yes/no).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

(4 marks)

(ii) State whether each of the following statements is true or false.

<table>
<thead>
<tr>
<th>Statement</th>
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<th>False</th>
</tr>
</thead>
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<td></td>
</tr>
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<td>than could competitive firms in the same industry</td>
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<td></td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>short run.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(4 marks)
Question 20
Which ONE of the following would cause the value of the multiplier to fall?

(A) A fall in the level of government expenditure.
(B) A rise in the marginal propensity to consume.
(C) A fall in business investment.
(D) A rise in the marginal propensity to save.

(2 marks)

Question 21
The linking of net savers with net borrowers is known as:

(A) the savings function.
(B) financial intermediation.
(C) financial regulation.
(D) a store of value.

(2 marks)

Question 22
The recession phase of the trade cycle will normally be accompanied by all of the following EXCEPT which ONE?

(A) A rise in the rate of inflation.
(B) A fall in the level of national output.
(C) An improvement in the trade balance.
(D) A rise in the level of unemployment.

(2 marks)

Question 23
According to the new classical school, in order to manage the economy governments should:

(A) use active fiscal and monetary policy.
(B) adopt a laissez faire approach and leave everything to market forces.
(C) announce monetary rules to control inflation, and liberalise product and factor markets.
(D) use only monetary policy to increase output and employment.

(2 marks)

Question 24
All of the following will lead to a fall in the level of economic activity in an economy EXCEPT which ONE?

(A) A rise in cyclical unemployment.
(B) A fall in business investment.
(C) A decrease in government expenditure.
(D) A rise in interest rates.

(2 marks)

Question 25

The best measure of the standard of living in a country is

(A) gross domestic product per capita.
(B) per capita personal consumption.
(C) gross national product per capita.
(D) personal disposable income.

(2 marks)

Question 26

If a consumer price index rises, it shows that

(A) the value of the currency has increased.
(B) real consumer income has fallen.
(C) all prices in the economy have risen.
(D) the purchasing power of money has decreased.

(2 marks)

Question 27

The main function of the money market is to

(A) enable businesses and governments to obtain liquidity.
(B) encourage saving.
(C) permit the efficient buying and selling of shares.
(D) deal in credit instruments of more than one year maturity.

(2 marks)

Question 28

The effects of low real interest rates include all of the following EXCEPT which ONE?

(A) Credit based sales will tend to be high.
(B) Nominal costs of borrowing will always be low.
(C) Business activity will tend to increase.
(D) Investment will be encouraged.

(2 marks)

Question 29

Supply side policy is designed to

(A) raise the level of aggregate monetary demand in the economy.
(B) manage the money supply in the economy.
(C) improve the ability of the economy to produce goods and services.
(D) reduce unemployment by limiting the supply of labour.  

(2 marks)

? **Question 30**

(i) Indicate whether each of the following taxes are direct taxes or indirect taxes.

<table>
<thead>
<tr>
<th>Type of tax</th>
<th>Direct</th>
<th>Indirect</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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<td></td>
</tr>
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<td>National insurance (social security tax)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(4 marks)

(ii) Indicate whether each of the following statements is *true* or *false*.

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
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<td>Direct taxes tend to be more regressive than indirect taxes</td>
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<td></td>
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<tr>
<td>For a business, value added tax is a cost but corporation tax is not</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(4 marks)

? **Question 31**

International trade is best explained by the fact that:

(A) all countries have an absolute advantage in the production of something.
(B) all countries have specialised in the production of certain goods and services.
(C) no country has an absolute advantage in the production of all goods and services.
(D) all countries have a comparative advantage in the production of something.

(2 marks)

? **Question 32**

All of the following will encourage the process of the globalisation of production EXCEPT which ONE?

(A) Reductions in international transport costs.
(B) Higher levels of tariffs.
(C) Reduced barriers to international capital movements.
(D) Increased similarity in demand patterns between countries.

**Question 33**

Intra-industry trade occurs when a country:

(A) exports and imports different products.
(B) exports and imports the same products.
(C) imports materials to be used by its domestic industry.
(D) exports materials for use in industries in other countries.

**Question 34**

Which ONE of the following shows the lowest degree of international mobility?

(A) Unskilled labour.
(B) Financial capital.
(C) Technical knowledge.
(D) Management.

**Question 35**

A deficit on a country’s balance of payments current account can be financed by a surplus:

(A) of exports over imports.
(B) of invisible earnings.
(C) on the capital account.
(D) of taxes over expenditure.

**Question 36**

A fall in the exchange rate for a country’s currency will improve the balance of payments current account if:

(A) the price elasticity of demand for imports is greater than for exports.
(B) the price elasticity of demand for exports is greater than for imports.
(C) the sum of the price elasticities for imports and exports is less than one.
(D) the sum of the price elasticities for imports and exports is greater than one.

**Question 37**

All of the following are benefits which all countries gain when adopting a single currency such as the Euro, EXCEPT which ONE?

(A) Reduced transactions costs.
(B) Increased price transparency.
(C) Lower interest rates.
(D) Reduced exchange rate uncertainty.

(2 marks)

**Question 38**
Compared to a fixed exchange rate system, an economy will benefit from a flexible exchange rate system because:

(A) it enables businesses to vary their export prices.
(B) governments will not have to deflate the economy when balance of payments deficits occur.
(C) it reduces the cost of acquiring foreign exchange.
(D) it ensures that businesses never become uncompetitive in international markets.

(2 marks)

**Question 39**
The terms of trade are defined as

(A) the ratio of export prices to import prices.
(B) the total value of exports minus the total value of imports.
(C) the change in the volume of exports compared to changes in the volume of imports.
(D) the commercial conditions under which international trade takes place.

(2 marks)

**Question 40**
All of the following statements are true EXCEPT which ONE?

(A) Import quotas tend to reduce prices.
(B) Trade protection tends to reduce consumer choice.
(C) Trade protection tends to reduce exports.
(D) Tariffs tend to reduce competition.

(2 marks)
Mock Assessment 1 – Solutions

Solution 1
  A
Solution 2
  C
Solution 3
  D
Solution 4
  C
Solution 5
  B
Solution 6
  B
Solution 7
  B
Solution 8
  D
Solution 9
  A
Solution 10
  B
Solution 11
  A
Solution 12
  D
Solution 13
  C
Solution 14
  C
Solution 15
  A
Solution 16
  C
Solution 17
  A
Solution 18

(i)

<table>
<thead>
<tr>
<th>Economic process</th>
<th>Raise curve</th>
<th>Lower curve</th>
<th>Leave curve unaffected</th>
</tr>
</thead>
<tbody>
<tr>
<td>A rise in wage costs.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase opportunities for economies of scale.</td>
<td></td>
<td>X</td>
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</tr>
<tr>
<td>A fall in the price of raw materials.</td>
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<td></td>
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<td>A shift in the demand curve to the left.</td>
<td></td>
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<td>X</td>
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(ii)

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<thead>
<tr>
<th>Statement</th>
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<tbody>
<tr>
<td>The law of diminishing returns shows how long run cost tends to rise as if the scale of output becomes too great</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>A firm’s short run cost curve is always U shaped; the long cost curve may or may not be</td>
<td></td>
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<td>For most firms technological change is one of the most important economies of scale</td>
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Solution 19

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</table>
Solution 20
D

Solution 21
B

Solution 22
A

Solution 23
C

Solution 24
A

Solution 25
C

Solution 26
D

Solution 27
A

Solution 28
B

Solution 29
C

Solution 30

(i)

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**Solution 31**

D

**Solution 32**

B

**Solution 33**

B

**Solution 34**

A

**Solution 35**

C

**Solution 36**

D

**Solution 37**

C

**Solution 38**

B

**Solution 39**

A

**Solution 40**

A
Mock Assessment 2

Paper C4: Economics for Business

There are 40 questions in this paper. You are required to answer all 38 questions. The time allowed is ONE hour.

Questions

Question 1
For a business that produces both trucks and cars, the opportunity cost of a truck is

(A) the cost of the labour and components used in making the truck.
(B) the market price of the truck minus the profit margin.
(C) the cars that could have been produced with the resources used to make the truck.
(D) the cost of all the resources used to make the truck.

(2 marks)

Question 2
All of the following would lead to an outward shift in a country’s production possibility frontier (curve) except one. Which ONE is the EXCEPTION?

(A) Inward migration of workers into the country.
(B) Increased business investment in capital equipment.
(C) A decrease in the proportion of unskilled workers in the labour force.
(D) A fall in unemployment levels among workers.

(2 marks)

Question 3
The government could raise the rate of growth of economic welfare in a country by

(A) establishing education and training centres to improve human capital.
(B) raising taxes to increase expenditure on the welfare state.
(C) expanding aggregate demand to reduce unemployment.
(D) increasing state pensions each year in line with average earnings.

(2 marks)

Question 4
In recent years, economic growth in developed market economies has been characterised by

(A) the increasing relative importance of the secondary sector.
(B) the replacement of imports by substitutes produced domestically.
(C) an increasing role for production within the public sector.
(D) an increase in the proportion of the labour force employed in the service sector.

(2 marks)

Question 5
All of the following are factors of production except one. Which ONE is the EXCEPTION?

(A) Labour
(B) Raw materials
(C) Entrepreneurship
(D) Capital

(2 marks)

Question 6
In a market economy, prices fulfil all of the following functions except one. Which ONE is the EXCEPTION?

(A) A source of information for consumers.
(B) A means of allocating resources between different uses.
(C) A means of ensuring a fair distribution of income between groups.
(D) A signal to producers.

(2 marks)

Question 7
If the demand for a product has a price elasticity of demand of $-2$ then

(A) the demand for the good is said to be price inelastic.
(B) a fall in the price of the good will lead to an increase in total expenditure on the good.
(C) a change in the price of the good will lead to a proportionately smaller change in the quantity demanded.
(D) a fall in income will lead to a fall in the demand for the good.

(2 marks)

Question 8
Which ONE of the following would lead the demand curve for a normal good to shift to the left?

(A) A decrease in the supply of a complementary good.
(B) A rise in consumer disposable income.
(C) A rise in the price of the good.
(D) A rise in the price of a substitute good.

(2 marks)
Question 9
Which ONE of the following statements about prices is true?

(A) An increase in demand will lead to higher prices only if supply is price inelastic.
(B) A shortage of goods can occur if prices are set above the equilibrium level.
(C) If prices are flexible, there can be no market shortages or surpluses in the long run.
(D) The imposition of a minimum price for a good will always lead to a surplus of supply over demand.

(2 marks)

Question 10
If a business is experiencing economies of scale then

(A) the marginal cost of production will fall whenever output is increased.
(B) profits will always be greater if output and sales are increased.
(C) the marginal cost of production will always be less than the average cost of production.
(D) the average cost of production will fall in the long run.

(2 marks)

Question 11
All of the following are typical features of oligopolistic industries except one. Which ONE is the EXCEPTION?

(A) Small numbers of large companies.
(B) Heavy reliance on prices as a competitive device.
(C) Extensive use of branding and advertizing.
(D) Strong incentives for collusion between companies.

(2 marks)

Question 12
A merger between two companies is described as a horizontal merger if

(A) the companies are producing the same good or service.
(B) the companies are of approximately the same size.
(C) one company is a supplier to, or a customer of, the other company.
(D) the companies are operating in quite different industries.

(2 marks)

Question 13
Railway companies offering off-peak services at lower prices than for peak services, must ensure that, in the short run, these lower prices cover at least

(A) the variable costs of providing the service.
(B) overhead costs.
(C) the fixed costs of production.
(D) the average costs of providing the service.

(2 marks)

Question 14
If the process of producing a good involves net social costs greater than private costs

(A) the private sector will produce less than the socially optimal level of output.
(B) the private sector will not produce the goods because it would not be profitable to do so.
(C) the government could improve resource allocation by imposing a tax on the good.
(D) a subsidy should be paid to the private sector to offset the extra costs.

(2 marks)

Question 15
(a) Indicate whether each of the following statements is true or false.

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) If the supply of a good decreases, its price will rise and the demand curve for the product will shift to the left.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) The supply of a good is described as price inelastic if a fall in price leads to a smaller proportionate fall in the quantity supplied.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) If a tax is imposed on a good, the burden of the tax shifted to consumers will be greatest when the demand for the good is price inelastic.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) If the demand for a good has a price elasticity of $\frac{1}{0}$ then a 10% fall in price will lead to a 10% fall in demand.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(4 marks)

(b) For each of the following processes, indicate what will be the effect on the market supply curve of a good.

<table>
<thead>
<tr>
<th>Process</th>
<th>The supply curve will shift to the left</th>
<th>The supply curve will shift to the right</th>
<th>The supply curve will be unchanged</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) The development of a new technology which reduces production costs</td>
<td></td>
<td></td>
<td></td>
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</table>
(4 marks)

(c) The following is a list of different types of market structure.
   Perfect competition
   Monopolistic competition
   Oligopoly
   Duopoly
   Monopoly

Match to each of the following situations the market structure that is being described.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Market structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) In the long run abnormal profits are competed away by the entry of new firms and for each firm output will be less than the optimum level of output.</td>
<td>Perfect competition</td>
</tr>
<tr>
<td>(ii) There are barriers to entry and in the long run the firm can still earn abnormal profits.</td>
<td>Oligopoly</td>
</tr>
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</table>

(2 marks)

**Question 16**

The supply of labour to a particular occupation will be most price elastic when

(A) wage rates are higher than the average for the economy.
(B) there is a significant level of education required to enter the occupation.
(C) the demand for labour is growing rapidly.
(D) the occupation requires no specific skills.

(2 marks)
**Question 17**

All of the following would tend to increase the degree of competition in a market in the long run except one. Which ONE is the EXCEPTION?

(A) An increase in the number of firms in the market.
(B) Significant economies of scale in the industry.
(C) An increase in consumer knowledge and awareness of the product.
(D) A reduction in barriers to entry into the industry.

(2 marks)

**Question 18**

What will be the effect of a fall in the price of DVD players on the demand for digital video discs?

There will be

(A) a leftward shift in the demand curve for digital video discs.
(B) a movement upward along the demand curve for digital video discs.
(C) a movement downward along the demand curve for digital video discs.
(D) a rightward shift in the demand curve for digital video discs.

(2 marks)

**Question 19**

In the long run in perfectly competitive markets, no firms can earn excess profits. This is because

(A) new firms enter the industry, increasing supply and reducing the market price.
(B) all firms produce identical (homogeneous) products and therefore no single firm can charge a price above the market price.
(C) consumers have perfect knowledge and will always buy from the lowest price supplier in the market
(D) only monopoly firms can earn excess profits in the long run.

(2 marks)

**Question 20**

Which ONE of the following is an example, of an external social benefit?

(A) A company exporting a large proportion of its output.
(B) A company producing a product so cheaply that all members of society could afford to purchase it.
(C) A company investing in a training programme for its workers who then can be employed in a wide range of other firms and industries.
(D) A fall in cost for companies as imported raw materials become cheaper.

(2 marks)
Question 21
If a business sells a product with a low income elasticity of demand then

(A) when the price of its product is reduced, the quantity sold increases less than proportionately.
(B) a fall in consumer incomes will produce a smaller than proportionate fall in the quantity sold.
(C) the volume of sales is largely unaffected by changes in the prices of substitute and complementary goods.
(D) the income of the company from its sales does not alter much when the price of the product is changed.

(2 marks)

Question 22
Other things being equal, each of the following would lead to a rise in the circular flow of income in an economy, except one. Which ONE is the EXCEPTION?

(A) A reduction in the rate of income tax.
(B) A fall in consumer demand for imported goods.
(C) An increase in business investment.
(D) A rise in the propensity to save.

(2 marks)

Question 23
Which ONE of the following is included when calculating national income?

(A) Pensions paid to retired people.
(B) The value of total output at each stage in the production of good and services.
(C) The total taxation revenue of the government.
(D) That part of incomes derived from exporting goods and services.

(2 marks)

Question 24
The upswing phase of the trade cycle normally leads to

(A) a fall in structural unemployment.
(B) a reduction in inflationary pressures.
(C) the government budget moving towards a surplus.
(D) the current account of the balance of payments moving towards a surplus.

(2 marks)

Question 25
Governments regard inflation as undesirable because inflation

(A) makes everyone in the economy poorer.
(B) damages the ability of the price system to allocate resources efficiently.
(C) redistributes wealth from debtors to creditors.
(D) reduces the taxation revenue received by the government.

(2 marks)

**Question 26**

Each of the following is a source of funds for capital investment for businesses except one. Which ONE is the EXCEPTION?

(A) The central bank.
(B) Commercial banks.
(C) Internally generated funds.
(D) The stock market.

(2 marks)

**Question 27**

Which ONE of the following is an element of supply side policy?

(A) A reduction in taxation in order to reduce disincentives to work and effort.
(B) Management of the money supply to influence the level of aggregate monetary demand.
(C) Raising aggregate demand in order to encourage businesses to increase the supply of goods and services.
(D) Government subsidies to industries where there are serious supply bottlenecks.

(2 marks)

**Question 28**

Financial institutions are said to provide financial intermediation. This is best defined as providing

(A) a means of payment by cheques.
(B) financial advice to business customers.
(C) an efficient means of linking net savers with net borrowers.
(D) a service for the purchase and sale of foreign exchange.

(2 marks)

**Question 29**

(a) Indicate whether each of the following statements is true or false.

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) The higher is the marginal propensity to save, the lower will be value of the multiplier.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) The government can reduce aggregate demand by lowering interest rates since this will discourage savings and investment.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(b) For each of the following events, indicate whether the direct effect of each on an economy will be to raise inflation, reduce inflation or leave the rate of inflation unchanged. Assume that the economy is close to full employment.

<table>
<thead>
<tr>
<th>Event</th>
<th>Raise inflation</th>
<th>Lower inflation</th>
<th>Leave inflation unchanged</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) A rise (appreciation) in the exchange rate for the country’s currency.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) A significant increase in the money supply.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) The removal of house prices from the consumer price index.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) A rise in business expectations leading to an increase in investment.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(4 marks)

(c) The following is a list of types of unemployment.

- Structural unemployment
- Cyclical unemployment
- Real wage (Classical) unemployment
- Frictional unemployment
- Seasonal unemployment

Match the above types of unemployment to the following definitions.

<table>
<thead>
<tr>
<th>Definition of Unemployment</th>
<th>Type of unemployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Unemployment that occurs in particular industries and arises from long term changes in the pattern of demand or supply.</td>
<td>Structural unemployment</td>
</tr>
<tr>
<td>(ii) Unemployment associated with industries or regions where the demand for labour and wage rates regularly rise and fall over the year.</td>
<td>Cyclical unemployment</td>
</tr>
</tbody>
</table>

(2 marks)
Question 30
All of the following are effects on a business of a rise in interest rates except one. Which ONE is the EXCEPTION?

(A) Higher returns on financial reserves.
(B) A higher net present value of investment projects.
(C) A rise in the cost of servicing existing bank debts.
(D) Falling credit based sales.

(2 marks)

Question 31
The natural rate of unemployment is the rate at which the demand for labour and the supply of labour are equal. If fiscal policy attempts to keep unemployment below the natural rate the consequence will be

(A) the rates of unemployment and inflation will both fall.
(B) the rates of unemployment and inflation will both rise.
(C) the rates of unemployment and inflation will both be stable.
(D) the rate of unemployment will be stable but the inflation will accelerate.

(2 marks)

Question 32
Which ONE of the following is a withdrawal in the circular flow of income model

(A) investment.
(B) imports.
(C) government expenditure.
(D) exports.

(2 marks)

Question 33
The principle of comparative advantage (cost) demonstrates that countries can benefit from international trade because

(A) it permits countries to export the goods in which they have a production surplus.
(B) all countries will have an absolute cost advantage over others in the production of some goods and services.
(C) countries can specialise in the production of those goods and services in which they are relatively efficient.
(D) countries can run trade surpluses by exporting more than they import.

(2 marks)

Question 34
A depreciation (fall) in the exchange rate for a country’s currency would lead to all of the following except one. Which ONE is the EXCEPTION?
(A) A rise in the domestic price of goods imported into the country.
(B) A fall in foreign exchange price of goods exported from the country.
(C) A fall in the domestic price of goods exported from the country.
(D) A fall in the amount of foreign currency that can be bought with one unit of the domestic currency.

(2 marks)

Question 35
All of the following are features of the process of globalisation except one. Which ONE is the EXCEPTION?

(A) Lower levels of foreign direct investment.
(B) Rising levels of international trade relative to national income.
(C) Reduced economic independence for individual economies.
(D) Greater international division of labour and specialisation.

(2 marks)

Question 36
(a) Indicate whether each of the following statements is true or false.

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) If a country imposes trade barriers on its imports,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>that country’s economic welfare will be reduced.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) An advantage of flexible exchange rate regimes is</td>
<td></td>
<td></td>
</tr>
<tr>
<td>that uncertainty is reduced for businesses.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) An advantage of fixed exchange rate systems is</td>
<td></td>
<td></td>
</tr>
<tr>
<td>they make trade deficits less likely to occur.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(3 marks)

(b) For each of the following events, state whether the direct effect on a country with a flexible exchange rate would be to lead to a rise (appreciation) or fall (depreciation) in the country’s exchange rate or to leave the exchange rate unaffected.

<table>
<thead>
<tr>
<th>Event</th>
<th>Rise in the exchange rate (appreciation)</th>
<th>Fall in the exchange rate (depreciation)</th>
<th>Leave the exchange rate unaffected</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) A rise in interest rates in the country.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) A rise in the demand for imports in the country.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) A significant short term fall in share prices in the country.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(3 marks)
Question 37
All of the following are features of a common market except one. Which ONE is the EXCEPTION?

(A) The absence of barriers to trade in goods and services within the common market.
(B) The free movement of factors of production within the common market.
(C) The adoption of a common external tariff by all members of the common market.
(D) The use of a single, common currency within the common market.

(2 marks)

Question 38
If capital is internationally mobile then

(A) all rich counties will become net exporters of capital.
(B) differences in interest rates between countries will be reduced.
(C) differences in exchange rates between countries will be reduced.
(D) multinational companies will always take their capital to low wage economies.

(2 marks)

Question 39
All of the following items would appear on the current account of a country’s balance of payments except one. Which ONE is the EXCEPTION?

(A) Interest paid to a resident on a savings account held in another country.
(B) Expenditure by a resident on a foreign holiday.
(C) The export from the country of an item of capital equipment.
(D) A purchase of shares on the stock market by an overseas investor.

(2 marks)

Question 40
All of the following are features of globalisation except one. Which ONE is the EXCEPTION?

(A) Rising trade ratios for countries.
(B) Increased international capital flows.
(C) Improved terms of trade for all countries.
(D) Reduced barriers to international factor movements.

(2 marks)
Mock Assessment 2

Paper C4: Economics for Business

✓ Solutions

Solution 1
C

Solution 2
D

Solution 3
A

Solution 4
D

Solution 5
B

Solution 6
C

Solution 7
B

Solution 8
A

Solution 9
C

Solution 10
D

Solution 11
B

Solution 12
A

Solution 13
A

Solution 14
C

Solution 15
(a) (i) False
   (ii) True
   (iii) True
   (iv) False
(b) (i) To the right
    (ii) To the right
    (iii) Unchanged
    (iv) To the left
(c) (i) Monopolistic competition
    (ii) Monopoly

Solution 16
D

Solution 17
B

Solution 18
D
Solution 19
A

Solution 20
C

Solution 21
B

Solution 22
D

Solution 23
D

Solution 24
C

Solution 25
B

Solution 26
A

Solution 27
A

Solution 28
C

Solution 29
(a) (i) True
(ii) False
(iii) False
(iv) True
(b) (i) Lower inflation
(ii) Raise inflation
(iii) Leave inflation unchanged
(iv) Raise inflation
(c) (i) Structural unemployment
(ii) Seasonal unemployment

Solution 30
B

Solution 31
D

Solution 32
B

Solution 33
C

Solution 34
C

Solution 35
A

Solution 36
(a) (i) True
(ii) False
(iii) False
(b) (i) Rise in the exchange rate
(ii) Fall in the exchange rate
(iii) Exchange rate unaffected

Solution 37
D

Solution 38
B

Solution 39
D

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