



MICROECONOMICS

R P Viljoen

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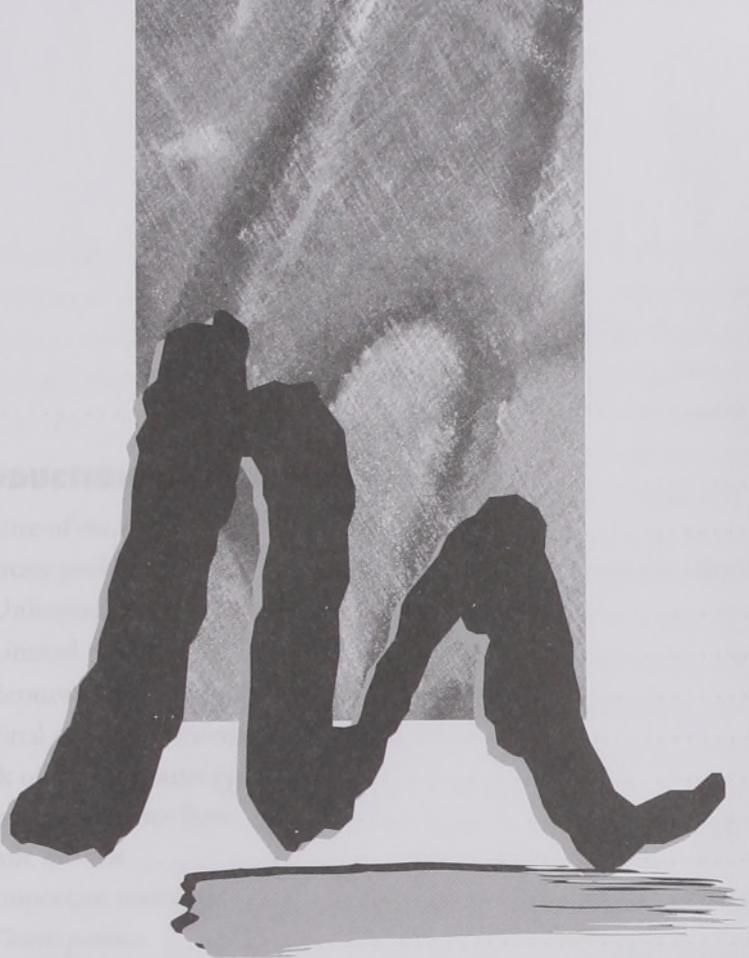


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PREFACE

Microeconomics is traditionally regarded by students as a difficult subject, often because they cannot see the wood for the trees – too many less important matters distract their attention from the bigger picture. This book tries to avoid this problem. All the important aspects of microeconomics which an undergraduate student is supposed to note are discussed. At the same time I attempted to be concise and to the point and not to fall into the temptation of being sidetracked by inessentials.

This book is aimed at students who want to obtain an intermediate knowledge of microeconomics, but it is also written in such a way that students or readers with no preknowledge of the subject can understand it. It starts with basic principles, then more advanced issues are attended to. The approach is non-mathematical, and graphs are mostly used to explain the models.

Microeconomics was written mainly for students at distance-education institutions and may therefore contain more repetition of important facts than would otherwise be necessary. Other students should, however, also benefit from this approach. No microeconomics course can avoid the technical aspects, but here the aim was to keep the analysis as digestible as possible. Practical examples are given where appropriate, without distracting the student from the main argument. Boxes are sometimes used to highlight such practical examples or to supply additional explanations.

The book focuses on basic concepts such as demand, supply, price formation, consumer behaviour, production functions and the decision-making of firms under different market conditions (perfect competition, monopoly, monopolistic competition and oligopoly). The last chapter contains an introduction to general equilibrium analysis and the theory of welfare economics. The contents are, therefore, based mainly on conventional neo-classical theory, as usually presented in undergraduate courses. Price formation of production factors is not discussed – the reason being that the topic is offered mostly as a separate course (eg labour economics).

An introduction at the beginning of each chapter gives a résumé of the chapter and puts the subject matter in perspective. Study objectives draw the attention of the reader to the most important aspects. A list of important concepts appears at the end of each chapter, more or less in the order in which they appear in the text. These are followed by model questions which give an indication of the type of question that can be set in an examination paper.

The book is published in both English and Afrikaans. Symbols and abbreviations typical of each language are used in the different editions.

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Roelie Viljoen

Pretoria

October 1998

INTRODUCTION TO MICROECONOMICS

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Without microeconomics we would have no explanations for most of the important economic questions that crop up. Microeconomics equips us to make sense of and find solutions to economic events and questions – not only about the South African economy but also any other economy. Microeconomics supplies the answers to questions such as the following: Why is it that when a country spends more on defence, it will probably have to reduce its expenditure on housing? Why is beef more expensive than chicken? Why did the world price of oil rise sharply during the seventies, and drop during the eighties? Why do actuaries earn more than teachers? Why are certain goods and services provided by the government instead of the private sector? Why do some countries use a large number of labourers and relatively little machinery for a particular production process, whereas it is the other way round in other countries? These are simply a few of the questions to which answers and solutions can be found with the aid of microeconomic theory.

Microeconomics also explains some of the anomalies we come across in our daily lives. An entrance ticket for an ordinary soccer match in South Africa might cost R15, but a ticket to an important World Cup match overseas is exorbitantly expensive. One person may pay R980 to fly from Johannesburg to Cape Town, but the passenger in the next seat may only be paying R499. A public servant might earn around R50 000 per year, but a golfer could receive over R1m for winning a single important tournament. Telephone calls cost less in the evenings than during the day. These are just a few examples of the numerous issues on which microeconomics can shed more light.

Microeconomics also provides the theoretical background for most of the applied fields of economics, such as development economics, international trade, public finance, labour economics, regional economics and agricultural economics. These specialisations cannot be mastered without a thorough knowledge of microeconomic theory. Students are therefore usually expected to study microeconomics before they tackle any of the other fields.

A knowledge of basic economic theory, combined with the ability to apply it, is undoubtedly a huge advantage to any citizen who wants to gain an insight into the numerous social and economic questions of the day and into the economic phenomena which we can see taking place around us. Such knowledge is also useful in helping us to predict what is likely to happen in the world around us when economic changes take place. The manager or manufacturer who has to plan ahead, the marketer who wants to know how markets work and how they differ from one another, the entrepreneur who is engaged in

strategic planning, the banker or broker who has to advise clients – in fact anyone who works in a dynamic environment – will benefit from a sound knowledge of economics.

In courses such as this one the emphasis is on how a consumer could spend his or her income to the best advantage, how a firm should go about keeping production costs as low as possible and maximising profits, how a particular market structure (perfect competition, monopoly, monopolistic competition and oligopoly) comes into being and how this influences the welfare of the community, how the prices of factors of production are determined, and how the government can influence social welfare by means of taxes and subsidies.

In this introductory chapter we explain what microeconomics is and where it fits into economics as an area of study. The scarcity problem, which every society faces all the time, is discussed first. The basic economic functions which have to be fulfilled by any economic system are then studied. The way these functions are fulfilled in a market economy such as the South African economy is also examined. The operation of the economic process is explained with reference to the circular flow diagram. The role of economic models is then discussed and lastly a few concepts and assumptions that you ought to know before you begin the course are briefly dealt with.

It is unavoidable in a chapter such as this that concepts will be mentioned that will only become clear at a later stage. One such concept is the market economy, which is the system on which the South African economy is based (as indeed are the economies of most countries in the world) and which is also the system studied in microeconomics. We should mention at this stage that the most important characteristics of a market economy are that the government permits private ownership, individuals and firms are allowed to take their own economic decisions and there is competition.

After having studied this chapter, you will

- understand and be able to explain the nature and importance of microeconomics
- be able to explain the scarcity problem
- know the difference between economic goods and free goods
- be able to distinguish between final goods and intermediary goods
- be able to describe the function of the economic system
- be able to explain how an economy works, using the circular flow diagram
- be able to write an essay on the use of economic models
- understand the concepts *ceteris paribus* and equilibrium

▶ THE NATURE OF MICROECONOMICS

Economics is divided into two broad sections: microeconomics and macroeconomics. The prefix 'micro' is derived from the Greek word *mikros*, which means small. Microeconomics is the section of economics which deals with the actions of individual decision-making units such as consumers, firms, entrepreneurs and the owners of factors of production. Briefly, microeconomics is concerned with all the individuals or separate units which play a part in the functioning of the economy. These separate elements of the economy are placed under a microscope, figuratively speaking, and studied in detail. Microeconomics explains how and why these decision-making units take particular decisions. For example, it explains how consumers take certain purchasing decisions and how their choices are influenced by changes in prices and income. Microeconomic theory also explains the principles according to which firms decide how many workers to employ, the quantity of goods to produce and at what price to sell the goods. Stated more formally, *microeconomics involves a study of the way in which individual decision makers, functioning as consumers or producers, use their limited resources in an attempt to achieve their respective economic goals, namely the maximisation of utility and profit*. Through the study of the behaviour and interaction of individual firms and consumers, microeconomics also provides explanations for the origin and functioning of industries and markets, the way they differ from each other and how they are influenced by government policy or developments in the global economy.

Micro-economics

Naturally, the analysis of consumer and producer behaviour patterns is not simply carried out for interest's sake. These behaviour patterns are used to *explain* what is happening in the economy, to *predict* what could possibly happen, and to help policy makers to choose or develop the most suitable *economic policy*. The application of microeconomic theory is therefore ultimately a practical matter.

Macroeconomics, the other important section of economics, deals with the economy as a whole. The prefix 'macro' is derived from the Greek word *makros* which means 'large'. The emphasis therefore falls on the broad perspective, the big picture, so to speak. The economic behaviour of large groups of participants is studied and an image of the total economic system is developed. Topics such as total production, total income and total expenditure in the economy, economic growth, unemployment and inflation are studied. The dividing line between microeconomics and macroeconomics is not always very distinct, however, because macroeconomics also involves the analysis of markets – an analysis of the total (or aggregate) market for goods and services in a country is one example. In order to understand the total magnitudes, one has to begin by understanding the behaviour of the firms, consumers, workers and investors that collectively make up the market. In the end we find that the big picture is made up of a whole lot of smaller parts.

To sum up, while microeconomics studies the operation of the economy at the level where basic decisions are taken, macroeconomics concentrates on total economic behaviour and the performance of the economy as a whole. In this book the emphasis falls on microeconomics.

► THE SCARCITY PROBLEM

In the previous section microeconomics was defined as a study of the way in which individual decision makers, functioning as consumers or producers, use their limited resources in an attempt to achieve their respective economic goals, namely the maximisation of utility and profit. The fact that there are only 'limited resources', in other words that scarcity does exist, forms the basis for the study of economics in general and microeconomics in particular.

Scarcity is something which each of us encounters daily. Every student would like to have more time to spend on his or her studies, but would also like more time for sport or recreation. Similarly, most students would like to study full time, but would also like to work full time in order to earn a salary. Most of us would appreciate a luxury car, but at the same time we want enough money for overseas travel. We all experience the feeling of wanting to buy certain things but knowing we can't afford them. The question is: Why can't we always have *more* of these things? The answer is, first, that the material wants of society, that is the material needs of individuals and institutions, are unlimited and can never be fully satisfied; and second, economic resources (ie the resources used to produce goods and services) are limited or scarce.

► Unlimited wants

Wants

What is meant by 'material wants' in the paragraph above? First, the term indicates the needs of consumers to obtain various goods and services which provide utility. (Utility is the term economists use for satisfaction or pleasure.) A broad spectrum of goods would provide utility for consumers: houses, cars, groceries, clothing, television sets – the list is endless. The goods which are capable of satisfying people's wants are usually divided into two groups: first, there are the essentials (eg clothing, housing and food) and second, there are the luxuries (eg expensive jewellery, perfume). It is self-evident that what may be a luxury for Jones could be an essential for Smith, or that a product which is considered an essential these days was regarded as a luxury a few years ago.

Services also satisfy consumer wants. A haircut, an operation, repairs to a car, legal advice – all these are examples of services which satisfy people's wants. The difference between goods and services is not always as clear as it may appear at first sight. Many goods, such as cars and washing machines, are bought for the sake of the service they give their owners.

Material wants include those of businesses and the state. Businesses (firms) require factory buildings, machinery, trucks, storage space, communication systems and numerous other items that will help them to reach their production targets. The state, which reflects the collective needs of society and also has needs of its own, would like to acquire more schools, hospitals, roads, military equipment and so on.

Seen as a whole, the material wants of society are unlimited or insatiable for all practical purposes, which naturally means that they can never be met in full. Although an individual's wants regarding a specific product or service can be satisfied (we could all probably make do with one appendectomy) they can never be satisfied for goods and services in general. Suppose we were each asked to draw up a list of goods and services we would like to have but do not have at present. If we spent a bit of time on it we would probably come up with impressively long lists. Over a period of time we might satisfy some of the wants on our lists, but we would continually be adding new ones. Material wants seem to breed like rabbits. The rapid development of new products has created new wants among people and institutions, and extensive advertising ensures that consumers stay right up to date with what is available. A few years ago products such as personal computers, light beer, digital watches and microwave ovens did not even exist and consumers did not appear to miss them. The minute the products appeared on the market, however, consumers began to want them and started buying them. Also, it is part of human nature not to be content when basic wants are satisfied – the acquisition of a black-and-white TV set often leads to a desire for a colour set; owning a small car leads to a desire for a bigger or more luxurious model.

To sum up, we can say that at any given time the individuals and institutions that make up society have innumerable unfulfilled wants. Some of the wants (eg food, clothing and housing) have a biological origin. Other wants are influenced by the customs and standards of the society of which the individual or institution is a part. For example, the specific types of clothing, food and housing which people want are determined mainly by the social and cultural environments in which they live. Wants change and multiply over time – a process which is aided by the development of new products and extensive advertising and sales promotion.

It is important to note that the goal of all economic activity is to satisfy all these divergent material wants.

► Limited resources

We shall now turn our attention to the fact that economic resources are limited or scarce. Precisely what does the term 'economic resources' mean? In general it refers to all the natural, human and manufactured resources which are used to

manufacture goods and services. Another term for 'economic resources' would be factors of production. Clearly, many different things are included: all types of labour; factory buildings, machinery and equipment which are used to produce or process manufactured goods or agricultural produce; various means of transport and communication; land, and marine and mineral resources. Economic resources are usually divided into the following four categories: natural resources, labour, capital and entrepreneurial ability. We shall now briefly examine each of the factors of production (and the fact that they are limited in extent).

- The term *natural resources* is an umbrella term – it refers to all the 'gifts of nature' which can be used in the production process. These include agricultural land, natural forests, minerals, water, vegetation, oil reserves, marine resources and other forms of animal life. Natural resources occur in limited quantities, and when a resource has been exhausted it cannot be replaced easily. This has given rise to a great deal of concern, so much so that big international conferences have been held on this subject.
- *Labour* is a broad term which refers to all the human physical and mental abilities which can be used to produce goods and services. (Entrepreneurial ability is such a special talent that it is not included here but is regarded as a special category.) The contributions made by everybody, from the humblest to those working in the top professions, are classified as labour: street sweepers, woodcutters, clerks, professional sportsmen, nuclear physicists – all fall into this category. The amount of labour available in a country is determined by the size of the population and the portion of the population that is able to and wants to work. The quality of the labour force is even more important than its sheer size. As you will readily understand, there are limits to both the quantity and the quality of labour, especially in the short term.
- *Capital* or capital goods refers to all manufactured resources which are used to produce goods and services and get them to the consumers. This category includes machinery, tools, equipment, factory buildings, storage space, as well as transport and distribution facilities.

Two points are important here. First, capital goods differ from consumer goods in the sense that consumer goods satisfy consumer needs directly, whereas capital goods do so indirectly by making the production of consumer goods possible. Second, the term 'capital' as it is defined here can be confusing because the word is not used in a financial or monetary sense and therefore does not refer to money. When we refer to capital as a production factor we mean all tangible things used to manufacture other goods. It is true that when they speak of 'capital', businessmen, bankers and accountants are often referring to money. However, money on its own cannot produce anything. Real capital (machinery, tools and other

equipment) is an economic resource (ie production factor) but financial capital or money is not regarded as an economic resource.

Capital goods do not have an unlimited life. Wear and tear and technological obsolescence make it necessary to replace capital goods from time to time. The capital goods of a country that is progressing economically will increase over time, but nevertheless at any given time only a certain quantity will be available. Like all other factors of production, therefore, capital goods are scarce.

- *Entrepreneurial ability*, as we have already said, is a very special talent and it plays an extremely important role in the market economy. Entrepreneurs are people who have the ability to take the initiative and have the drive to combine the factors of production of capital, labour and natural resources in such a way that goods and services are produced. Entrepreneurs take the important business decisions that shape the course taken by an enterprise. Entrepreneurs are innovative in their thinking – they see new opportunities, introduce new products, use new production methods and also develop new management methods. The nature of their activities makes entrepreneurs risk takers. An entrepreneur cannot be certain in advance that his or her enterprise will be a success; in fact the reward for the entrepreneur's time, trouble and talents may be either high profits, or losses, or even bankruptcy.

Because entrepreneurial ability is such a special talent, it is self-evident that true entrepreneurs are rare. It has often been cited as a major problem that South Africa has too few entrepreneurs.

The income that owners of factors of production can earn by using them for the production of goods and services is the following: *rent* (natural resources), *wages* and *salaries* (labour), *interest* (on capital) and *profit* (entrepreneurial ability).

► Economic goods and free goods

An economic good is a good (product) which is produced at a cost by using scarce factors of production. Economic goods are therefore also known as scarce goods. Most goods are economic goods and are traded at a price. A free good is a good which is not scarce and therefore has no price. Air, sunshine and seawater at the coast are usually regarded as free goods. As a result of pollution, fresh air and clean seawater are not always so freely available, however, and in some cases they could even become a scarce product. The gifts of nature are sometimes regarded as free goods because they are not produced by man, but often time and trouble are required to make these gifts available to people. Minerals have to be mined at high cost and the storage and distribution of water is a very expensive process.

Economists are naturally interested in economic goods, that is goods where there is a scarcity problem. As indicated in the previous paragraph, this would include virtually the whole spectrum of goods and services.

► **Final goods and intermediary goods**

Final goods are goods used by individuals, households and firms. In households, food and clothing are good examples of final goods. Intermediary goods, on the other hand, are goods which are sold for use as inputs in the production of other goods. It is characteristic of intermediary goods, therefore, that they have to be processed before being sold to the end-consumers. Steel would be an intermediary product for car manufacturers.

Final and intermediary goods will both be the subject of discussion in the further chapters of this book. In the chapter in which consumer behaviour is discussed we are obviously concerned with final goods. When it comes to the analysis of the behaviour of firms under various market conditions, the firms could be producers of either final goods or intermediary goods – the analysis would not be affected.

► **THE TASK OF THE ECONOMIC SYSTEM**

Any society, from the most primitive to the most developed, has the constant problem of scarcity: the unlimited wants of society have to be supplied from restricted economic resources. Because resources are scarce, it is self-evident that they have to be used as efficiently as possible. In the process of meeting the wants and needs of society as far as possible, answers to the following three important questions have to be obtained:

- What should be produced?
- How should it be produced?
- For whom should it be produced?

We shall now examine each of these questions and also consider how the price mechanism in a market economy succeeds in solving them. (We mentioned in the introduction that an important characteristic of a market economy is that government allows individuals and firms to take their own economic decisions.)

What *What should be produced* means what goods and services, and what quantities of those goods and services, should be produced. Because no society is able to produce all the goods and services for which there is a need, choices have to be made as to which goods and services should be produced and which should not. In a market economy these important issues are decided by the price mechanism. That is to say, only those goods and services will be produced for which consu-

mers are able and prepared to pay a price which is at least high enough to cover all production costs. For instance, vehicle manufacturers would not manufacture cars which cost R1m if there was no market for them. Consumers can prompt firms to manufacture more of a certain product by being willing to pay a higher price. On the other hand, a reduction in the price which consumers are prepared to pay for a product usually means that less of that product will be produced. For example, a rise in the price of chickens and a drop in the milk price would be a sign (signal) to farmers to produce more poultry and less milk.

How *How it should be produced* refers to the way economic resources are combined to produce the goods and services consumers want. Questions such as the following must be answered: Should clothing (or any other product) be produced by using a lot of capital and a small amount of labour in the production process, or should a lot of labour and a small amount of capital be used? Because resources are scarce, it is important that whatever resources are available should be used as efficiently as possible. In a market economy the way in which the economic resources are combined in the production process is determined by the price mechanism. The prices of resources are a reflection of their relative scarcity and firms combine the economic resources they use in such a way that costs are kept to a minimum. By doing so firms are able to utilise resources in the most efficient and productive manner possible in order to produce the goods which society most desires and values. If the price of a resource rises, firms try to use less of it in the production process and to replace it with cheaper resources in order to keep their production costs as low as possible. For example, an increase in minimum wages would encourage firms to mechanise and use machinery instead of labour.

For whom *For whom should goods be produced?* This refers to the way in which the output (production) is distributed among the members of the community. This is also decided by the price mechanism. Income is the source of expenditure and consumers 'vote' for what they want by expending their income on particular goods and services. Individuals who have unusual skills or who possess a larger quantity of other economic resources will earn higher incomes and be able to pay more for products. Such individuals will therefore have a greater ability to prompt firms to produce more of the products they want. Their greater financial clout enables them to ensure that more of their wants are satisfied. For example, in a society more goods and services are produced for the average actuary than for the average clerk, simply because actuaries earn far more than clerks.

The pure market system is not without defects – for example it contains a tendency towards inequality and instability. Adjustments sometimes have to be made to compensate for the defects and the government has to take responsibility for such adjustments. But on the whole the market mechanism is a remarkable economic instrument. It is almost incredible that a complicated

economic system can function fairly smoothly without any agency to coordinate the millions of disparate decisions which are taken daily by the various participants. Further attention is given in Chapter 2 to the operation of the market mechanism.

▶ THE ECONOMIC CIRCULAR FLOW

We mentioned previously that microeconomics focuses on the actions of individual decision-making units in the economy; these decision-making units can be divided into two broad categories, namely households (ie consumers) and firms.

Interaction There is a continuous interaction between households and firms, an interaction that is so important that it forms the core of the market economy. Two kinds of markets play an important part in this interaction: the market for factors of production and the market for goods and services (see Fig 1-1). The part played by these two kinds of markets can be explained as follows: households are the owners of factors of production which are required by firms to produce goods and services. The households offer these factors of production to firms in the market for factors of production; in exchange the households receive payment (wages and salaries, rent, interest and profits) from the firms. The firms combine the factors of production to produce goods and services which are then sold to households on the market for consumer goods. The income of the households is also the expenditure of the firms on production. The expenditure of the households on goods and services equates to the income of the firms.

This is the origin of a circular flow in the economy between households and firms. On the one hand there is a flow of goods and services from firms to households via the goods market, with a monetary flow in the opposite direction. On the other hand there is a flow of factors of production from households to firms via the factor market, with a monetary flow in the opposite direction.

This explanation, which is illustrated in Figure 1-1, is a much simplified representation of the way a country's economy works, but it is important because it gives us an idea of how the various pieces of the economic jigsaw fit together. It therefore also gives us a general impression of the framework within which microeconomic activities take place. In this course we will concentrate on an analysis of the goods market, the behaviour of households (consumers) and the way firms operate under different market conditions. The market for factors of production (eg labour) is studied in other courses and has therefore been omitted here.

▶ ECONOMIC MODELS

The most important aim of microeconomic theory is to explain and predict the economic behaviour of individual consumers and firms, and the operation of

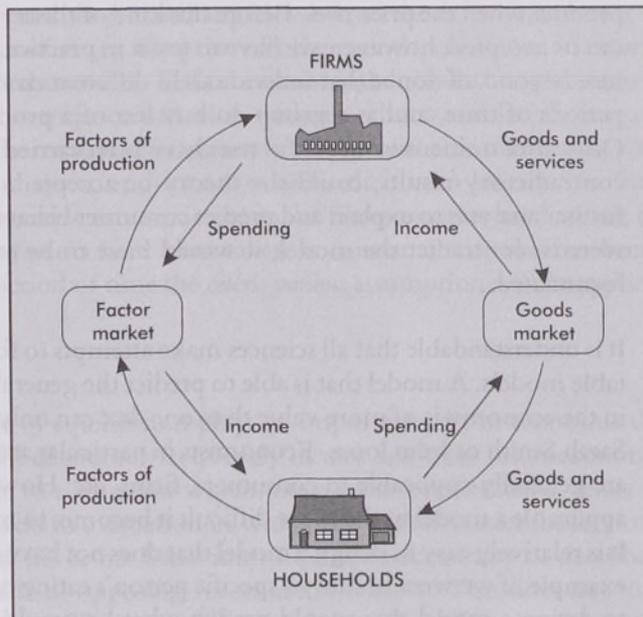
markets, with a view to policy making. It is no easy task because in any large economy there are millions of separate decision-making units, each making individual decisions. How is it possible to make any sense out of such a complicated situation? The answer is that we approach the study of economics by using models. A model can be regarded as the formal representation of a theory. The use of models is not confined to economics; models are used in other disciplines as well. Models are simplifications or abstractions of reality – their purpose is to make sense of an extremely complicated world by emphasising only the most important factors, while omitting all unimportant details. Stephen Hawking, the world-famous theoretical physicist, said: ‘A theory is a good theory if it satisfies two requirements: It must accurately describe a large class of observations on the basis of a model that contains only a few arbitrary elements, and it must make definite predictions about the results of future observations.’ A road-map is a good example of a simple model. If you were driving from Messina to Cape Town the last thing you would want is a realistic picture of the route, showing every turn-off, stream, koppie and farmhouse. That kind of map would be so confusing (and big) that it would be totally impractical. What you would need is a map that is a simplification of reality and shows only the main routes, towns and cities.

Models

Figure 1-1

The economic circular flow diagram

This illustrates the flow of goods and services from firms to households, and the flow of factors of production from households to firms. In each case there is a monetary flow in the opposite direction.



A model consists of a number of assumptions which can be used to draw conclusions (or make predictions). Suppose an astronomer wanted to build a model of our solar system. He could represent each of the planets as a dot on a sheet of paper, show their orbits as elliptical circles, and make the assumption that their positions relative to the sun will change in accordance with certain mathematical equations. With the aid of a model of this kind it is possible to predict events such as solar eclipses. We have already mentioned that, in order to be useful, a model should be a simplification of reality. The assumptions should obviously be related to the purpose for which the model will be used, but those assumptions need not necessarily reflect reality exactly in all respects. In the example of the astronomer's model the fact that planets are not dots would make no difference. What is more, if the mathematical equations representing the movements of the planets were not one hundred per cent correct it would not make much difference either, provided the model was able to predict events so reliably that it was still useful despite any inaccuracies.

In both the social and the natural sciences models based on simplified (and sometimes idealised) conditions have very useful applications. The assumptions sometimes relate to variables that cannot even be directly measured, such as the concept of 'utility' in economics. That it cannot be measured does not mean that such a variable has no function or application. Its value is that it could lead to the development of models that are powerful and able to produce accurate predictions.

A theory or model is usually the result of an observation made in society. We could make the observation, for example, that consumers generally buy less of a product when the price rises. Before this kind of theory about consumer demand can be accepted, however, we have to test it in practice. We would have to make sure beyond all doubt that individuals in different environments, over different periods of time, and as a group do buy less of a product when the price rises. Only after numerous successful tests have been carried out and in the absence of contradictory results, could the theory be accepted. It could then be used in further analyses to explain and predict consumer behaviour. But if the test results were to contradict the model, it would have to be rejected and a new model formulated.

It is understandable that all sciences make attempts to formulate generally acceptable models. A model that is able to predict the general behaviour of consumers in the economy is of more value than one that can only predict the behaviour of Sarah Smith or John Jones. Economists in particular are interested in models that are generally applicable to consumers, firms, etc. However, the more generally applicable a model is, the more difficult it becomes to make accurate predictions. It is relatively easy to design a model that does not have a general application. For example, if we were to study a specific person's eating habits it should be possible to design a model that would predict what he would have for breakfast fairly

accurately. It would be far more difficult, however, to design a model that would be able to predict with the same degree of accuracy the choice of any kind of breakfast food by any consumer in the economy.

Models (and theories) can be expressed by means of mathematical symbols and equations. They can also be explained in words (orally or in writing). Graphs or numerical tables are also sometimes used to explain models. In this course we mainly use graphs and verbal explanations to describe the behaviour of consumers and firms and their interaction in the various markets. The models used are generally those that have repeatedly been proved to be correct. In a course on microeconomics we are not so much concerned with testing theories and models as with their presentation, usefulness and applications.

▶ OTHER IMPORTANT CONCEPTS

▶ *Ceteris paribus*

Economists, like other scientists, use the *ceteris paribus* assumption when designing models. This means that economists assume that all variables other than the one they are specifically dealing with will remain unchanged. *Ceteris paribus* is a Latin expression which means 'all other things being equal'. This technique makes it easier to design economic theories and models because it isolates the relationship that is being studied. Suppose an economist wants to determine the relationship between the price of product A and the quantity of product A that is sold. It makes the investigation easier if the assumption is made that only the price of product A has changed, while all the other factors that could influence the sales of A (eg the price of other goods, consumer incomes and tastes) have remained constant. The economist is then able to concentrate on the relationship between price and sales, without other variables playing a part. In the short term the *ceteris paribus* assumption is a reasonable one. However, the longer the period in question, the more difficult it is to leave other factors out of account. To enable economists to make fairly accurate predictions, they have to know what factors have been taken as constant, why this has been done, and over what period of time the *ceteris paribus* assumption will be applied.

▶ Equilibrium

The concept of equilibrium plays an important part in economic theory and is one you will encounter frequently in any book on microeconomics. Equilibrium refers to a situation which, once it has been reached, tends to persist. It therefore refers to a situation in which there is no reason for any of the participants to alter his or her behaviour. Equilibrium can also be described as a situation in which all opposing forces are in balance. This does not mean that the situation of equilibrium will *never* change, but that there is a reluctance to

change. If the amount of a product that consumers are willing to buy is exactly equal to the amount producers are offering on the market, we say that supply and demand are in equilibrium. If a consumer is in a position where he or she is obtaining maximum utility, we say the consumer is in equilibrium. When a firm is in a situation where it is maximising profit, the firm is in equilibrium.

► Prices

Prices play an extremely important role in economics. In macroeconomics absolute prices (in rands and cents) are important because of the phenomenon of inflation. In microeconomics relative prices (ie the relationship between the price in question and the price of other products) are important. Relative prices also play an important role in the market system because individuals react to changes in relative prices rather than absolute prices. When the relative price of a product rises, it is an indication for consumers and suppliers that the product in question has become relatively scarcer. Relative prices are therefore also the signals that regulate the allocation of resources. This happens in the following way: if the relative price of a product rises, the producers would probably see in the price rise the possibility of making bigger profits and in time more resources would be channelled into the production of that particular product. The 'message' of relative scarcities which is conveyed by the relative prices therefore influences the allocation of resources. This forms one of the cornerstones of the market system.

► Rational individuals

It is assumed in economic theory that all individuals will behave rationally, that is to say that they will always try to see that they are as well off as possible, given the limitations to which their actions are subject. In microeconomics this means that consumers will always try to maximise their utility, and entrepreneurs to maximise their profits. The actions of individuals are taken to be logical and reasoned in all instances. One could say that people behave consistently and 'according to the dictates of common sense'.

► Male or female?

Because of the emphasis placed on the equality of the sexes, you will often find that books such as this one contain sentences such as: 'The consumer is in equilibrium if *he or she* is in a position...' or: 'The producer could, if *he or she* wished...' The continuous use of 'he or she' can become a real irritation. While 'he or she' is used quite frequently in this book, we usually speak simply of 'he'. This is merely for practical reasons and is in no way intended to give offence to women.

► IMPORTANT CONCEPTS

- Microeconomics
- Macroeconomics
- Scarcity problem
- Unlimited wants
- Limited resources
- Economic goods and free goods
- Final goods and intermediary goods
- Task of the economic system
- Circular flow diagram
- Economic models
- *Ceteris paribus*
- Equilibrium
- Rational individuals

► QUESTIONS

- (1) Explain the difference between microeconomics and macroeconomics. (5)
- (2) Define microeconomics. (3)
- (3) Explain the task that the economic system in a country performs with regard to the following questions: How, what and for whom must goods be produced? (6)
- (4) Draw the circular flow diagram and use it to explain how the economic process works. (10)
- (5) Explain in your own words what is meant by an 'economic' model. (8)

► The assumptions of perfect competition

In this chapter we generally assume that a market consists of a large number of buyers and sellers and that none of them has the ability to significantly influence the price. Stated more formally, we assume that markets are perfectly competitive, which means that no individual buyer or seller can influence the price (it is only the interaction between demand and supply that determines the market price), products are homogeneous (identical), and all producers and consumers are perfectly mobile and buyers and sellers have perfect knowledge about market conditions. In later chapters these assumptions of perfect competition will be relaxed.