basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

ECONOMIC CONCEPTS, PRINCIPLES AND MARKET DYNAMICS

GRADES 10 – 12

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ACKNOWLEDGEMENTS

Background

In Economics, the concepts, principles and graphs constitute the foundation for studying the subject and they are used intensively at the introductory level with a view to facilitate understanding, describing, analysing and interpreting economic information. Evidence indicates that the knowledge and skills required to deal with these topics are lacking among the majority of our learners.

Learners need to understand that they have to apply economic concepts and principles in their analysis of economic issues and problems. Regarding description, they need to give visual expression to various types of data while exercising their analytical role. Economic theory identifies important economic variables and attempts to explain the relationships between them. Learners need to understand and explore those interrelationships, as well as the connections amongst the important elements of a situation. Economists frequently rely on graphs to illustrate these relationships.

Economics as a subject contains numerous graphs, so it is important to be clear about how they are constructed and what they illustrate. Why do we use so many graphs in introductory economics? Simply because they provide a good way to make complicated points easy to understand. If you take the time to learn and fully understand the graphs, and learn to draw them, you'll be able to figure out the answer to almost any question at the introductory microeconomics level

The purpose of this guide

This guide provides a brief overview of the basic economic concepts, principles, the two-dimensional diagrams of the kind used in introductory economics (these diagrams are called "graphs") and how graphs can be used to resolve economic problems and issues. The purpose of the guide is to familiarise Grade 10 to 12 teachers and learners with basic economic concepts, principles and graphs, as well as to inform them how economic information can be described and analysed by means of graphs. The guide will assist teachers to manage the basics of economics, i.e. macro and microeconomics, so that they, in turn, can assist learners.

This document is not intended to serve as a complete manual, but rather as a guide to assist teachers and learners in coping with, and managing curriculum knowledge. The guide will form part of many other strategies and resources that will assist teachers and learners in understanding the subject of Economics.

How to use this guide

The guide covers economic concepts and principles; the construction and interpretation of graphs, shapes, slopes and shifts; and it provides a basic understanding of how economic information can be described and analysed by means of graphs. These include opportunity costs, the production possibility frontier (PPF), and market dynamics.

The guide is divided into six units. Units 1 and 2 deal with economic concepts and principles, Unit 3 deals with the construction and interpretation of graphs, and Units 4 to 6 provide detailed information on opportunity costs, production possibilities, supply and demand (market adjustment), elasticities and market structures or models.

Introduction

Economics may appear to be the study of complicated tables and charts, statistics and numbers but, more specifically, it is the study of what constitutes rational human behaviour in the endeavour to fulfil needs and wants.

As an individual, for example, you face the problem of having only limited resources with which to fulfil your wants and needs and, as a result, you must make some choices where your money is concerned. You'll probably spend part of your money on rent, electricity and food. Then you might use the rest to go to the movies and/or buy a new pair of jeans. Economists are interested in the choices you make, and inquire as to why, for instance, you might choose to spend your money on a new DVD player instead of replacing your old TV set. They would want to know whether you would still buy a carton of cigarettes if prices were to increase by R20 a pack. The underlying essence of economics is trying to understand how both individuals and nations behave in response to specific material constraints.

We can therefore say that Economics, which is often referred to as the "dismal science", is a study of certain aspects of society. Economists spawned the discipline of economics by trying to understand why some nations prospered while others lagged behind in poverty, and they also explored how a nation's allocation of resources affects its wealth.

In order to study these things, Economics makes the assumption that human beings will aim to fulfil their self-interests. It also assumes that individuals are rational in their efforts to fulfil their unlimited wants and needs. Economics, therefore, is a social science, which examines people behaving according to their self-interests.

For learners to start the discussion of economics, they first need to understand (1) the concept of scarcity and (2) the two branches of study within economics, namely microeconomics and macroeconomics.

Scarcity

Scarcity refers to the tension between our limited resources and our unlimited wants and needs. For an individual, resources include time, money and skills. For a country, limited resources include natural resources, capital, its labour force and technology.

Because all of our resources are limited in comparison to all of our wants and needs, individuals and nations have to make decisions as to what goods and services they can buy and which ones they must forgo.

For example, *if you choose to buy one DVD as opposed to two video tapes, you must give up owning a second movie of inferior technology in exchange for the higher quality of the one DVD. Of course, each individual and nation will have different values, but by having different levels of (scarce) resources, people and nations respectively form some of these values as a result of the particular scarcities with which they are faced.*

So, because of scarcity, people and nations must make decisions over how to allocate their resources. Economics, in turn, aims to study why we make these decisions and how we allocate our resources most efficiently.

Macroeconomics and microeconomics

Macroeconomics and microeconomics are the two vantage points from which the economy is observed.

Macroeconomics looks at the total output of a nation and the way in which the nation allocates its limited resources of land, labour and capital, in an attempt to maximise production levels and promote trade and growth for future generations. After observing society as a whole, Adam Smith, a theorist, noted that there was an "invisible hand" turning the wheels of the economy: a market force that keeps the economy functioning.

Microeconomics looks into similar issues, but at the level of individual people and firms within the economy. It tends to be more scientific in its approach and studies the parts that constitute the whole economy. In analysing some aspects of human behaviour, microeconomics shows us how individuals and firms respond to changes in price and why they demand what they do at particular price levels.

Micro and macroeconomics are intertwined and, as economists gain an understanding of specific phenomena, they can assist nations and individuals in making more informed decisions when it comes to allocating resources. The systems by which nations allocate their resources can be placed on a spectrum where the command economy is on the one end and the market economy is on the other.

The market economy advocates forces within a competitive market, which constitute the "invisible hand", to determine how resources should be allocated. The command economic system relies on government to decide how

the country's resources would best be allocated. In both systems, however, scarcity and unlimited wants and needs force governments and individuals to decide how to best manage resources and allocate them according to the most efficient way possible. Nevertheless, there are always limits to what the economy and government can do.

For learners to understand the two branches of Economics, they first need to understand the economic concepts and principles, as well as how economic information can be described and analysed by means of graphs – i.e. they should understand the approach of emphasising the process of applying economic concepts and principles in the analysis of economic issues and problems.

Unit 1: Economic Concepts

Balance of payments: The balance of payments is a systematic statistical record of all economic transactions between residents in the reporting country (e.g. South Africa) and the rest of the world during a particular period (quarter or year). It consists of the following five sub-accounts:

- Current account
- Capital transfer account
- Financial account
- Unrecorded transactions
- Official reserves account

Balance of payments constraint: In the long run, a country must run a trade (current account) balance, otherwise it will not be able to finance the imports that increase with a growth in income (depending on the marginal propensity to import or the income elasticity of a demand for imports).

With reference to South Africa, the balance of payments constraint refers to the inability of the South African economy to grow fast, without soon reaching a point where there is a deficit on the balance of payments and a depreciation of the rand.

Balance of payments deficit:: A balance of payments deficit implies that the inflow of foreign currency is smaller than the outflow of foreign currency, and thus a decrease in official reserves takes place.
Balance of payments deficit = decrease in official reserves.

Balance of payments equilibrium: A balance of payments equilibrium implies that the inflow of foreign currency is equal to the outflow of foreign currency. In other words, the change in official reserves is zero.

Balance of payments stability: Balance of payments stability exists when there is some balance between exports and imports. Balance of payments stability is one of the macroeconomic objectives. In technical terms it means that the balance of payments and the exchange rate should be fairly stable.

Balance of payments surplus: A balance of payments surplus implies that the inflow of foreign currency is greater than the outflow of foreign currency and thus an increase in official reserves takes place.
Balance of payments surplus = increase in official reserves

Balance sheet: A balance sheet is an accounting statement, listing the values of all assets, as well as the values of all liabilities.

Assets	Liabilities

Bank rate: The bank rate used to be the accommodation rate at which banks acquired overnight loans from the South African Reserve Bank (SARB), using treasury bills and other specified short-term instruments as collateral.

Barriers to entry: There are a number of potential barriers that may give rise to a monopoly or a near-monopoly. These place new entrants at a cost disadvantage relative to established firms within an industry. Sources of entry barriers are:

- Product differentiation barriers
- Absolute cost advantages of firms
- Economics of scale
- Large initial capital requirements
- Patents and licensing
- Limited size of the market

Barter economy: In a barter economy, there is no money to act as a medium of exchange. Every transaction involves an exchange of goods and services on both sides of the transaction. For a transaction to take place, a double coincidence of wants, meaning that each trader has what the other trader wants and wants what the other has, is required. For instance, a mechanic wanting a video player needs to find someone who wishes to exchange a video player for the services of a mechanic.

Base year: A base year is used to overcome the problem of price changes by expressing the prices of goods and services in terms of prices in a particular year.

Basic prices: The three methods of calculating the gross domestic product (GDP) will only yield the same result if the same set of prices is used in all the calculations. The difference between market prices, basic prices and factor cost (or factor income) is due to various taxes and subsidies on goods and services.

> GDP at market prices - taxes on products + subsidies = GDP at basic prices
> GDP at basic prices - other taxes on production + other subsidies on production = GDP at factor cost (or factor income)

Basic prices are used when the GDP is calculated according to the production method.

Benefit principle of taxation: According to the benefit principle of taxation, those people who derive the benefits from a service should pay the taxes to finance it. It is not always easy to implement, because the benefit of many of the goods and services produced and rendered by government cannot be easily measured. In cases where the benefits are identifiable and measurable, a user charge is usually instituted. Examples include toll road fees, national park fees, the provision of electricity, university fees, etc.

Black markets: These are created when buyers and sellers meet to negotiate the exchange of prohibited or illegal goods. More generally, it could be any unofficial market in which prices are inordinately high. Black markets are found in any situation where the market forces of supply and demand cannot (or are not allowed to) eliminate excess demand.

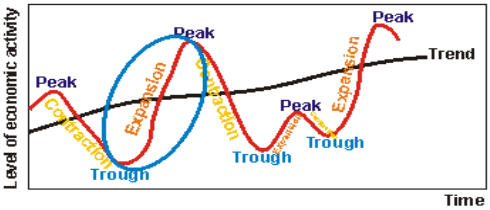
Bond: The general term for a long-term loan in which a borrower agrees to pay a lender an interest rate (usually fixed) for the length of the loan and then repay the principal at the date of maturity.

The word "bond" means binding agreement. Formally a bond can be defined as a promise by a borrower to pay the lender a certain amount (the principal) at a specified date (the maturity date of the bond) and, in the meantime, to pay a given amount of interest per year.

Bonds are issued by companies and the government as a way of raising finance. Most bonds are negotiable (can be traded). The price at which a bond sells, depends on the original amount borrowed, the interest rate that the holder of bond pays, and comparable interest rates and returns on other investments in the economy.

Bond (capital) market: The bond market is the market for lending and borrowing long-term financial instruments (with a term of outstanding maturity of more than one year).

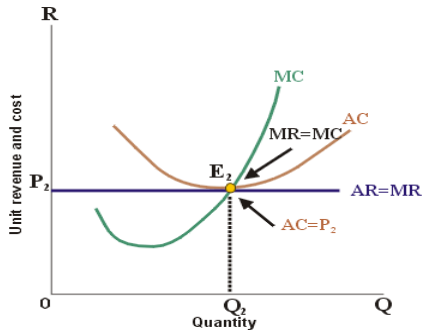
Boom (upswing): The expansionary phase of the business cycle.



Bracket creep (fiscal drag): Bracket creep results from the combination of inflation and a progressive income tax system. When people's money income rises due to inflation, they are placed in higher income tax brackets where the marginal rate of taxation is higher, even when their real incomes remain unchanged (or perhaps even fall). If tax allowances are not increased in line with inflation, then income earners are worse off. Their pay rise is cancelled out by inflation but their average tax rate is higher.

If the tax brackets and rates are left unchanged during inflation, there is a resultant redistribution of income from taxpayers to the government. This increased government revenue from taxation through inflation is referred to as the fiscal dividend.

Break-even point: The break-even point for a perfectly competitive firm occurs where the firm does not earn an economic profit – that is where AR = AC. It does, however, earn a normal profit, since all its costs, including the opportunity costs of self-owned, self-employed resources, are fully covered.



Budget (government): The budget is the annual announcement of government's fiscal policy changes. In South Africa, the budget is usually presented to Parliament by the Minister of Finance during February. In the budget the Minister outlines the tax changes for the financial year (1 April of the current calendar year to 31 March of the following calendar year), as well as the planned spending for the financial year.

The budget is essentially a reflection of political decisions about how much to spend, what to spend it on and how to finance the spending.

Budget deficit: Government expenditure can be financed through taxation, user charges and other forms of non-tax revenue, bank credit and longer-term borrowing (from domestic and international capital markets). The difference between total government expenditure and total government revenue is referred to as the budget deficit (or deficit before borrowing), and it has to be financed through borrowing. Government borrowing, in turn, adds to the public debt.

The budget deficit is the excess of government's total expenditure, comprising purchases of goods and services (G) and transfer payments (R) over its revenue, comprising taxes (T).

Budget deficit = (G + R) - T

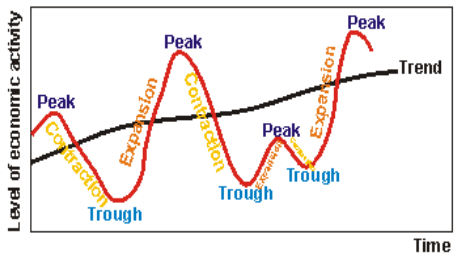
Budget surplus: The budget surplus is the excess of government's revenue, consisting of taxes (T), over its total expenditure, consisting of purchases of goods and services (G) and transfer payments (R).

BS = T - (G + R)

Burden of a tax: The burden of a tax to an individual is the amount he would have to be given to make him just as well off with the tax, as he was without it.

Business cycle: The business cycle is more or less the regular pattern of expansion (recovery) and a contraction (recession) in economic activity around the path of trend growth.
One complete cycle, which usually lasts a number of years, consists of four elements:

- A trough
- An upswing or expansion (often called a boom)
- A peak
- A downswing or contraction (often called a recession)



Business fixed investment: A business fixed investment is a component of investment spending and indicates the spending by businesses on machinery, equipment and structures such as factories.

Business saving: Saving by firms; profits not paid out to owners/shareholders.

Capital: Capital comprises all manufactured resources, such as machines, tools and buildings, which are used in the production of other goods and the delivery of other services.

Capital deepening: Capital deepening occurs when the amount of capital per worker is increased – that is when the growth in the stock of capital is greater than the growth in the number of workers.

Capital gains tax: Capital gains tax is a tax on the gains resulting from the sale of assets, such as shares and fixed property. Capital gains tax was introduced in South Africa in 2001. This is not a separate tax as such, but rather an extension of the definition of taxable income. Prior to 1 October 2001 (when this tax was introduced), tax on capital gains was a grey area in South Africa. Capital gains (i.e. profits earned by selling assets, such as shares, bonds and real estate) were generally not taxed, except in cases where the assets were sold in the normal course of business. Any profit derived from such a sale (e.g. by a speculator) was regarded as income and taxed as such. The main problem, however, was the lack of certainty about the taxability of capital gains and the courts often had to rule on the issue.

Capital goods: Capital goods are goods that are used in the production of other goods. Examples include all types of machinery, plants and equipment used in the manufacturing and construction of school buildings, university residences, roads, dams and bridges. Capital goods as such do not yield direct consumer satisfaction, but they permit higher production and satisfaction in future.

Capitalism: A capitalist market system is characterised by the private ownership of the factors of production. Decision-making is decentralised and rests with the owners of the factors of production. Their decisions are coordinated by the market mechanism.

Capital widening: Capital widening occurs when the capital stock is increased to accommodate an increasing labour force. In this case the average amount of capital per worker remains unchanged.

Capital-intensive production: Various techniques are available to produce a particular good. When the production process is dominated by machines (capital), it is referred to as a capital intensive production method.

Cardinal utility: Cardinal utility involves the idea that utility can be measured in some way or another. In other words, the consumer is able to assign values to the amount of satisfaction (utility) that he or she obtains from the consumption of each successive unit of a consumer good or service.

Cartel: A group of firms formally agreeing to control the price and output of a product. An example of a cartel is the Organisation of Petroleum Exporting Countries (OPEC).

Cash

Cash is the coins and notes of the money supply. Cash is often divided into "cash in circulation" and "vault cash". "Cash in circulation" is what the public uses for transactions, while "vault cash" is the cash in the hand of the banks. Cash in circulation is part of the money supply, while "vault cash" is part of the cash reserves of banks. Coins and notes constitute only a small proportion of the money supply. Demand deposits (D) constitute the main share of the quantity of money.	

Cash reserve requirements: These are the amount of cash reserves that banks must hold by regulation. To maintain confidence in the banking system, the monetary authorities lay down legal requirements, stipulating the amount of cash reserves to be held against the total liabilities (demand deposits) of a bank.

In South Africa, banks are obliged to hold 2½% of their total liabilities to the public in the form of cash reserves in non-interest bearing accounts with the Reserve Bank.

Cash reserve requirements influence the ability of banks to create credit and is one of the direct policy instruments that can be used to influence the money supply in the economy.

Cash reserves (of banks): Cash reserves of banks constitute the amount of cash that banks hold in order to ensure that they have cash available to provide for cash withdrawals from their customers and claims from other banks, as

well as to satisfy the legal requirements as stipulated by the monetary authorities. Actual reserves minus required reserves equals excess reserves. It is due to excess reserves that banks are able to create credit.

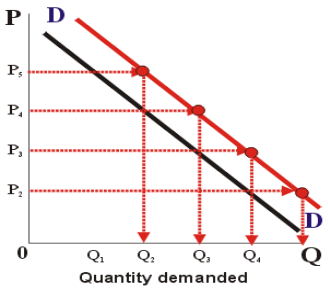
Central bank independence: Although decisions on monetary policy are supposed to rest primarily with central banks, governments often interfered with such decisions. Interference of this nature is usually frowned upon, particularly if the motives behind it are purely political (in a party-political sense). The prevailing view is that the central bank should be as independent as possible, particularly in the implementation of monetary policy.

Central banks can never be completely independent in the sense of doing whatever they wish without being accountable to anyone. Central banks are national institutions created by governments and the chief executives (usually called "governors") are appointed by government. In the final analysis, therefore, any central bank is always accountable to the government of the day and the governor can be replaced if he or she does not (or is perceived not to) exercise his or her powers in the national interest. At the same time, however, central bankers should be accorded the freedom to use the instruments at their disposal without any undue political interference.

Central planning: A centrally planned economic system, such as command socialism, is an economic system characterised by public ownership of the factors of production. Decision-making is centralised and is coordinated by a central plan, which contains binding directives to the system's participants.

Ceteris paribus: *Ceteris Paribus* is a Latin phrase, which may be loosely translated as "holding everything else constant". It is frequently used in economics to isolate the effect of one variable on something else. For instance, when dealing with the law of demand, the effect of a price change on the quantity demanded is isolated by assuming that all other variables, such as income, taste, number of people, etc. remain unchanged. It is also common practice in economics not to always state the *ceteris paribus* condition explicitly, although it is always implied, unless stated otherwise. The abbreviation used for *ceteris paribus* is “cet.par”.

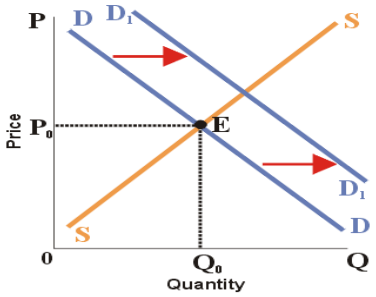
Change in demand (shift of the demand curve): A change in any of the determinants of demand, other than the price of the product, will shift the demand curve.



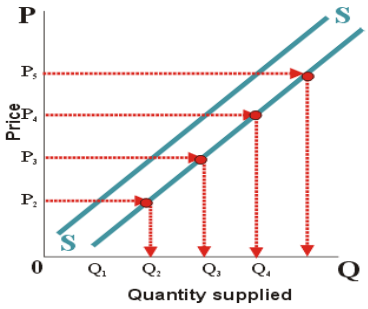
Some of the factors that cause a shift of the demand curve are:

- A change in the price of related goods
- A change in the income of consumers
- A change in consumers' tastes and preferences
- A change in population
- A change in expected future prices

Change in demand and equilibrium: A change in any of the non-price determinants of demand will cause a shift of the demand curve. As the demand curve shifts, a movement to a new position of equilibrium takes place.



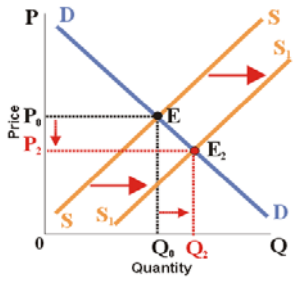
Change in supply (shift of the supply curve): A change in any of the determinants of quantity supplied, other than the price of the product, will shift the supply curve.



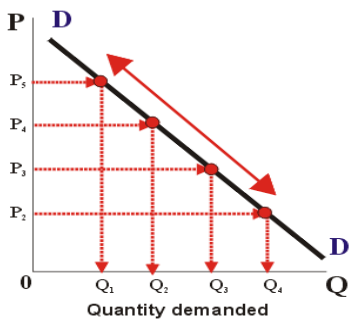
Some of the factors that cause a shift of the supply curve are:

- Prices of alternative products
- Prices of joint products
- Prices of inputs
- Expected future prices
- Technology
- Number of firms (sellers)

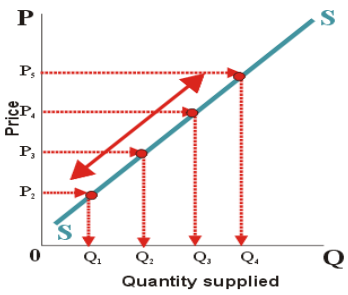
Change in supply and equilibrium: A change in any of the non-price determinants of supply will cause a shift of the supply curve. As the supply curve shifts, a movement to a new equilibrium position takes place.



Change in the quantity demanded (movement along the demand curve): A given demand curve indicates at each price the quantity demanded (i.e. how much of a product will be demanded), given that all other things remain the same. A change in the price therefore involves a movement from one point to another on the demand curve.

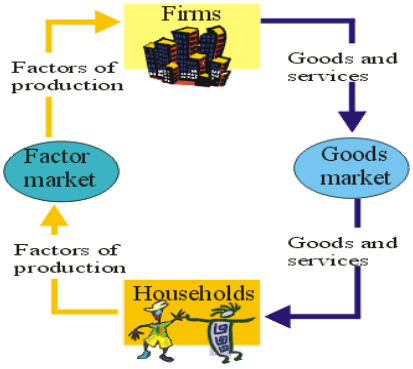


Change in the quantity supplied (movement along the supply curve): A given supply curve indicates at each price the quantity supplied (i.e. how much of a product will be supplied), given that all other things remain the same. A change in the price therefore involves a movement from one point to another on the supply curve.

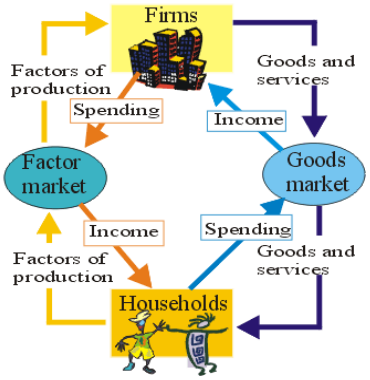


Choice: Due to the scarcity of resources that arises as a result of our unlimited wants, choices – which are not always easy or popular – need to be made about what should be produced, how it should be produced and for whom it should be produced. With a scarcity of resources every choice involves a cost. Doing one thing means that the resources for something else are not available.

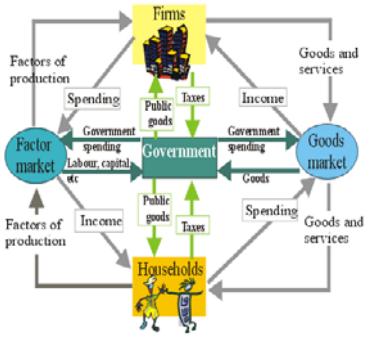
Circular flow of goods and services: The circular flow of goods and services is used to explain the interaction between households and firms. It is the most basic description of the production process in the economy.



Circular flow of income and spending: The circular flow of income and spending illustrates the monetary flow between households and firms. Its direction is the opposite of the flow of goods and services.



Circular flow with government: Using the circular flow of income and spending between firms and households, the role of government can also be illustrated.



Classical view of the business cycle: Modern proponents of the classical view still believe that the private economy is inherently stable and that most, if not all, business cycles are the result of inappropriate government policy. Milton Friedman and Anna Schwartz, for example, argued that changes in the money stock were the dominant causes of business cycles in the USA and that these cycles were predominantly exogenous in the sense that the fault lay with the monetary authorities who did not understand the workings of monetary policy. Instead of letting the money stock grow at a steady rate (approximately equal to the long-run real economic growth rate), they applied stop-go policies that caused the observed business cycles.

Clearing bank: The South African Reserve Bank acts as a clearing bank in that the reserves that banks are required to hold with the Reserve Bank are used to clear the claims and obligations of the banks.

Collusion: Collusion occurs when sellers or buyers enter into an agreement, arrangement or understanding to limit competition.

Commercialisation: Commercialisation or corporatisation refers to the transformation of state-owned enterprises into commercial entities, subject to commercial legal requirements and governance structures, while retaining state ownership. In other words, the enterprise remains in the public sector but is run like a private company and is also liable for tax.

Common property resources: Common property resources are those that are non-excludable but rivalrous in consumption. Common property resources belong to no one and are available free of charge to anyone who wants to use them. However, one person's use of such common property reduces its availability to other persons (rivalrous in consumption). Examples of common property resources include the fish in the ocean, wildlife, rivers and common land.

Company tax: This is also a tax on income or a direct tax. The tax base in this case is company profits. Company tax is a proportional tax, since a uniform rate is applied to all profits. The main problem in this case is to calculate the tax base or taxable income (i.e. company profits). Tax on companies is the second main source of tax revenue for government.

Comparative (relative) advantage: The law of comparative advantage states that, under certain conditions, two countries can gain from trade, even if one of them is more efficient than the other in producing everything. As long as the international terms of trade fall between the countries' domestic terms of trade, a basis for trade exists. Some of the sources of comparative advantage are technology, resource endowments and a difference in tastes or demand.

Competition: Competition is an important feature of market capitalism. It occurs on each side of the market – that is, amongst suppliers (sellers) or amongst buyers (consumers).

Competition Commission: The Competition Commission is a statutory body, constituted in terms of the Competition Act, No. 89 of 1998, by the Government of South Africa, empowered to investigate, control and evaluate restrictive business practices, as well as the abuse of dominant positions and mergers in order to achieve equity and efficiency in the South African economy.

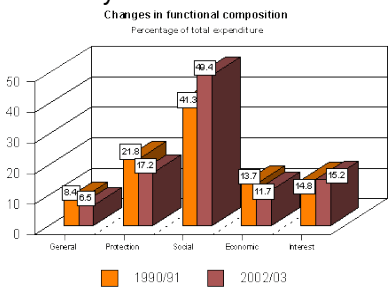
Complements: Complements are goods that tend to be used jointly. Examples include fish and chips, "pap en vleis", motor cars and petrol, coffee and milk, tea and sugar.

An increase in the price of a complementary good (fish) decreases the demand for the other product (chips) and the demand curve for the product (chips) shifts to the left. It is now more expensive to use the combined products.

An indication of the goods being complementary is the cross-price elasticity of demand. If the cross-price elasticity of demand is negative, then the two goods are complements. If the value is greater than one, they are close substitutes.

Composition of government spending: The functional composition of government spending comprises general services, protection services, social services, economic services and interest on public debt. Changes in the functional composition of government spending reflect changing economic and social conditions and changes in the priorities of government.

The following diagram illustrates the changes in the functional composition of government spending in South Africa for selected years.



Constant prices: Real GDP or GDP at constant prices is a measure of GDP in which the quantities produced are valued at the prices in a base year, rather than at current prices. Real GDP therefore measures the actual physical volume of production that has taken place.

Consumer equilibrium: The consumer is said to be in equilibrium when he or she has allocated his or her income between different goods and services in such a way that the highest attainable level of total utility is reached.

In terms of weighted marginal utilities, the consumer is in equilibrium when he or she has allocated his or her income between different goods and services in such a way that the weighted marginal utilities of the different goods and services are equal. In other words, the last rand spent on each product yields the same amount of extra (marginal) utility. This is also known as Gossen's Second Law.

Consumer goods: Consumer goods are goods that are used or consumed by individuals or households (i.e. consumers) to satisfy wants. Examples include food, wine, clothing, shoes, furniture, household appliances and motor cars.

Consumer price index: The consumer price index is the most commonly used indicator of changes in the general price level. It reflects the cost of a representative basket of consumer goods and services. It involves the comparison of the index of a particular month to the index of the corresponding month in the previous year and expressing it as a percentage.

Inflation rate for January 2002

$$= \frac{CPI_{January\ 2002} - CPI_{January\ 2001}}{CPI_{January\ 2001}} \times 100$$

$$= \frac{109{,}0 - 103{,}8}{103{,}8} \times 100 = 5{,}0\%$$

Consumer subsidy: A consumer subsidy is a non-recoverable cash payment to the consumer of a particular commodity that may be claimed when the particular item is or has been paid for, with a view to enhancing the real income of the consumer. An example is a housing subsidy, which is paid directly into the owner's bank account, once the required documentation has been submitted to the Department of Housing.

Consumers' tastes: People's preferences for particular goods and services.

Consumption (C): The act of using or consuming goods and services is referred to as consumption. The total spending of all households on consumer goods and services is referred to as total or aggregate consumption expenditure or simply total consumption. The symbol C is used to indicate total consumption or consumer spending in the economy. The most important determinant of consumption spending by households is their disposable income.

Consumption function: Keynes (1936: 96) formulated the basis of his consumption function as follows:

The fundamental psychological law, upon which we are entitled to depend with great confidence, both *a priori* from our knowledge of human nature and from the detailed facts of experience, is that men are disposed to increase their consumption as their income increases, but not by as much as the increase in income.

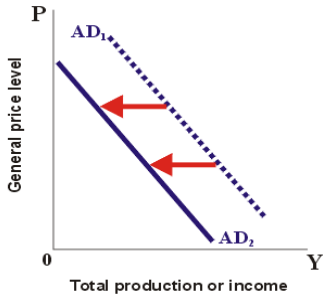
Keynes believed that the level of consumer expenditure was a stable function of income and that income was the most important factor determining consumption. This translates to the following Keynesian consumption function, known as the *Absolute Income Hypothesis.*

The function used in the simple Keynesian model is: C = C + cY

Contractionary policy: A contractionary policy is used to "cool down" economic activity by decreasing aggregate demand.

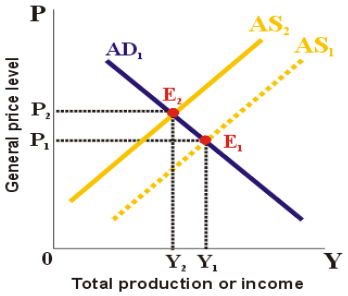
A contractionary fiscal policy means that government spending has to be reduced and/or taxes have to be increased.

A contractionary monetary policy implies a decrease in the money supply and an increase in the interest rate.
In the AD-AS model, a contractionary fiscal or monetary policy is represented by a leftward shift of the AD curve.



Corporatism: Corporatism is defined as the division of economic and political power between the three major representatives of functional interests, namely labour, business and government; each hierarchically organised. Corporatism has been a feature of diverse political systems, including consensus-oriented democracies, such as Austria, Switzerland and Japan; authoritarian Latin American and African countries; and Asian governments influenced by Confucian theories of harmony.

Cost-push inflation: Cost-push inflation is triggered by increases in the cost of production. Increases in production costs push up the price level.



Credit:: It is a term used in connection with lending. Personal loans, car loans, mortgages and bonds are all examples of credit. In monetary economics and macroeconomics the term is associated with the ability of banks to create credit and thereby influence the supply of money. Bank credit refers to loans and overdrafts to a bank's customers.

A large percentage of consumer spending and virtually all transactions in manufacturing, services and commerce, are conducted on credit.

The accessibility, availability and the price of credit are important factors that influence the level of aggregate consumption spending in the economy.

Credit card: Credit cards are not a medium of exchange. They are simply a convenient means of making purchases (by obtaining a short-term loan from the bank or other financial institution that has issued the card).

Credit ceiling: Imposing a limit on the volume of bank credit by the monetary authorities.

Credit multiplier: Credit multiplier refers to the ability of banks to create credit. Credit is created when the bank lends money to a person or institution in the form of overdraft facilities.

A demand deposit is created when a person deposits a sum of money with a bank, which then creates a demand deposit in favour of that person. Credit is created when the bank lends money to a person or institution in the form of overdraft facilities. Although banks can create credit, there are definite limits to the amount that can be created. Demand deposits may be withdrawn and each bank must therefore ensure that it always has sufficient cash reserves available to provide for cash withdrawals.

The formula for the simple credit multiplier is 1/b, where b constitutes the reserve requirements. A reserve requirement of 10 implies a credit multiplier of 10. In other words, for every R1 increase in deposits, the bank will be able to create R10 worth of credit.

Criteria for a good tax: It is a set of criteria, developed by Adam Smith, which could be used to judge whether or not a tax was considered to be a "good" tax. The criteria were as follows:

- The cost of collection must be low relative to the yield.
- The timing and amount to be paid must be certain to the payer.
- The means and timing of payment must be convenient to the payer.
- Taxes should be levied according to ability to pay.

Modern criteria for a good tax are neutrality, equity and administrative simplicity.

Cross elasticity of demand: The cross elasticity of demand measures the responsiveness of the quantity demanded of a particular good to changes in the price of a related good. It is measured as the percentage change in demand for one good in response to a percentage change in price of the other good.

$$e_c = \frac{\text{\% change in the quantity demanded of product A}}{\text{\% change in the price of product B}}$$

For example if, with a 10% increase in the price of CD players, the quantity of new CDs demanded decreased by 20%, the cross elasticity of demand would be -20%/10% = -2. In this example, the two goods, namely CD players and CDs are complements – that is, one is used with the other. In this case, the cross elasticity of demand is negative. If the two goods are substitutes, the cross elasticity of demand is positive. In other words, if the price of one goes up the quantity demanded of the other will increase.

Cross rate of exchange: The importance of the dollar as the major international currency unit means that the exchange rates of most other currency units are usually quoted against the dollar. In South Africa, if we know the R/$ exchange rate and the dollar exchange rate with another foreign currency, e.g. the Japanese yen, it is possible to calculate the exchange rate between the yen and the rand. Because this calculation is done using dollar rates of exchange, the resultant yen per rand exchange rate is referred to as a cross rate of exchange.

Currency: Currency is the tangible and circulating portion of the money supply, namely notes and coins. It excludes demand deposits, as they do not circulate in tangible form.

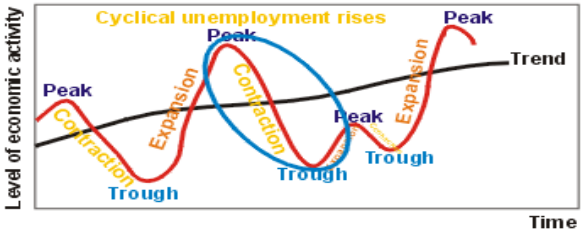
Current account: Usually taken to mean the current account of the balance of payments. It is the account where all the sales of goods and services to the rest of the world (i.e. exports), all the purchases of goods and services from the rest of the world (i.e. imports), as well as all the primary income receipts and payments are recorded.

Current account deficit: A current account deficit exists when a country spends more on imports (goods and services and income payments) than it earns on exports (goods and services and income receipts). This would be reflected by a negative balance on the current account.

Current account surplus: A current account surplus exists when a country earns more on exports (goods and services and income receipts) than it spends on imports (goods and services and income payments). This would be reflected by a positive balance on the current account.

Current prices: When something, for instance the GDP, is measured for a particular period, the prices ruling during that period have to be used. This is referred to as measurement at current prices or in nominal terms.

Cyclical unemployment: Cyclical (demand-deficiency) unemployment occurs when a slump or recession in the economy (as a result of a temporary lack of demand) gives rise to unemployment.



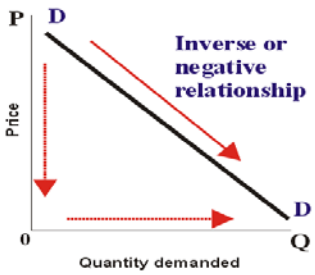
Therefore, cyclical unemployment is, by definition, the result of a deficiency in aggregate demand, which occurs during the contractionary (recessionary, downswing) phase of the business cycle.

Once the next cyclical expansion gets under way, this component of the overall unemployment rate should therefore decrease. Keynesian economists would therefore tend to prescribe expansionary monetary and fiscal policies to combat cyclical unemployment. The extent to which such policies would be desirable or feasible will, of course, depend on their possible impact on inflation and the balance of payments, along with the priority accorded to price stability and balance of payments stability. For example, if the economy is experiencing a serious balance of payments constraint, the authorities will be loath to boost domestic demand, since any increase in demand will result in a rise in imports.

Demand: Demand is the outcome of decisions concerning which wants to satisfy, given the available means. If you demand something (in the economic sense), it means that you intend to buy it and that you have the means (i.e. the purchasing power) to do so. In other words, when we talk about demand, we are referring to the quantities of a good or service that potential buyers are willing and able to buy.

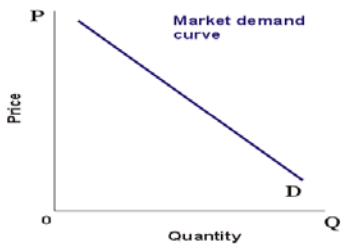
Demand differs from wants, desires or needs. There is only a demand for a good or service if those who want to purchase it have the necessary means to do so. In other words, demand has to be backed by purchasing power.

Demand curve: A demand curve is a graphical depiction of a demand schedule. It indicates how the quantity demanded of some product during a specified period of time will change as the price of that product changes, keeping all other determinants of quantity demanded constant.



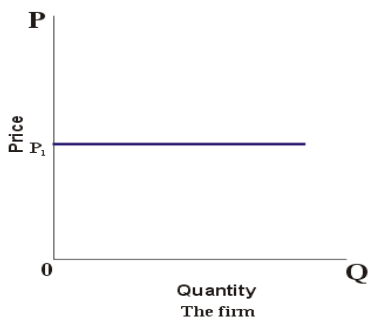
Demand curve: monopoly

Since the monopoly is the only supplier of the product of the industry, the demand curve for the product of a monopolistic firm is the market demand curve for the product of the industry.



Demand curve: perfect competition

A perfectly competitive firm therefore faces a horizontal (or perfect elastic) demand curve. This means it can increase its sales without affecting the current price of the product and it also implies that it cannot charge a price higher than the current market price.



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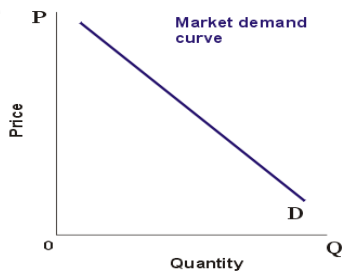


Demand deposits

A bank deposit that can be withdrawn without notice ("on demand"). A demand deposit is created when a person deposits a sum of money with a bank, which then creates a demand deposit in favour of that person. Examples of demand deposits are current accounts, transactions deposits, debit cards, etc.
Demand deposits (D) constitute the main share of the quantity of money as measured by M1.

Demand-determined money supply: According to this view, the money supply is determined by the interaction of the demand for money and the interest rate. The interest rate, in turn, is determined mainly by the monetary authorities.

Demand equation: The demand equation is a shorthand way of expressing the relationship between the quantity of a good demanded and its price, *ceteris paribus.* It is written as:

$Q_d = f(P_x, P_g, Y, T, N, ...)$

Where
Q_d = quantity demanded
f = depends on (or is a function of)
P_x = price of the product
P_g = price of related goods
Y = income of prospective buyers
T = taste of prospective buyers
N = number of prospective buyers
... = other factors

Demand for active balances: In order to finance their spending, people need money. Active balances refer to this need for money and are based on two motives, namely the transaction and precautionary motives which, in turn, relates to the function of money as a medium of exchange.

Individuals, households and firms hold money balances in order to do transactions. The need for transaction balances arises from the lag between receipts and payments of money. For example, wages and salaries are paid weekly or monthly, but payments for goods and services are made each day.

According to the liquidity preference theory of Keynes, the demand for active balances is a positive function of the levels of income and output.

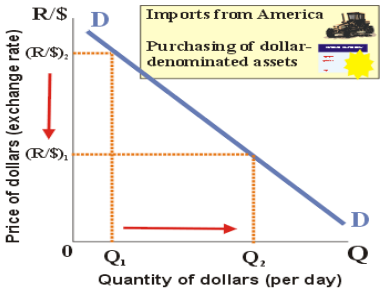
$L_{active} = f(Y)$

As income and output increase, more money is needed to do transactions.

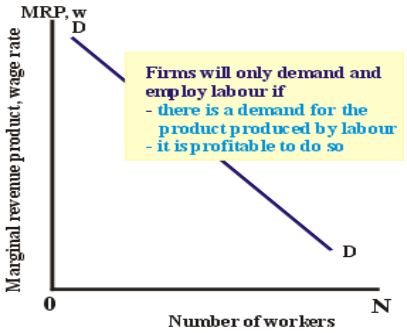
Demand for foreign exchange (e.g. dollars): The demand for dollars is a derived demand. It comes from two sources:

- South African importers who import goods and services for which they pay in US dollars; and
- South African residents who wish to purchase dollar-denominated assets (such as shares in American companies).

A negative relationship exists between the price of dollars and the quantity of dollars demanded.



Demand for labour: The demand for labour is a derived demand. It is determined by the demand for the products that are to be produced by labour and the costs of employing labour.



Demand for money (or liquidity preference): The demand for money is the amount that various participants in the economy plan to hold in the form of money balances (cash and demand deposits).

According to Keynes' liquidity preference theory, there are three motives for holding money, namely the:

- transactions motive;
- precautionary motive; and
- the speculative motive.

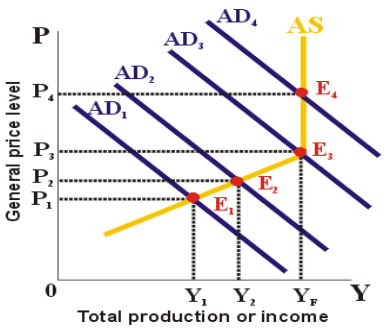
Demand for passive balances: The demand for passive balances (Lp) is based on the speculative motive for holding real money balances which, in turn, relates to the function of money as a store of value. The demand for passive balances depends on the interest rate and interest rate expectations. A negative relationship exists between the demand for passive balances and the interest rate.

Demand management: These are policies that Keynesians argued should be used to control the level of total expenditure (or aggregate demand) in the economy through fiscal and monetary policy measures. If there is a shortage of demand, government should aim to boost demand (reflationary or expansionary policies). When there is an excess of demand, government should do the opposite (deflationary or contractionary policies).

The instruments of fiscal policy are government spending and taxes.
The instruments of monetary policy are the money supply and the interest rate.

Demand-pull inflation: Demand-pull inflation occurs when the aggregate demand for goods and services increases while the aggregate supply remains unchanged. Demand-pull inflation can be caused by any (or a combination) of the various components of aggregate demand, namely:

- Increased consumption spending (C)
- Increased investment spending (I)
- Increased government spending (G)
- Increased exports (X)



Demand schedule: The demand schedule is a table that indicates the quantities of a good demanded at each possible price, *ceteris paribus*. The following is an example of a demand schedule for cold drinks.

Price (Rands)	Quantity demanded (millions of litres per month)
1	650
2	600
3	550
4	500
5	450

Demand-side industrial policies: Demand-side industrial policies are there to assist industrial growth by expanding the markets available to firms.

Dependent variable: The dependent variable is the variable that is being explained. Which variable is being selected as the dependent variable, is determined by the purpose of the theory. For instance, in the simple Keynesian model, the aim is to explain the determination of the level of output and, consequently, the dependent variable is the level of output.

Depreciation: Capital goods do not have an unlimited life. Machinery, plants, equipment, buildings, dams, bridges and roads are all subject to wear and tear. Therefore, provision has to be made for the replacement of existing capital goods. This is referred to as "provision for depreciation".

Depreciation (currency): The depreciation of a currency implies a decrease in the value of the domestic currency relative to the currencies of other countries. Using the conventional method of quoting the domestic price of foreign currency, means that a *higher* price or exchange rate reflects a *depreciation* of the local currency against a foreign currency. Therefore, an *increase* in the rand/dollar exchange rate from R7,7400 to R8,5000 implies a *depreciation* of the rand against the dollar (simply because many more rands are needed to purchase the required dollars). This term is used when exchange rates are floating.

The depreciation of a currency, for instance the rand/dollar exchange rate, can be the result of:

- an increase in the demand for dollars; or
- a decrease in the supply of dollars.

Determinants of demand: The demand for a product is determined by a number of factors, such as the price of the product, the prices of related products, the income of consumers, the taste (or preference) of the consumer and the size of the household.

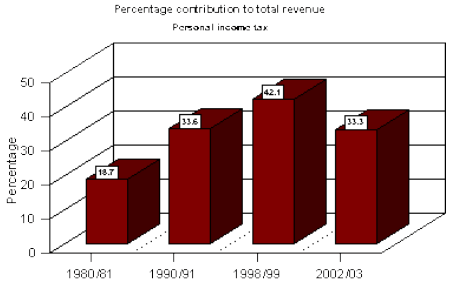
Determinants of supply: The supply of a product is determined by a number of factors, such as the price of the product, the prices of alternative outputs, the prices of the factors of production, the expected future prices of the good and the state of technology.

Direct investment: Direct investment includes all transactions where the purpose of the investor is to gain control of, or have a meaningful say in the management of the enterprise in which the investment is made.

Direct quoting of exchange rates: Exchange rates are normally expressed in terms of how much of the local monetary unit is needed to purchase one unit of the foreign exchange concerned.

For a South African, the direct method of expressing the exchange rate between the rand and the US dollar involves writing down the number of rands needed to buy one dollar.	Rand/Dollar R4,7400 = $1.00
The indirect method of quoting expresses the price in dollars of R1.	Dollar/Rand $0,2128 = R1

Direct taxes: Direct taxes are taxes on the income and wealth of households and firms. They include personal income tax, company tax and estate duty. Personal income tax is the most important form of direct taxation in South Africa.



In much of the world, direct tax rates fell during the 1980s and 1990s, partially because some economists argued that high rates of tax on income discouraged people from working, and high rates of tax on profit encouraged companies to move to countries with lower rates.

Disposable income (Yd): Disposable income (Yd) is the income that households have available after they have paid income tax.

Distortionist view of labour markets: The distortionist view of labour markets follows from neo-classical principles. Its basic premise is that free labour markets set wages at their true opportunity cost levels, and determine Pareto-efficient levels of employment, working conditions and training. From this premise it follows that any form of government intervention in labour markets will distort the optimal market outcomes. If the labour market produces unacceptable results, such as wages that are below the subsistence level C the government should address this by means of social policies (e.g. improving the education system or instituting transfer payments to relieve poverty), rather than by intervening in the labour market (e.g. by establishing minimum wages). The distortionist approach only accepts government intervention when it prevents or thwarts behaviour that hampers the competitive determination of wages.

Distribution effects of inflation: Inflation affects the distribution of income and wealth amongst the various participants in the economy. The basic rule is that inflation benefits debtors (borrowers) at the expense of creditors (lenders).

Distribution of income: The **personal distribution of income** refers to the distribution of income amongst various individuals or households in the economy.

The **functional distribution of income** refers to the distribution of income according to the remuneration of the factors of production, namely rent, wages and salaries, interest and profit.

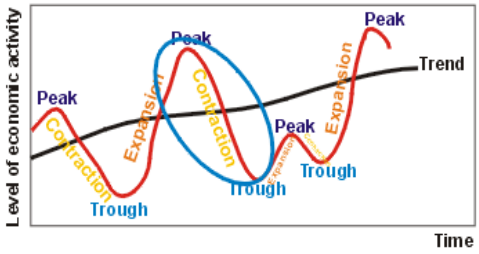
Three measures of the distribution of income are the Lorenz curve, the Gini coefficient and the quantile ratio.

Disutility: Negative marginal utility or marginal disutility occurs when the consumption of an additional unit decreases total utility.

Domestic and national income: Domestic income provides a measure of the income earned within the boundaries of a country, while national income provides a measure of the income earned by, e.g. South African citizens or permanent residents in the country.

Double coincidence of wants: For a transaction to take place in a barter economy, a double coincidence of wants, meaning that each trader has what the other trader wants and wants what the other has, is required. For instance, a mechanic wanting a video player needs to find someone who wishes to exchange a video player for the services of a mechanic.

Downswing (recession): The contractionary phase of the business cycle



Economic cost: The following distinctions between the economist's and the accountant's concept of cost must be borne in mind when calculating a firm's economic cost:

- Economic costs are opportunity costs – i.e. the value of inputs in their best alternative use.
- Economic cost is generally not equal to accounting cost.
- Economic cost may be greater or less than accounting cost.
- Sunk expenditures are not economic costs. A sunk expenditure is a factor expenditure that, once made, cannot be recovered.

Economic cost of production: The economic cost of production is equal to the opportunity costs of production, which is the value of the best alternative uses (or opportunities) sacrificed. It includes both explicit and implicit costs.

Economic cost of production
= opportunity costs
= explicit + implicit costs

Economic development: Economic development refers to the improvement of living conditions in the less developed countries (LDCs). It entails an improvement in the quality of life of the majority of the population as a result of economic growth, a reduction in inequality and the eradication of poverty.

Economic effects of inflation: Inflation has various economic effects that may result in lower economic growth and higher unemployment than would have otherwise been the case.

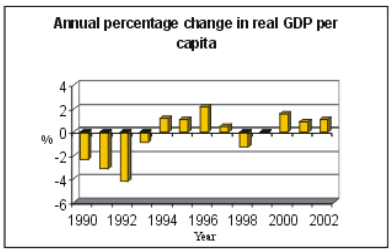
Economic goods: Economic goods are goods that are produced with scarce resources and can command a price in the market. Economic goods are also referred to as scarce goods.

Economic growth: Economic growth is traditionally defined as the annual rate of increase in total production or income in the economy. This definition has to be qualified in two important respects. Firstly, the production or income should be measured in real terms – that is the effects of inflation should be eliminated. Secondly, the figures should also be adjusted with regard to population growth. In other words, it should be expressed on a per capita basis.

The growth in total production can be measured by calculating the percentage change in the real GDP from one year to the next.

South Africa

The growth on a per capita basis is provided by the growth in the real GDP per capita.



South Africa

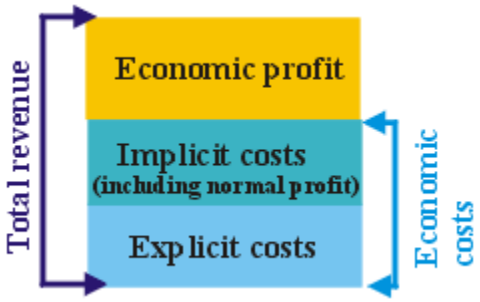
Economic policy discretion: Economic policy discretion refers to independent decision-making within or without a set of rules. The less discretion, the smaller the degree of freedom in policy decisions (or the greater the discretion, the more freedom the policy-maker has).

Economic policy rules: Economic policy rules are statutory or non-statutory practices that are implemented automatically, routinely and without significant variation.

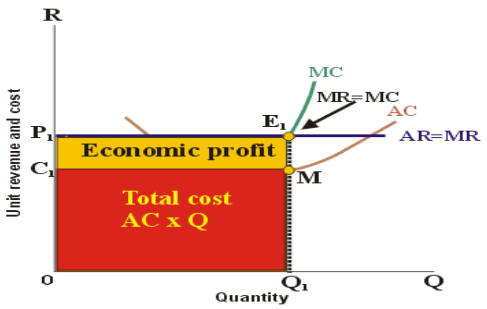
Economic policy: Economic policy can be defined as government actions, designed to influence economic behaviour in pursuit of specific goals or objectives. These goals or objectives might be largely macroeconomic, sectoral or microeconomic in nature.

Decisions about economic policy, like other economic decisions, are subject to resource constraints. Resources are scarce and therefore all goals and objectives cannot be achieved simultaneously. Policy goals may be conflicting, thus necessitating trade-offs (i.e. a degree of sacrifice of certain goals in order to achieve others). Choices inevitably have to be made and they are often hard, tough choices.

Economic profit:: Economic Profit = Total Revenue - Total Economic Cost.
Economic profit is the difference between the total revenue from the sale of the firms' product(s) and the full opportunity cost of the factors used in the production of the output. The full opportunity cost includes the total explicit and implicit cost s – it includes normal profit ,as well as the capital cost of own funds. It differs from accounting profit in that accounting profit only takes explicit costs into account. Economic profit is sometimes referred to as excess profit, abnormal profit, super-normal profit or pure profit.



Economic profit : competitive firm
Economic profit is the difference between the total revenue from the sale of the firms' product(s) and the full opportunity cost of the factors used in the production of the output (AC x Q). The full opportunity cost includes the total explicit and implicit costs; it includes normal profit, as well as the capital cost of own funds.



Economic rent: Economic rent is part of the reward accruing to resource owners over and above the payment that the resource would receive in any alternative employment. It is therefore more than the opportunity cost of the resource. Such rent is often created by government interventions – for example restrictions on foreign trade and on licenses for liquor outlets and for taxi drivers.

Economics: Economics is the study of how society decides what, how and for whom to produce. Economic problems arise because the resources that we have available for the production of goods and services are limited, while our wants for goods and services are unlimited. Part of the study of Economics involves a search for answers to these three questions that we, as individuals and as a society, face.

It is a social science, studying how individuals make choices about the use of resources in order to satisfy needs. Scarcity requires choices and Economics is the study of how we make those choices.

Use models or theories (simplified representations (abstraction) from the real world), which are used to make predictions or to better understand the world. Models are based on assumptions and a decision must be taken on the usefulness of the model.

Effective incidence: Those who ultimately bear the burden of the tax are often different from those who pay the tax, since the cost of the tax can be passed on. For instance, the imposition of a specific tax on a product may cause firms to increase the price by the amount of tax and shift some of the burden of the tax on to consumers. The effective incidence or burden of a tax cannot be established by determining who actually hands over the money to government.

Elasticity: Elasticity is a measure of the sensitivity or responsiveness between two variables that are related. This indicates that a cause and effect reaction exists between the two variables. A change in X causes a change in Y and elasticity provides a measurement of how strong this effect is. Examples of elasticity in economics are price elasticity of supply and demand, income elasticity of demand, cross elasticity and the interest elasticity of investment.

Elasticity coefficient: The elasticity coefficient for price elasticity is:

$$e_p = \frac{\text{percentage change in quantity demanded}}{\text{percentage change in the price of the product}}$$

It is simply a number and it is not measured in units, percentages or anything else.

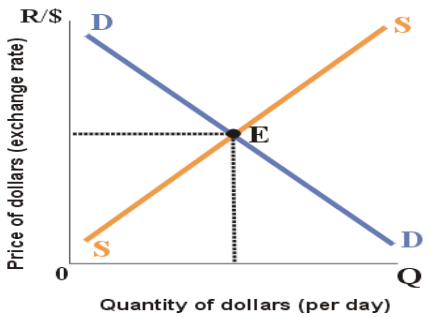
Endogenous money supply: According to this view, there is no independent (exogenous) money supply. One view is that the supply of money is determined by the interaction of the interest rate and the demand for money. It is referred to as a demand-determined money supply.

Entrepreneurship: Entrepreneurs are people who are prepared to take calculated risks and who seize opportunities as they arise. They are responsible for combining the factors of production in order to produce goods and services.

Equilibrium (macroeconomy): Equilibrium refers to a situation in which all forces of change are neutralised or balanced – i.e. a situation that will be maintained in the absence of new forces (or changes in existing forces). In the simple Keynesian model, aggregate demand is the main determinant of the levels of income and output and equilibrium is reached when aggregate demand is equal to the level of output. In the Keynesian model, forces exist to ensure equilibrium, but there are no self-correcting forces to ensure full employment equilibrium.

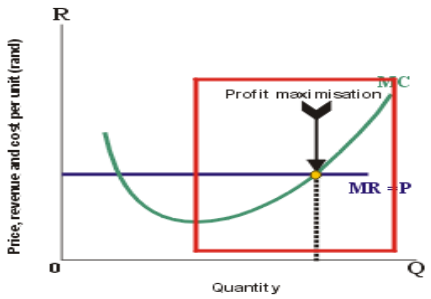
It is a situation in which the plans of the buyers and sellers coincide, so that there is neither excess quantity supplied nor demanded (also referred to as the market clearing price).

Equilibrium exchange rate: The equilibrium exchange rate is the rate at which the quantity of dollars equals the quantity of dollars supplied.

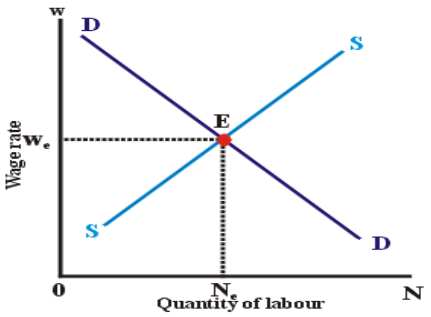


Equilibrium for a perfectly competitive firm

The equilibrium condition for a firm under perfect competition occurs where profits are maximised (or losses minimised). This occurs when a firm produces an output where marginal revenue (MR) equals marginal cost (MC), provided that the marginal cost is rising and lies above the minimum average variable cost.



Equilibrium in the labour market: In a competitive labour market, equilibrium occurs when the quantity of labour demanded is equal to the quantity supplied.



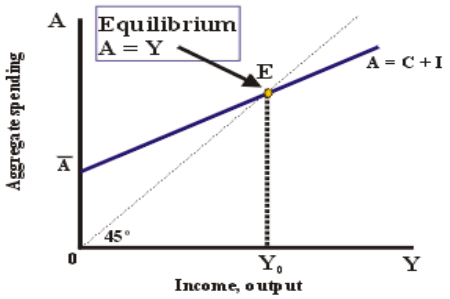
Equilibrium in the money market: Equilibrium in the money market occurs when the demand for money is equal to the supply of money. In a demand-determined supply of money model, this equilibrium is determined by the interaction of the demand for money and the interest rate. The interest rate, in turn, is determined mainly by the monetary authorities. In a model where the money supply is regarded as exogenous, equilibrium is determined by the interaction of the supply of money with the demand for money.

Equilibrium level of production or income (Y_0): In the simple Keynesian model, aggregate demand (spending) determines the level of output.

A ----> Y

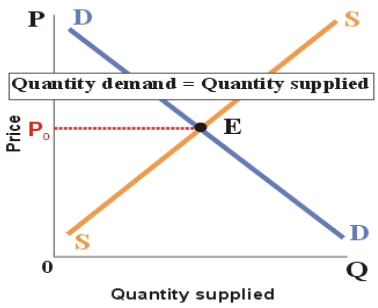
When aggregate demand is equal to the level of income and output (Y), equilibrium exists.

A = Y - equilibrium condition

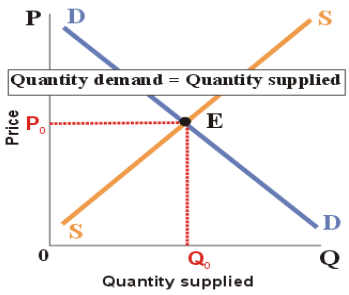


In the simple Keynesian model, without a government and foreign sector, A = C + I =Y.
In the simple Keynesian model, with a government but no foreign sector, A = C + I + G = Y.
In the simple Keynesian model, with a government and foreign sector, A = C + I + G + (X - Z) = Y.

Equilibrium price: The price where the quantity of a good supplied equals the quantity demanded of the good. In other words, there is no shortage or surplus within the market.



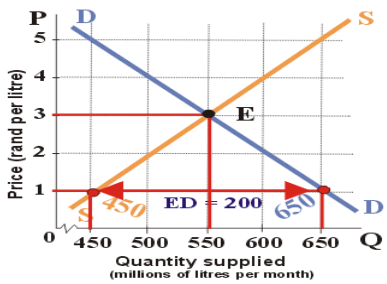
Equilibrium quantity: The equilibrium quantity is the quantity supplied and quantity demanded at the equilibrium price.



Equitable distribution of income: An equitable distribution of income is an equitable or socially acceptable distribution of income.

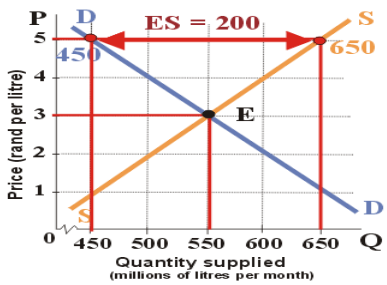
Excess demand: In the simple Keynesian model, an excess demand exists when aggregate spending exceeds total output and income.

Excess demand (market shortage): An excess demand occurs when the quantity demanded exceeds the quantity supplied. In other words, consumers want to buy more than what producers are prepared to sell.



Excess supply: In the simple Keynesian model, an excess supply exists when total output and income exceed aggregate spending.

Excess supply (market surplus): An excess supply occurs when the quantity supplied exceeds the quantity demanded. In other words, producers are prepared to sell more than what consumers are willing to buy.



Exchange rate

An exchange rate states the price, in terms of one currency, at which another currency can be bought, or an exchange rate is the domestic price of foreign currency.

Rand/Dollar
R4,7400 = $1.00

Note that we could just as easily define the exchange rate the other way around, as the foreign price of domestic currency.

Dollar/Rand
$0,2128 = R1

For example, if the rand/dollar rate of exchange is R4,7400, it is the same as saying that the dollar/rand exchange rate is $0,2128. (It is common practice to quote exchange rates to four decimal places because the large size of many transactions on the forex markets means that even small changes in exchange rates can give rise to substantial absolute changes in the value of such transactions. Generally, however, the agreed convention is to use the domestic price of foreign currency.

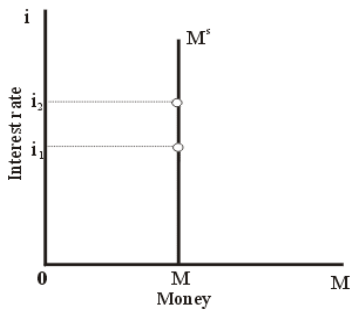
Exchange rate policy: Exchange rate policy is an integral part of macroeconomic policy in general and monetary policy in particular. Deliberate actions by the monetary authorities to influence exchange rates, as well as deliberate decisions not to intervene in the foreign exchange market (where exchange rates are determined), are part and parcel of monetary policy. In a small, open economy, such as that of South Africa, exchange rate movements can have a significant impact on important economic variables.

Exchange-rate targeting: In an exchange-rate targeting monetary policy framework, the main immediate objective of monetary policy is to establish or maintain a particular exchange rate against a single currency or a basket of currencies.

Excludability: A good is excludable if it is possible or not prohibitively costly to exclude someone from receiving the benefits of the good after it has been produced. In other words, a good is excludable if people can be prevented from obtaining or using it if they do not pay the indicated or negotiated price.

Exogenous money supply: An exogenous money supply implies that the money supply is independent from the interest rate and is controlled by the central bank. There is thus an independent money supply curve.

A change in the interest rate from i_1 to i_2 does not affect the money supply and this is therefore depicted by a vertical line, which is entirely inelastic with regard to the interest rate.

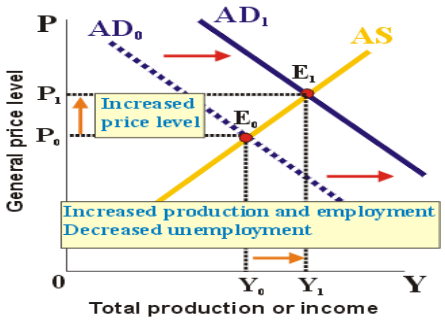


Expanded definition of unemployment: The expanded definition of unemployment omits the requirement that a person actively seeks employment. The argument is that many people are discouraged from actively seeking work due to the small probability of finding a job.

Expansionary (or stimulatory) policy: An expansionary policy is used to stimulate economic activity by increasing aggregate demand.

An expansionary fiscal policy means that government spending has to be increased and/or taxes have to be decreased.

An expansionary monetary policy implies an increase in the money supply and a decrease in the interest rate.
In the AD-AS model, an expansionary fiscal or monetary policy shifts the AD curve to the right.



Expenditure method: According to the expenditure method, the GDP is the sum of expenditures on final goods and services produced within the borders of a country. To derive at the expenditure on GDP, national accountants add up the spending of the four major sectors of the economy, namely households, firms, government and the foreign sector.

Expenditure on GDP: Expenditure on GDP is spending on goods and services produced inside the borders of a country.

In symbols it is written as:
Expenditure on GDP
= C + I + G + (X - Z).
C = consumption expenditure by households
I = investment spending by firms
G = government spending
X = expenditure on exports
Z = expenditure on imports

It includes exports but excludes imports.

Expenditure-reducing policies: Expenditure-reducing policies reduce the domestic demand for both domestically produced and imported goods and services.

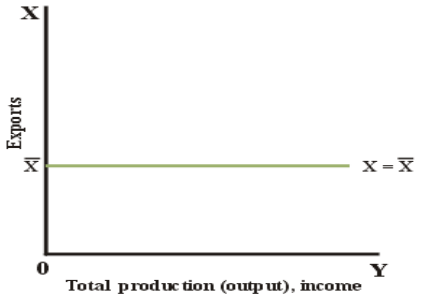
Expenditure-switching policies: Expenditure-switching policies change the prices of goods traded domestically (the so-called Anon-tradeables@) relative to those traded internationally (Atradeables@).

Explicit costs: Explicit costs are the monetary payments for the factors of production and other inputs bought or hired by a firm.

Export promotion: Export promotion strategies can have one of two aims. In countries practising import substitution, the aim could be to achieve neutrality between producing for the domestic and foreign markets. This can be done by removing measures that create an incentive to produce for the domestic market. The stronger version of export promotion (sometimes referred to as the ultra-export-promotion strategy) entails creating a net incentive to produce for the foreign market. This can be achieved, for example, by subsidising exporters and granting them tax relief or preferential access to resources, such as credit, as well as by maintaining an undervalued exchange rate.

Exports: Exports (X) are goods that are produced within the country, but sold to the rest of the world. South Africa's exports consist mainly of gold and other minerals.

In the simple Keynesian model, exports are regarded as autonomous with regard to total income Y. Exports (X) depend largely on economic conditions in the rest of the world, on international competitiveness and on exchange rates.



External balance: An external balance occurs when the trade balance is zero (i.e. when exports = imports).

External benefits: External benefits are also referred to as positive externalities. External benefits are the benefits enjoyed by someone other than the firm(s) producing the goods.

External costs: External costs are also referred to as negative externalities. External costs are costs borne by someone other than the firm(s) producing the goods.

Externalities: Externalities are the costs or benefits of a transaction or activity that are borne or enjoyed by parties not directly involved with the transaction or activity, and are not fully reflected in the price of the transaction or activity. We distinguish between positive and negative externalities, none of which is normally reflected in the market price.

In general terms, externalities reflect imperfections in the market that cause the prices of goods and services and inputs to be inaccurate signals of underlying scarcities. The presence of externalities therefore indicates an inefficient allocation of resources.

Where there are external costs involved, it is referred to as negative externalities and, in the case of external benefits, as positive externalities.

Examples of negative externalities are the dumping of chemicals in a river, smoke from factories that pollutes the air, noise coming from traffic, etc. If the externality is beneficial, the market will provide too little; if it is a cost, the market will supply too much.

Factors of production

Factors of production are the resources used to produce goods and services. There are four main factors of production, namely natural resources (or land), labour, capital and entrepreneurship.

Final goods and services: Final goods and services refer to those goods and services that are consumed by households and firms.

Financial account: It is the account where all purely financial flows into and out of the country, like purchases and sales of assets, such as bonds and shares, are recorded. It has three main components, namely direct investment, portfolio investment and other investment. Direct investment, portfolio investment and other investment are all shown on a net basis. In other words, the outflows (debits) have been deducted from the inflows (credits).

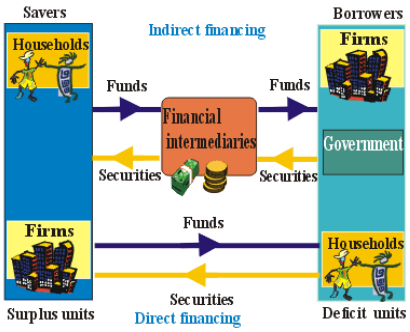
Financial account deficit: A financial account deficit occurs when the outflow of investment to the rest of the world exceeds the inflow of investment from the rest of the world.

Financial account surplus: A financial account surplus occurs when the inflow of investment from the rest of the world exceeds the outflow of investment to the rest of the world.

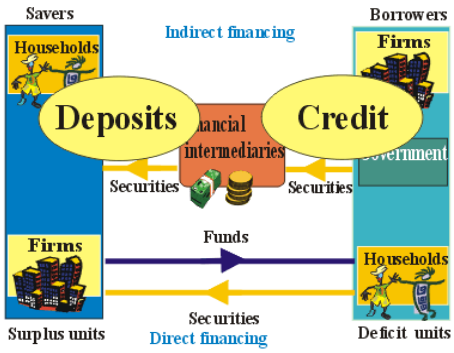
Financial assets: Examples of financial assets are stocks, bonds, money and government securities.

Financial institutions: Institutions that provide a range of services, including lending, accepting deposits and providing advice. Financial institutions include banks, such as First National Bank, Standard Bank and Nedbank; insurance companies, such as Old Mutual and Sanlam; pensions funds and the Johannesburg Securities Exchange (JSE).

These institutions are not directly involved in the production of goods. They act as links between households and firms with surplus funds and other participants that require funds – for example firms that wish to expand their activities.



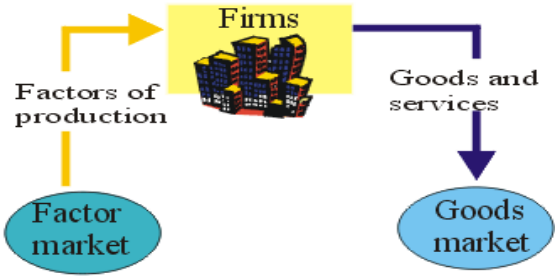
Financial intermediaries: The role of the financial intermediaries is to channel funds from the surplus units to the deficit units. They do this by accepting deposits from surplus units and granting credit to deficit units.



Financial transactions: Financial transactions do not involve a flow of goods and non-financial services, but they are of a purely financial nature.

Financing of government spending: There are basically three ways of financing government spending, namely income from property, taxes and borrowing.

Firms: A firm can be defined as a unit that employs factors of production to produce goods and services that are sold on the goods market.



Fiscal policy: Fiscal policy is government policy in respect of the nature, level and composition of government spending, taxation and borrowing, aimed at pursuing particular economic goals. The main instrument of fiscal policy is the budget and the main policy variables are government spending and taxation. In South Africa, the budget is presented to Parliament annually by the Minister of Finance, usually in February.

Even a superficial reading of one of these speeches gives some indication of the scope of fiscal policy. Further evidence of the complexity of fiscal policy can be found in the annual *Budget Review*, which is released along with the budget speech.

At the macroeconomic level, fiscal policy is one of the main elements of demand management or stabilisation policy. In the Keynesian model, fiscal policy has a very important impact on the equilibrium level of income. In addition, fiscal policy also involves questions of:

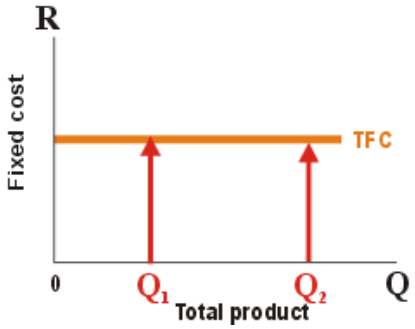
- *equity* (e.g. the equitable distribution of the tax burden amongst the different taxpayers and the equitable distribution of government spending and social spending in particular); and
- *efficiency* (e.g. the effects of various tax measures on the allocation of resources and/or on the propensity to work, save and invest).

Fixed cost

Fixed cost is the cost that remains constant, irrespective of the quantity of output produced. It is also referred to as overhead costs. Even if no output is produced, this cost must be borne.

In the short run, some factors of production cannot be varied and they are referred to as fixed factors, and the costs associated with them as fixed costs.

Examples of fixed cost are, for instance, the building cost of a factory, rent on buildings, interest payments on past borrowings and the cost of machines.



Fixed exchange rate: In a fixed exchange rate system the central banks stand ready to buy and sell currencies at fixed prices.

Fixed inputs: Fixed inputs are inputs of which the quantity cannot be altered in the short run. Examples of fixed inputs are rent on buildings, interest payments on past borrowings and the cost of machines.

Fixed investment: Fixed investment or capital formation is spending on things such as factories, plants, equipment, machinery, buildings, infrastructure and other construction activities. If a fixed investment is in productive assets, the production capacity of the economy expands and sustainable growth can take place.

Flat tax: A flat tax is a tax where all taxable incomes are taxed at the same marginal and average rates. This type of tax is supported by supply-side economists, who argue that a progressive tax system, with high marginal tax rates, reduces both the incentive to work and productivity. Proponents of such a tax also claim that it would be simple to administer since there will only be a single tax rate.

Floating exchange rate: A floating exchange rate is determined by buyers and sellers without government intervention. The external value of the currency is allowed to find its own value against other currencies through the forces of supply and demand in the foreign exchange market. The value will then rise or fall according to changes in supply and demand. The terms, flexible rates and floating rates, are used interchangeably.

Flow: A flow is measured over a period of time. An example is investment that may be measured as the amount of investment spending per year. A flow variable differs from a stock variable, which measures the physical quantity at a given moment in time. Stocks and flows are related. An increase in the flow will increase the stock. For instance, an increase in investment spending increases the stock of capital.

Examples of flow variables are income, profit, loss, number of births and deaths, savings, a demand for labour, gold sales, etc. A forest is a stock of trees, while the harvest of timber from the forest represents a flow.

Foreign exchange market: A foreign exchange market is the international market on which one currency can be exchanged for other currencies. The foreign exchange market does not have a specific location. The South African foreign exchange market comprises all authorised dealers, among whom are the major banks.

Foreign reserves: Foreign reserves are the holding of various foreign currencies. A surplus on the balance of payments causes foreign reserves to increase and a deficit on the balance of payments causes foreign reserves to decline.

Foreign sector: The foreign sector comprises all the countries in the rest of the world, as well as international institutions that govern the flow of goods and services and the flow of funds between different countries.

Formal sector: The formal sector is the modern sector of the economy. Formal employment refers to people who are employed in a full-time capacity in the formal or modern sector of the economy.

Free entry and exit: Under perfect competition, buyers and sellers are completely free to enter or leave a market. There are no barriers to entry in the form of legal, financial, technological, physical or other restrictions that inhibit the free movement of buyers and sellers.

Free goods: Free goods are things that are not scarce and therefore have no price. Examples are sunshine and air.

Free riding: Free riding arises when some or all consumers believe that the product will be provided anyway, whether they pay for it or not. Potential consumers have a strong incentive not to reveal their demand for pure public goods. Instead, they are likely to engage in free riding – that is hide their preferences in the expectation that a benefit can be enjoyed without having to pay for it. This happens in the case of pure public goods, since they are characterised by non-rivalry in consumption and non-excludability. It is therefore impossible to determine a price or to force users to pay for the benefits they derive from using the good or service. As a result, competitive markets cannot supply pure public goods at all, even though they are in great demand.

Frictional unemployment: Frictional unemployment (sometimes also referred to as search unemployment), arises because it takes time to find a job or to move from one job to another. It can be regarded as part and parcel of the way in which a market economy operates. In fact, frictional unemployment tends to be positively related to the level of economic activity. As economic conditions improve, an increasing number of workers tend to leave their previous jobs in search of better jobs.

Full employment: Full employment is one of five macroeconomic objectives. It is achieved when all available resources (labour, capital, land and entrepreneurship) are used to produce goods and services. This goal is commonly indicated by the employment of labour resources (measured by the unemployment rate).

Full-employment level of income: In the simple Keynesian model, the full-employment level of income is that level of income where all factors of production are used to produce goods and services. A level of less than full-employment is an indication that unemployment exists.

Functional distribution of income: The factors of production earn incomes, such as rent for natural resources; wages and salaries for labour; interest for capital; and profit for entrepreneurship. The distribution amongst these forms of income is referred to as the functional distribution of income.

Functions of money: The functions of money are a medium of exchange, a unit of account and a store of value.

Heterogeneous goods: Heterogeneous or differentiated goods are goods that have different varieties, qualities or brands.

Homogeneous products: Homogenous products are identical. There is therefore no reason for buyers to prefer the product of one seller to the product of another seller. This ensures that sellers and buyers compete with one another in terms of the price of the product. This is one of the characteristics or conditions of perfect competition. Examples of homogenous products are, for instance, agricultural products, metals, electricity and water.

Households: A household can be defined as all the people who live together and who make joint economic decisions, or who are subjected to others who make such decisions for them. A household can consist of an individual, a family or any group of people who have a joint income and take joint decisions. Every person in the economy belongs to a household.

Imperfect competition: It constitutes a competitive market where some of the producers and/or consumers are sufficiently significant to affect the price and quantity of goods by their actions alone. Oligopoly and monopolistic competition are often lumped together as imperfect competition.

Imperfect labour market: Some of the reasons why labour markets might be imperfect are the existence of trade unions; the fact that labour is heterogeneous and not completely mobile; intervention by government; and imperfect information.

Implementation lag: Once a decision has been taken, it takes time to implement that decision.

Implicit costs: Implicit costs are those opportunity costs that are not reflected in monetary payments. It includes the costs of self-owned or self-employed resources. For an economist the use of these resources is not free.

Import substitution: Import substitution aims to establish a net incentive to produce for the domestic rather than the international market. One of its aims is to reduce the dependence on imported goods. Instruments to achieve this include subsidies or tax relief to firms producing for the local market; export taxes on domestic firms producing for the foreign market; customs duty on foreign firms producing for the domestic market; quantitative restrictions on the importation of certain goods (i.e. import quotas); and maintaining an overvalued exchange rate.

Import tariffs: Import tariffs are duties or taxes imposed on products imported into a country. They may be imposed for purposes of protection or revenue.

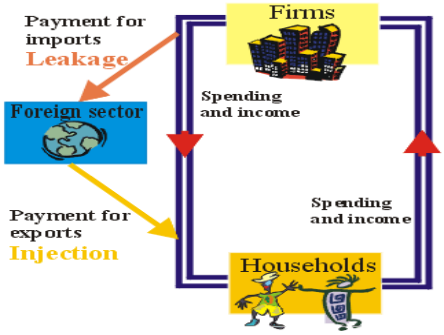
Tariffs for protection: These are designed to shield domestic producers from foreign competition in the home market.

Tariffs for revenue: These are imposed to generate income for government and can be levied on both imports and exports.

There are two kinds of tariffs, namely specific tariffs and ad valorem tariffs.

Imports: Imports (Z) are goods that are produced in the rest of the world, but purchased for use in the domestic economy. South Africa's imports consist mainly of capital and intermediate goods that are used in the production process.

In the circular model of income and spending, imports constitute a leakage.



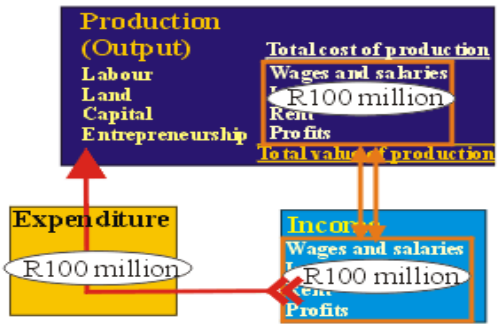
Income: Income is the amount of funds, goods or services received by an individual, a corporation or an economy in a given period of time.

The main sources of income for households are wages and salaries, interest, rent and profits. This income is received from firms that use the factors of production owned by households to produce goods and services.

Income (vs money): Income is different from money. A certain amount of money can finance a much larger flow of income over a period of time. This is because money can be used over and over again. It is referred to as the circulation of money.

Income distribution: Income distribution is a *quantitative* expression of the distribution of income or wealth amongst the constituent members of a society. Income distribution is therefore something totally different to a social welfare function, and it is but one of many factors that determine social welfare. Other determinants include the extent of crime and pollution, the military threat posed by another country, the quality of city life and work stress.

Income method: According to the income method, GDP is the sum of incomes earned in the economy.



Income elasticity of demand: The income elasticity of demand measures the responsiveness of the quantity demanded to changes in income.

$$e_Y = \frac{\text{\% change in the quantity demanded}}{\text{\% change in income of households}}$$

A positive income elasticity of demand means that an increase in income is accompanied by an increase in the quantity demanded of the product concerned. Goods with a positive income elasticity of demand are referred to as normal goods.

A negative income elasticity of demand means that an increase in income results in a decrease in the quantity demanded of the product concerned. Goods with a negative income elasticity of demand are referred to as inferior goods.

Incomes policy: The aim of an incomes policy is to establish a balance between the growth in incomes and the growth in productivity in order to combat inflation.

Independent variable: The independent or explanatory variable is used in a theory to explain other things.

Indirect taxes: Taxes are usually split into two types, namely direct taxes and indirect taxes.

Indirect taxes are imposed on goods and services and are usually paid for by the consumers of these goods and services. Examples of indirect taxes are value-added tax or VAT, as well as customs duties and excise taxes.

Indirect tax is a practical way of raising revenue from taxpayers who are not captured by the income tax net. Indirect taxes are often also invisible taxes and they have the added advantage that the tax liability is largely determined by the amount of the taxed goods or services that are consumed (rather than by the taxpayers' income or wealth). *Ad valorem* taxes (i.e. those taxes that are calculated as a percentage of the amount spent, in contrast to *specific* taxes, which are levied as a fixed monetary amount per item) also automatically increase with inflation and therefore the rates do not have to be adjusted every year.

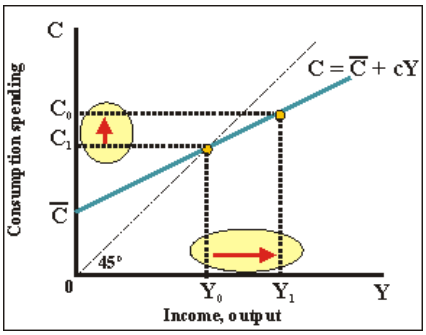
Individual demand: Individual demand is the demand for a good from a single individual or household.

Individual supply: Individual supply is the supply of a good or service by a single supplier or producer.

Induced consumption (cY): Induced consumption refers to a change in consumption that is due to a change in income. In the simple Keynesian model, the marginal propensity to consume indicates the proportion of an increase in income that will be used for consumption.

Induced consumption

$$C = \overline{C} + \boxed{cY}$$



Industrial development: In the early post-war period, industrialisation was regarded as such an important aspect of economic development that agricultural and rural developments were often neglected in the interest of rapid industrial growth. Not surprisingly, industrial development failed to live up to the unrealistically high expectations of economists and planners. Most developing countries now attempt to achieve a more balanced sectoral growth pattern in which industrialisation is not pursued to the detriment of other activities. But although it is no longer a predominant objective of development, industrial development remains a priority item on the agendas of developing countries.

Industrial policy: Definitions of industrial policy range from narrow ones, which equate it with targeting measures, aimed at promoting specific industrial activities, to broad ones, which include all aspects of government policy that impact on industrial performance, such as macroeconomic, trade and education policies. In South Africa, as elsewhere, the distinction between *industrial policy* and *trade policy* has become particularly blurred, with many analyses of industrial policy focusing almost exclusively on trade strategies.

Inferior goods: A good for which an increase in income results in a fall in the demand for the good (e.g. bread and coal), as consumers switch to other more expensive products (e.g. from bread to meat). These products will have a negative income elasticity of demand. In other words, a positive increase in income results in a negative change in demand.

Inflation: Inflation is a continuous and considerable rise in prices in general.

Inflation targeting: Mishkin (2000:105) defined inflation targeting as a monetary policy strategy that encompasses five main elements:

i. The public announcement of medium-term numerical targets for inflation.
ii. An institutional commitment to price stability as the primary goal of monetary policy, to which other goals are subordinated.
iii. An information-inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate, are used for deciding on the setting of policy instruments.
iv. Increased transparency of the monetary policy strategy via communication with the public and the market about the plans, objectives and decisions of the monetary authorities.
v. Increased accountability of the central bank for attaining its inflation objectives.

Inflationary financing: If government cannot finance all its expenditure through tax revenue and borrowings from the private sector, it can borrow from the Reserve Bank. Such a loan will increase the cash reserves of banks and can therefore potentially increase the money supply. This type of financing is referred to as inflationary financing.

Informal sector: The informal sector, also referred to as the shadow economy, unrecorded economy, underground economy or hidden economy, has no precise definition.

Institutionalist view of labour markets: Adherents of the institutionalist view reject the relevance of neo-classical labour market analyses and base their arguments on second best considerations. According to the theory of the second best, the presence of one departure from Pareto efficiency means that total welfare is not necessarily maximised by allowing competitive markets to realise the remaining conditions for efficiency. In other words, if all the conditions are not met, the remaining conditions do not necessarily constitute the best alternative solution. This

implies that, in any situation in which actual labour markets differ from the ideal neo-classical world, interventions, such as collective bargaining frameworks and government-mandated wages and labour standards may improve the Pareto efficiency of outcomes.

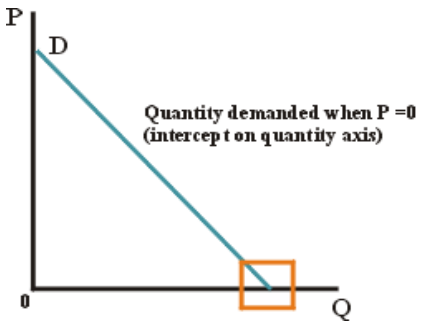
Instrument independence: Instrument (or operational) independence refers to the freedom to choose and apply various instruments of economic policy in the pursuit of stated goals.

Instruments of fiscal policy: The instruments of fiscal policy can be divided into macro instruments and micro instruments.

Macro instruments include total government expenditure, the economic categories of consumption by, and capital expenditure of government, the total tax amount or ratio, the budget deficit and the way in which the deficit is financed.

Micro instruments include the various functional categories of government expenditure (e.g. on education, health, welfare and defence), the different budget votes and programmes, the different kinds of taxes and the rates at which they are levied, and different dimensions of public debt (e.g. maturity and ownership structure).

Intercept of the demand curve: The intercept of a graph is the point at which it crosses (or intercepts) one of the axes.



Interdependence between firms: Interdependence between firms refers to the degree to which the actions of one firm affect (or are determined by) the actions of other firms.

Interest elasticity of investment demand: The interest elasticity (or sensitivity) of investment demand provides an indication of how sensitive or responsive investment demand is to a change in the interest rate. If investment demand is not sensitive to the interest rate, the interest elasticity of investment demand is inelastic. If investment demand is highly responsive, a change in the interest rate causes a major change in investment spending. The interest elasticity of investment demand is elastic.

Interest on public debt:: Government borrows on the capital market by issuing government stock (bonds) on which it has to pay interest. The more government borrows, the more interest it has to pay.

Interest rate: The interest rate is the price of borrowed money. The rate is expressed as a percentage per annum. A 10% interest rate tells us that the cost of borrowing R1, 000 for one year is R100. More broadly it can be defined as the reward for giving up the use of money, and it is an amount paid to a lender over and above the original sum borrowed.

There is a range of interest rates on different types of financial instruments. These rates differ as a result of factors such as differences in risk, maturity, the liquidity or marketability of the instrument, the size of the loans and the market structure.

Interest rate and aggregate demand: Aggregate demand is the total demand for goods and services in the economy and comprises the following components: Consumption spending by households (C) plus investment spending by businesses (I) plus government spending on goods and services (G) plus exports (X) minus imports (Z). In terms of symbols, it is represented as follows: $A = C + I + G + X – Z$.

The interest rate influences aggregate demand in various ways. An important linkage is the inverse relationship between the interest rate and investment spending. A decrease in the interest rate increases investment spending and, consequently, aggregate demand and the level of income and output increase.

Interest rate and bond prices: An important relationship exists between the price of a bond and the interest rate. There is an inverse relationship between the price of a bond and the rate of interest. A decrease in the price of a bond causes an increase in the rate of return, while an increase in the price of bonds causes a decrease in the rate of return.

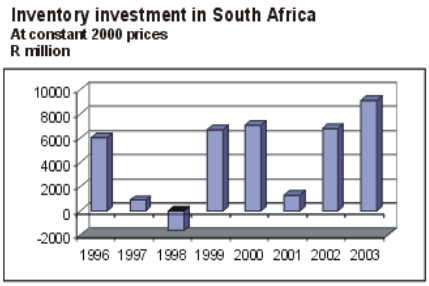
Interest rate and investment: An inverse relationship exists between the interest rate and investment. This inverse relationship is due to the impact of the interest rate on the cost of capital. A higher interest rate implies a higher cost of capital and, consequently, there are fewer profitable investment projects.

Intermediate goods: Intermediate goods are used in the production of final goods and services. Intermediate goods are purchased to be used as inputs in producing other goods before these are sold to end users.

Internal balance: An internal balance or equilibrium means that output is at the full employment level.

Inventories: Inventories are stocks of finished products, intermediate goods, raw materials and other inputs that businesses have on hand. One major reason for keeping inventories, is to maintain a continuous stream of production by avoiding any supply shortages. Another major reason is to avoid the loss of sales because finished products are unavailable when a customer is ready, willing and able to buy.

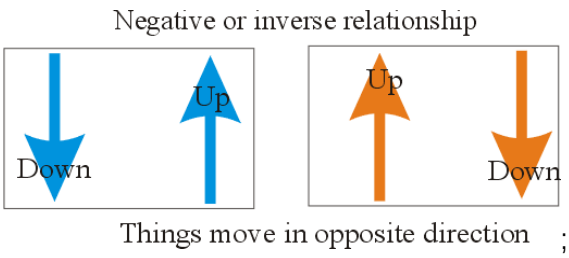
Inventory investment: Inventory investment constitutes the difference between goods produced and goods sold in a given year. If production exceeds sales, inventories accumulate and inventory investment is positive. If production is lower than sales, inventories decrease and inventory investment is negative.



Source: South African Reserve Bank, *Quarterly Bulletin*, December 2004

In the Keynesian model, the message of whether an excess demand or excess supply exists is sent to firms via changes in their inventories.

Inverse relationship: An inverse or negative relationship means that the change in the dependent variable is in the opposite direction to the change in the independent variable.



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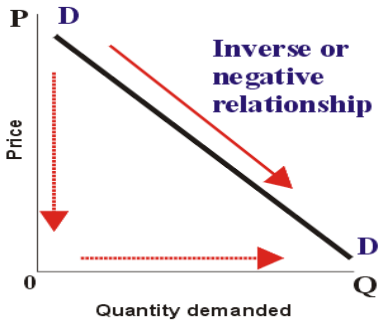
The demand curve for a product represents an inverse relationship.



Investment (I): Investment is spending on additions to the capital stock (machinery, structures, inventories, etc.).

An important distinction should be made between real and financial investment.

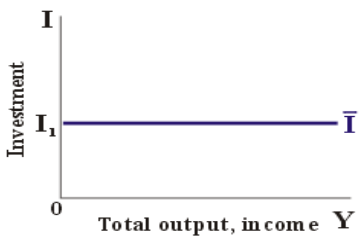
Real investment is spending in addition to the capital stock (machinery, structures, inventories, etc.). Such investment is undertaken with the aim of making future profits.

Financial investment is an investment in shares and other financial instruments. When people put money on deposit with a bank or buy bonds or shares, they are making a financial investment on which they earn a return. Financial investment in shares and other financial instruments is obviously of great importance in the economy, but it does not directly create production capacity.

When an economist refers to investment, he/she usually means real investment.

Investment function

In the simple Keynesian model, investment is regarded as an autonomous function (I = I), which is determined independently from the current level of output. It is one of the components of aggregate demand that influence the level of output.



The decision by firms to invest depends largely on the following factors and variables: Interest rates, expectations, business confidence and regulations. A change in any of these factors will cause a change in investment and, consequently, the level of output changes.

In the IS-LM model, the investment function is I = I - bi to make it an explicit function of the interest rate.

Inward industrialisation: Inward industrialisation is essentially a growth strategy that is based on meeting the wants of the rapidly growing population in urban areas.

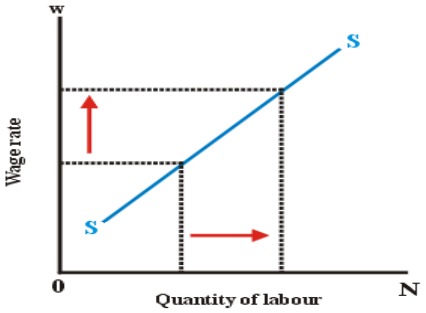
In the South African context, the term, "inward industrialisation" was coined to describe strategies based on the expansion of domestic effective demand (i.e. *C* + *I* + *G*). Such strategies involve the production of goods for which there is a latent demand amongst the poor. If employment opportunities are created in the process, incomes are increased and latent demand is transformed into effective demand for consumption or investment goods.

Labour: Labour refers to the human effort put into the production of goods and services. This effort includes both physical and mental exertion.

Labour-intensive production: Various techniques are available to produce a particular good. When the production process is dominated by labour, it is referred to as a labour intensive production method.

Labour market: The labour market constitutes a link between the potential sellers (suppliers) of labour and the potential buyers (demanders) of labour.

In a competitive labour market, the forces of supply and demand ensure that equilibrium – i.e. where the quantity of labour demanded is equal to the quantity of labour supplied – is reached through changes in the wage rate.



Labour market policies: The term, "labour market policies", is normally used to refer to measures that directly affect "the operations and results of labour markets so as to maximise quality employment and minimise unemployment and underemployment". (International Labour Office, 1993:6.)

Examples of labour market policies are:

- Policies to promote collective bargaining between employers and employees.
- Measures to regulate conditions of employment (hours of work, leave, wages, etc.) and safeguard minimum standards of health and safety for workers.
- Policies to increase productivity by upgrading the skills of the workforce.

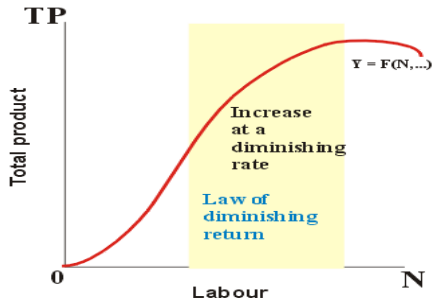
Law of demand: The law of demand states: Other things being equal (i.e. *ceteris paribus*), the higher the price of a good, the lower is the quantity demanded, and *vice versa*.

At higher prices, a lower quantity will be demanded than at lower prices, other things being equal. Alternatively, at lower prices, a higher quantity will be demanded, other things being equal.
Reasons to observe the law of demand:

- Substitution effect: The tendency of people to substitute in favour of cheaper commodities.
- Real-income effect: A change in purchasing power that occurs when the price of a good changes.

Law of diminishing marginal utility: The law of diminishing marginal utility states that the marginal utility of a good or service eventually declines as more of it is consumed during any given period. It is also referred to as Gossen's First Law.

Law of diminishing returns: The law of diminishing returns states that, as more of a variable input is combined with one or more fixed inputs in a production process, the marginal product of the variable input will eventually decline. The decline in the marginal product of the variable input is followed by a decrease in the average product and, lastly, by a decrease in the total product.



Law of supply: The law of supply states: Other things being equal (i.e. *ceteris paribus*), the higher the price of a good, the higher is the quantity supplied, and *vice versa*.

At higher prices, a larger quantity will generally be supplied than at lower prices, all other things being equal.

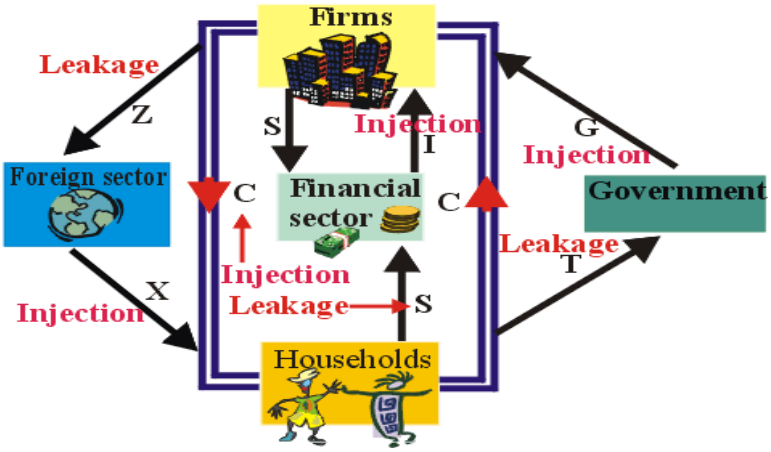
Reasons to observe the law of supply:

- Higher prices increase incentives for increasing production.
- The law of increasing costs.

Leading indicators: Leading indicators are those indicators that give advanced warning of changes in aggregate economic activity. Leading indicators used in South Africa include the number of new motor cars sold; the number of companies registered; and merchandise exports.

Leakages (withdrawals) and injections (additions): A leakage is any factor that decreases the circular flow of income and spending. Examples of leakages are savings, taxes and imports.

An injection is any factor that increases the flow of income and spending. Examples of injections are consumption, investment, government spending and exports.



Long-run costs

In the long run, there are no fixed inputs. All inputs (including all the factors of production) are variable. In the long run, there are thus no fixed costs. All costs are variable. Moreover, the law of diminishing returns does not apply and economics of scale or diseconomics of scale may be experienced.

Long-run equilibrium: Firm

In the long run, the equilibrium of a firm occurs when the price determined in the market is just sufficient for the individual firm to earn a normal profit.

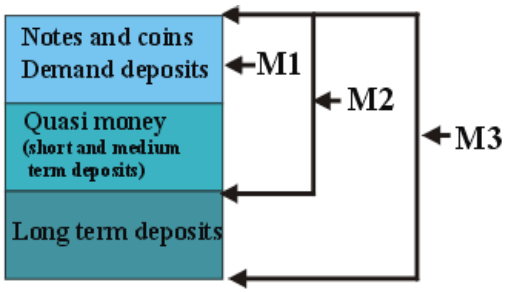
Long-run equilibrium: Industry

Economic profits and economic losses are, in the long run, not sustainable under conditions of perfect competition. When firms are making economic profits, it will induce new firms to enter the industry and when this happens, the market (or industry) supply will increase, thus reducing the market price, *ceteris paribus*. Firms making economic losses will leave the industry in the long run, thus reducing market (or industry) supply and raising the market price, *ceteris paribus*. The industry will only be in equilibrium in the long run if all firms are making normal profits.

M1, M2, M3

M1, M2 and M3 provide a measure of the money supply.

- M1 includes coins and notes (in circulation outside the monetary sector), as well as demand deposits (including cheque and transmission deposits) of the domestic private sector with monetary institutions.
- M2 is equal to M1, plus all other short-term and medium-term deposits of the domestic private sector with monetary institutions.
- M3 is equal to M2 ,plus all long-term deposits of the domestic private sector with monetary institutions.



Macroeconomic objectives: Macroeconomic objectives (or goals) are goals in respect of variables pertaining to the performance of the economy as a whole, for example:

- Economic growth.
- Job creation (or reducing unemployment) to reach full employment.
- Price stability (or reducing inflation).
- Balance of payments stability.
- An equitable distribution of income.
- Poverty alleviation.

Macroeconomic policy trade-offs: Virtually everyone will agree that economic growth and, more in particular full employment ,should, in principle, always be at the top of the list of policy priorities.

Why then is economic growth (and full employment) not always at the top of the list of priorities? In a certain sense they are always there. Medium and long-term economic growth and employment creation are the ultimate goals of economic policy. Unfortunately, however, these goals cannot be pursued at all costs, and when inflation and balance of payments problems are experienced, the growth objective often has to take a back seat. In other words, inflation and balance of payments problems may constrain policy-makers in their pursuit of economic growth and full employment.

The best known example of a macroeconomic trade-off is the Phillips curve, which indicates that unemployment and inflation could be traded off against each other. In other words, a lower inflation rate could be achieved by trading it off against, or exchanging it for increased unemployment.

In a small, open economy, such as that of South Africa, which is dependent on imported capital and intermediate goods, and which exports about one third of its GDP, the balance of payments is often an overriding consideration. In fact, it has frequently been argued that balance of payments stability should be viewed as a constraint rather than a policy objective. In other words, if a serious balance of payments deficit is experienced, economic policy simply *has* to be geared for the elimination of this deficit

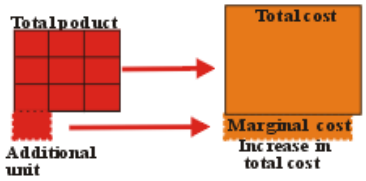
Macroeconomic theory: In macroeconomic theory, there is no guarantee that total spending will be equal to total production in the economy. Spending may be equal to, greater than or less than income. If aggregate spending A exceeds the level of output Y, inventories will decline and firms will increase their production, and total output (production) will rise. If aggregate spending A is less than the level of output Y, inventories will rise and firms will decrease their production, and total output (production) will decline. When aggregate spending A is equal to the level of output Y, equilibrium exists and there is no tendency for the level of output to change.

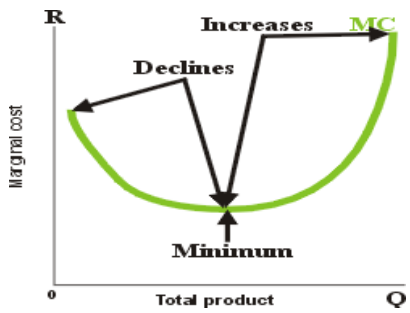
Macroeconomic views of the labour market: Macroeconomic views of the labour market can be classified according to the new classical view, the Keynesian view and the structuralist view.

Macroeconomics: Macroeconomics is concerned with the economic issues that involve the overall economic performance of the economy, rather than those of particular individuals, markets or firms. It is the study of economy-wide phenomena resulting from group decision-making in entire markets. It deals with the economy as a whole. The emphasis is on topics such as total production, income and expenditure, economic growth, aggregate employment (and by implication unemployment), the general price level, inflation and the balance of payments. Examples include the study of the causes of fluctuations in the level of output; the determinants of economic growth; and the use of economic policy to influence the performance of the economy.

Marginal cost (MC)

Marginal cost is the increase in total cost when one additional unit of output is produced.



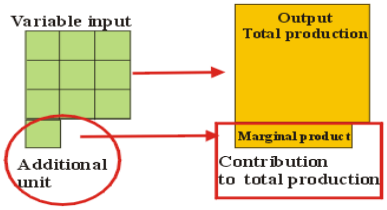


As the total product increases, marginal cost first decreases, followed by reaching a minimum and then increases.

Marginal physical product (MPP): The marginal physical product of labour (MPP) is the physical value to the firm of employing an additional unit of labour.

Marginal product (*MP*)

The marginal product (MP) of the variable input is the number of additional units of output produced by adding one additional unit (the marginal unit) of the variable input. It measures the contribution of an additional unit of the variable input to total production.



Marginal propensity to consume (c): The behaviour by households of increasing their consumption by less than the increase in income, is captured in the behavioural coefficient (c) and is referred to as the marginal propensity to consume. The marginal propensity to consume is the increase in consumption per unit increase in income, and indicates the proportion of an increase in income that will be used for consumption.

Marginal propensity to consume

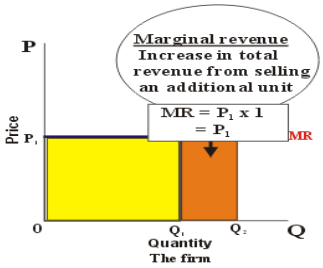
$$C = \overline{C} + cY$$

$$0 < c > 1$$

Marginal propensity to save (s): The marginal propensity to save is the proportion of an increase in income that is saved. In the simple Keynesian model, the savings function is S = -C + (1-c)Y and the marginal propensity to save (s) = 1 -c.

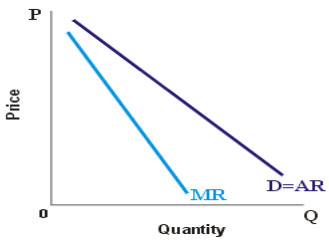
Marginal revenue (*MR*): Marginal revenue (MR) constitutes the increase in total revenue by selling one additional unit.

Under perfect competition, the price is given for the firm. (?) By selling one additional unit, total revenue (TR) will increase by an amount equal to the price of the product. Marginal revenue (MR) is therefore equal to the price of the product (P).



Under a monopoly, the firm can only sell an additional quantity of output if it lowers the price of its output.

The lower price will usually apply to all units of output, which means that the marginal revenue from the sale of an extra unit of output is less than the price at which all units of the product are sold.



Marginal revenue product (MRP): Firms are not only interested in the physical amount that an additional unit of labour contributes to total production, but also in what this contribution means in terms of its total revenue. This is referred to as the marginal revenue of labour (MRP) and is calculated as follows:

MRP = MPP x P

Marginal revenue product = Marginal physical product x Price of the product

Marginal tax rate: The marginal tax rate is the rate at which each additional rand is taxed.

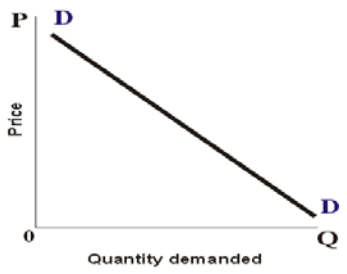
Marginal utility: Marginal utility is the extra or additional utility that a consumer derives from the consumption of one extra or additional unit of a good.

Market: A market brings buyers and sellers together, so that they can establish the price and quantity of a good or service traded.

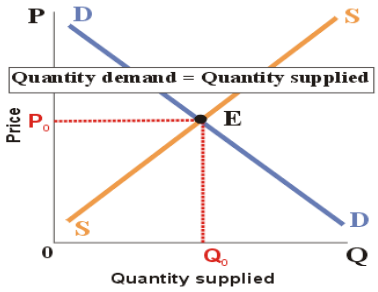
Market conduct:: Market conduct refers to the efforts of suppliers to market their products, to gain a competitive edge over their rivals, or to limit competition amongst themselves.

Market demand: Market demand is the sum of all the individual demands.

Market demand curve: A market demand curve is obtained by adding the individual demand curves horizontally (i.e. at each price). The market demand curve shows how the quantity demanded of some product during a specified period of time will change as the price of that product changes, keeping all other determinants of quantity demanded constant.



Market equilibrium: The market is in equilibrium when the quantity demanded is equal to the quantity supplied – i.e. when the plans of households (buyers, demanders) coincide with the plans of firms (sellers, suppliers). The price at which this occurs is referred to as the equilibrium price, and the quantity as the equilibrium quantity.



Market failures: Real-world economies are characterised by market failures – that is situations where the basic conditions for an efficient market outcome in a competitive market economy do not exist or are contravened. The following are some of the main reasons for market failures that prevent allocative efficiency:

- *Lack of information*. Contrary to the assumption of the neo-classical model, consumers and producers do not always possess the information necessary to make rational decisions. Producers may be unaware of the existence of certain resources or new technologies, while consumers may be ignorant of the potential dangers of certain goods or services, or of opportunities to obtain goods or services at lower prices than what they are currently paying for them.

- *Lags in adjustment*: Most markets do not adjust very rapidly to changes in supply and demand. This may be due to a lack of information, but it could also be the result of the limited mobility of resources. Neither labour nor physical capital can be easily moved from task to task or from location to location.

- *Incomplete markets*. Many markets are incomplete in the sense that suppliers are unable to meet the demand for some goods or services or that the market is unable to account fully for the external costs and benefits associated with individual actions.

- *Non-competitive markets*. Few, if any real-world markets are perfectly competitive in the sense assumed by the neo-classical model. The presence of monopolies and oligopolies in commodity markets, and the existence of minimum wages in labour markets, are well-known examples of departures from neo-classical perfect competition.

Market-oriented measures: Market-oriented measures refer to measures used by the monetary authorities to create incentives for financial institutions to react in the desired manner, through participation in the financial markets by buying and selling financial instruments. Such measures are often associated with changes in the interest rate at which the Reserve Bank is willing to extend credit to the banks.

Direct controls on interest rates and bank lending were abandoned in the early 1980s. Following the investigation of the De Kock Commission of Inquiry into the Monetary System and Monetary Policy in South Africa, there were significant reforms of the financial system and a movement towards a market-oriented system of monetary control. Controls were abandoned and the money, capital and foreign exchange markets were allowed to develop more naturally. The monetary authorities sought to control the growth in monetary aggregates without resorting to the use of direct control of the extension of credit to the private sector. Instead, interest rates were to be market-related, so that credit would be rationed by market forces.

Market or price system and efficiency: Scarcity requires that decisions be made about how resources are to be allocated. Resource allocation is resolved by the economic system:

- What and how much will be produced?
- How will it be produced?
- For whom will it be produced?

In a price or market system, supply and demand determine the prices at which exchanges will take place.

Market performance: The performance of a market can be evaluated according to the contributions that the conduct of the participants makes with regard to efficiency, full employment, price stability and progressiveness.

Market prices: Market prices are signals or indices of scarcity that indicate to consumers what they have to sacrifice in order to obtain the goods or services concerned. At the same time, market prices also indicate to the owners of the various factors of production how these factors could be best employed.

Market structure: The market structure constitutes the major organisational features of a market. These features include the number and relative sizes of sellers and buyers, the degree of product differentiation, the availability of information and the barriers to entry and exit. A distinction can be made between perfect competition, monopolistic competition, oligopoly and monopoly.

Market supply: Market supply is the sum of all the individual supplies.

Medium of exchange: This is the first and most basic function of money. It refers to the money function where money is widely accepted in exchange for goods and services. Buyers give up money and receive goods, while sellers give up goods and receive money. It acts as a lubricant or intermediary to smooth the process of exchange and to make it more efficient.

Medium-term expenditure framework: In the 1998/99 fiscal year, South Africa entered a new fiscal phase when the budget was presented in a medium-term expenditure framework (MTEF). The latter was linked to government's macroeconomic strategy (Gear), and formed part of the strategy to reduce the budget deficit and the ratio of taxation to GDP.

The introduction of the medium-term expenditure framework is another example of the shift in emphasis from stabilisation to structural reform, in order to enhance the growth and employment capacity of the South African economy.

The MTEF comprises three-year rolling spending plans for the national and provincial governments. The MTEF projections are revised annually on the basis of new information and policy priorities, but the departments' longer-term planning is aided by the fact that, at any specific point in time, there is a set of expenditure guidelines that serves as the basis for the ensuing years' budgetary allocations.

Merit goods and services: Merit goods and services are regarded as so meritorious that they are often provided via the national budget, even considering fact that the exclusion principle could be applied. Examples are education and health services; the enforcement of the use of seat belts; and bans on the usage of certain drugs. Such goods and services are treated in a special way, because the individuals buying or receiving them confer external benefits on other people (e.g. education and health services) or simply because it is believed that individuals are unable to act in their own interest (by wearing seatbelts or not using certain harmful drugs).

Microeconomic policy goals: Microeconomic policy goals pertain to, for example, a particular market; a single economic participant or group of participants; or a restricted geographical area (e.g. a particular town or city or an area within a particular city). The dividing line between sectoral and microeconomic policies is not always clear, but the following may be listed as examples for which microeconomic goals may be formulated:

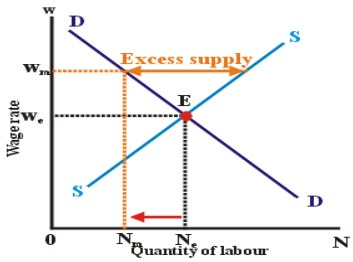
- Improving allocative efficiency by supplying an optimal quantity of *public products* (goods and services, e.g. defence) and improving technical efficiency by supplying these products at minimum cost.
- Improving market (technical) efficiency by addressing positive or negative externalities in respect of a particular *private product* (e.g. by levying a pollution tax on toxic fume emissions).
- Combating poverty or changing the distribution of income or wealth (the equity consideration) by *changing the market outcome* (result) in respect of a *particular product* (e.g. by introducing a subsidy on bread) or *intervening in the market* in respect of a particular product (e.g. by establishing a statutory minimum wage).
- Pursuing goals with regard to a particular *geographic* (suburban or rural) *area* (e.g. where government-financed infrastructure and housing subsidies for low-income earners are combined in a residential development project).

Microeconomic views of the labour market: Microeconomically, we distinguish between the distortionist and the institutionalist views of the labour market.

Microeconomics: Microeconomics is concerned with issues that involve the economic behaviour of individual agents, such as individual consumers, individual decision-makers in households, firms and other organisations. It is study of the economic behaviour of households and firms and how the prices of goods and services are determined. Examples include a study of how individuals decide what goods and services to buy and how firms decide what goods and services to produce and how to produce it.

Minimum wage: A legally established price floor for the wage paid to labour. The logic behind a minimum wage is to ensure that workers receive an adequate income for their efforts.

In a competitive labour market, the imposition of a minimum wage above the equilibrium wage causes an excess supply of labour.



Mixed goods and services: Mixed goods and services exhibit features of both public and private goods, but do not exactly fit the description of either. Two broad classes of mixed goods and services can be distinguished, namely:

- Rival, non-excludable goods and services
- Non-rival, excludable mixed goods and services

Mixed economy: In a mixed economy, not all the factors of production are in the hands of private people, as some are government-owned. Economic decisions are made partially through the market and partially by government. The degree of the mix varies from country to country.

Monetarism: An economic theory that focuses on the macroeconomic effects of a nation's money supply and its central banking institution. It focuses on the supply of, and demand for money as the primary means by which economic activity is regulated.

With inflation apparently getting out of hand in Western economies during the late 1960s, monetarism moved into the mainstream of macroeconomic thinking and policy analyses. However, by the mid-1970s, monetarism found itself facing stiff competition from competing schools of thought, such as the post-Keynesians, the supply-siders and the new classical economists.

The inflation of the late 1960s and early 1970s was essentially a demand-pull type of inflation. This was particularly so in the USA, where the financing of the Vietnam War led to excess demand pressure in the American economy. Monetarism, with its emphasis on the monetary causes of excess demand pressure, started receiving more attention at this time. Although slow money growth over the period 1969 to 1971 failed to reduce inflation in the USA, monetarism continued to gain popular support during the 1970s as inflation rose to double-digit levels on occasion.

The origins of monetarism in the post-war period can be traced to the work of one economist in particular, namely Milton Friedman. Monetarism rose to prominence with what appeared to be a plausible explanation of inflation and the causes of a shifting Phillips curve. The reasoning behind the shifting Phillips curve (also referred to as the Friedman Phelps expectations augmented Phillips curve) starts at the same point as that of Phillips – i.e. by discussing the adjustment of wages. Phillips assumed that nominal wages rise more rapidly when the unemployment rate was low, and less rapidly when the unemployment rate was high. Friedman and Phelps, however, argued that neither workers nor firms are concerned with *nominal* wages. Instead, both are concerned with the *real* wages they will be receiving and paying respectively.

When firms and workers bargain over nominal wages to be paid for the next few years, they take into account the inflation that they expect during that period. Accordingly, the rate of wage change for the economy as a whole should reflect two factors. Firstly, as in the regular Phillips curve, the lower the unemployment rate, the more rapidly nominal wages rise. Secondly, the higher the *expected* inflation, the more rapidly nominal wages rise. It is the second factor – the impact of expected inflation on the wage rate – that results in a different short-run Phillips curve for every expected rate of inflation. In graphic terms, this may be illustrated by a whole family of parallel short-run Phillips curves, or a rightward-shifting Phillips curve. This implies that inflation and unemployment can increase simultaneously. In other words, there is no trade-off between inflation and unemployment in the long run. The result is an explanation of stagflation, which is a period of rising inflation combined with rising unemployment.

Monetarist approach: Changes in the money supply are the most significant determinants of the rate of economic growth and the behaviour of the business cycle. Any and all changes within a set economic system, such as a change in interest rates, are believed to be a direct result of changes in the money supply.

Monetary authorities: In South Africa, the monetary authorities are the South African Reserve Bank (SARB) and the National Treasury, with the Governor of SARB and the Minister of Finance as the principal decision-makers.

Monetary base: It is also referred to as high-powered money. It usually refers to the stock of cash (notes and coins) and includes the cash in the hands of the non-banking public, the vault cash of banks and cash deposits with the Reserve Bank.

Monetary policy: In 1985, the De Kock Commission (1985:A3) defined monetary policy as: All deliberate actions by the monetary authorities to influence the monetary aggregates, the availability of credit, interest rates and exchange rates, with a view to affecting monetary demand, income, output, prices and the balance of payments.

Monetary sector: In South Africa, the monetary sector includes SARB, the Corporation for Public Deposits, the Land Bank, Postbank, private banking institutions and mutual building societies.

Monetary targeting: In the 1970s and early 1980s, monetary aggregates were popular targets of monetary policy in industrialised countries. Monetary targeting also became a key element of the policy packages prescribed by the

International Monetary Fund (IMF) and the World Bank as part of their assistance programmes for developing countries. The SARB also used money supply targets or guidelines in the 1980s and 1990s.

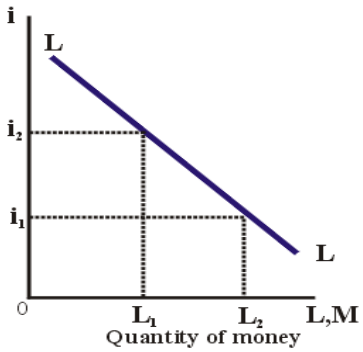
A monetary targeting strategy has three key elements:

- Monetary policy is based on the information conveyed by movements in a selected monetary aggregate (M3 in South Africa).
- A target level or range of the rate of increase in the chosen monetary aggregate is announced to guide the public's inflation expectations.
- There is some accountability mechanism that precludes large and systematic deviations from the monetary targets.

Monetary transmission mechanism
The monetary transmission mechanism refers to the way in which changes in the monetary sector are transmitted to the rest of the economy. A key element of the transmission mechanism is the relationship between the interest rate and aggregate spending (demand) in the economy.

Money: Money is anything that is generally accepted as a payment for goods and services or that is accepted in the settlement of debt.

Money demand curve: The demand for money curve indicates the quantity of money demanded at various interest rate levels.



Monopolistic competition: Monopolistic competition lies between the extremes of a monopoly and perfect competition. There is a range of actual market structures, from a few large firms producing virtually identical products to many firms producing a variety of similar products, or a combination of a few large firms and a large number of small ones. Some of the characteristics of monopolistic competition are:

- Firms are too small to have an effect on each other.
- Each firm produces a distinctive, differentiated product.
- Each firm faces a downward sloping demand curve.
- There are no barriers to entry or exit.

Monopoly: A monopoly is a market structure in which there is only one seller of a good or service that has no close substitute. Some of the characteristics of a monopoly are:

- One firm.
- A unique product with no close substitute.
- It faces a downward sloping demand curve, which is the market demand curve.
- There are barriers to entry.

Multiplier: The multiplier is the ratio of the change in income to the change in spending that brought it about. Behind the multiplier lies the idea that the spending of one person is the income of another person. It is due to this interdependence of spending and income that an increase in spending eventually causes aggregate income to increase by more than the initial increase in spending.

It is the total increase in GDP (or in aggregate spending) associated with a R1 initial increase in spending. An initial increase in consumer, investment or government spending could have a ripple effect on the economy, because

every new expenditure generates income for somebody, and that person will spend part of his/her new income, and whoever receives the money for that next purchase will spend part of it on another purchase, etc. An initial increase in spending could ultimately raise the GDP by a large multiple of the original amount spent.

There are a number of factors that will influence the size of the multiplier. Households do not spend all their income; they save some part of it. An increase in savings implies a lower multiplier.

Before households can spend, they must first pay their income tax. The higher the income tax they have to pay, the less they have available for spending and the lower the multiplier.

Some of their spending is on imported goods, such as videos, books, computers, etc. A higher spending on imported goods implies a lower multiplier.

National accounts: National accounts reflect the level and composition of the total activity in an economy during a particular period. In South Africa this task is performed by the national accounts section of Statistics South Africa (Stats SA) and SARB.

National accounts flows: In the national accounts, total spending (or expenditure) during any particular period is always equal to total production and income during that period. This is the result of the way in which total spending is defined in the national accounts. Changes in inventories are added to total investment spending (i.e. capital formation), which is one of the components of total spending. In macroeconomic theory, however, there is no guarantee that total spending will be equal to total production in the economy. Spending may be equal to, greater than or less than income.

Nationalisation: Nationalisation means that government takes over the ownership or management of private enterprises (with or without compensation).

Natural monopoly: A monopoly that arises due to cost considerations is referred to as a natural monopoly. This happens when the market is big enough for only one efficient firm. In other words, the economics of scale dictate that only one firm can efficiently supply the product for the market. If there are more than one firm, the cost of producing and supplying the product will be higher than if there were only one firm. This is usually the case when a large amount of fixed capital, for instance for the supply of electricity to a specific area, is required.

Natural resources: Natural resources refer to natural wealth and includes water, arable land, mineral deposits and the environment.

Natural sciences: Natural sciences study the natural universe. Examples of natural sciences are Physics, Chemistry, Botany, Astronomy and Zoology.

Needs: Needs are necessities, those things that are essential for survival, such as food, water, shelter and clothing.

Negative externality: A negative externality exists when the social cost of an activity (i.e. the cost to everyone, including that of the individual or firm that gives rise to the externality) is greater than the private cost of producing or consuming.

For instance, assume that a coal-fired power station on the Mpumalanga Highveld pollutes the air and water used by nearby livestock and crop farmers. The market price of electricity will reflect only the supplier's private cost of production. The full social cost of providing electricity will therefore be understated by the external costs suffered by the victims of the pollution.

From a social point of view, the presence of the negative externality in a competitive market causes inefficiency in the form of overprovision and/or underpricing of the good or service in question.

Negotiation: Negotiation differs form competition. Negotiation takes place between buyers and sellers – i.e. across the different sides of the market.

Net exports ($X - Z$): Net exports ($X - Z$) is the difference between exports (X) and imports (Z). A positive value indicates that exports exceed imports and a negative value indicates that imports exceed exports.

New classical view of the labour market: Economists of this school of thought believe that all economic agents are rational optimisers and that all markets, including the labour market, are always in equilibrium. The assumption of rational optimisation rules out the possibility of involuntary unemployment. Any rational agent who really wants a job would be willing to work for a wage low enough to attract a job offer. According to the new classical view, the unemployed therefore rationally choose to forgo employment by demanding excessive wages, and there is nothing that the government can or should do about it.

Nominal GDP: Nominal GDP or GDP at current prices is the sum of the quantities of final goods and services produced, times their current price. An increase in nominal GDP might increase over time, due to an increase in the quantity of goods and services produced and/or an increase in the prices of goods and services produced.

Nominal or money wages: A nominal or money wage is the amount of money actually received by a worker per hour, day, week, month or year.

Nominal value: This is the actual money price (in South Africa it is rands) that is paid when goods and services are bought or sold. This is in contrast to the term "real", which is the actual value that has been adjusted with a view to price changes or inflation.

Non-market-oriented instruments: Examples of direct or non-market-oriented instruments of monetary policy are credit ceilings and deposit rate controls imposed on banks via proclamations in the *Government Gazette*. It involves direct intervention by the monetary authorities.

Non-price determinants of demand: The major *non-price* determinants of demand are: (1) tastes and preferences; (2) income; (3) the price of related goods; (4) changes in expectations of future relative prices; and (5) the number of buyers or the population (i.e. the market size).

Distinguish between changes in demand and changes in the quantity demanded:

- Change in demand: It results from a change in a non-price determinant of demand (curve moves).
- Change in quantity demanded: It results from a change in price (move along the curve).

Non-price determinants of supply: The major *non-price* determinants of supply are: (1) input costs; (2) technology; (3) taxes and subsidies; (4) expectations of future relative prices; and (5) the number of firms in the industry.

Distinguish between changes in supply and changes in the quantity supplied:

- Change in supply: It results from a change in a non-price determinant of supply (curve moves).
- Change in quantity supplied: It results from a change in price (move along curve).

Normal good: A good for which an increase in income results in an increase in the demand for the good. These goods have a positive income elasticity of demand. In other words, a positive increase in income leads to a positive change in demand.

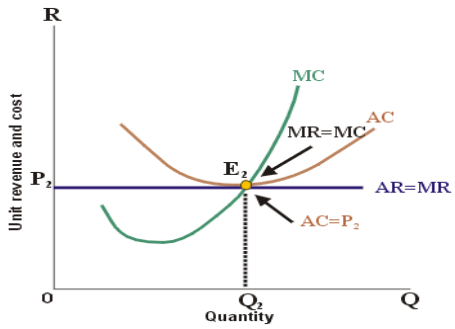
Normal goods are further classified as luxury or inferior goods. When the income elasticity of demand is greater than 1 – i.e. when the percentage change in the quantity demanded is greater than the percentage change in income, the good is classified as a luxury good. When the income elasticity of demand is positive but less than 1 – i.e. when the percentage change in the quantity demanded is smaller than the percentage change in income, the good is classified as an essential good.

Normal profit

Normal profit is the monetary payments that the firm's resources could have earned in their best alternative uses. Normal profit can be regarded as the minimum return required by the owners of the firm to engage in a particular operation. Normal profit forms part of the firm's production costs.

Normal profit for a competitive firm

Normal profit is equal to the best return that the firm's self-owned, self-employed resources could earn elsewhere. It includes the cost of the owner's time and capital and is included in the firm's economic costs. When average revenue (AR) is equal to average cost (AC), the firm only earns a normal profit.



Normative economics: A normative statement involves an opinion or a value judgement. It expresses a judgement about what ought to be. Value judgements about economic policies relate to whether things are good or bad – i.e. what ought to be. Normative issues can be debated but they can never be settled by science or by an appeal to the facts. An example of a normative statement is that "the minimum wage is a good thing". If you disagree with it, you have no sure way of convincing someone who believes the statement that he or she is wrong.

Oligopoly: Oligopoly refers to a market structure where a few firms dominate the market.

Some of the characteristics of an oligopoly are:

- A few firms.
- They could be either homogeneous or heterogeneous.
- It faces a downward sloping demand curve that may be kinked
- Entry varies from free to restricted.
- An interdependence between firms.

Open economy: An open economy is an economy that has significant trading and financial relationships with other economies. The extent of a country's involvement in international trade and finance is referred to as the openness of its economy or the degree of integration into the international economy, and it differs from country to country. South Africa may be regarded as an open economy.

Open-market policy: Open-market operations as an instrument of monetary policy comprise the sale or purchase of domestic financial assets (mainly treasury bills and government securities) by the central bank, in order to exert a specific influence on interest rates and the quantity of money.

Opportunity cost: The opportunity cost of a choice is the value to the decision-maker of the best alternative that could have been chosen but was not chosen. In other words, the opportunity cost of a choice is the value of the best forgone opportunity. Opportunity cost is one of the most important concepts in economics, since it captures the essence of the problem of scarcity and choice.

It is the highest valued alternative that must be sacrificed to attain something or to satisfy a want and it does not depend on who might use the resource, but it is the resource's highest value in any of the alternative uses not chosen.

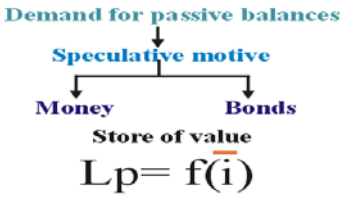
Opportunity cost of money: The opportunity cost of holding money is the interest that is forgone by not holding it as bonds.

Ordinal utility: An ordinal utility involves the ranking of the satisfaction derived from different bundles of consumer goods or services in order of preference.

Overdraft facilities: Overdraft facilities are created when a bank lends money to a person or institution.

Pareto efficiency: Pareto efficiency constitutes a situation where it is impossible to change the location of resources in a way that leaves at least one of the people better off without causing anybody to be worse off.

Passive balances: The demand for passive balances (Lp) is based on the speculative motive for holding real money balances which, in turn, relates to the function of money as a store of value. The demand for passive balances depends on the interest rate and interest rate expectations. Between the demand for passive balances and the interest rate, a negative relationship exists.



Passive element of economic policy: Economic policy has both an *active* element and a *passive* element. A passive economic policy exists when there is a decision not to act or to refrain from doing something in response to economic disturbances – for example when the monetary authorities decide not to change interest rates or to refrain from intervening in the foreign exchange market. This is an important point, as a decision to do nothing (e.g. in response to an economic disturbance) also forms part and parcel of economic policy.

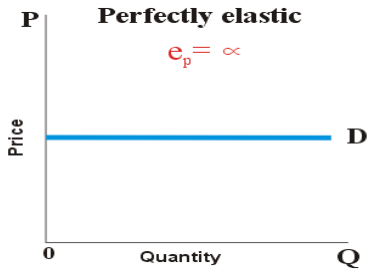
Patents: A patent is a special monopoly grant by government to the developer of a new invention, a new product or technique or a new product. Through a patent, a firm gains the exclusive rights to produce, sell and market its invention. Patents are designed to encourage inventions and other developments that promote technological advances. A firm that gains monopoly power due to a law is referred to as a legal monopoly.

Perfect competition: Perfect competition takes place when none of the individual market participants (i.e. buyers and sellers) can influence the price of a product. Some of the characteristics of perfect competition are:
There are many buyers and sellers

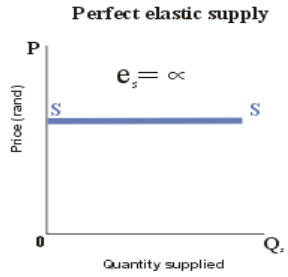
- A firm produces a homogenous product .
- Each firm faces a horizontal demand curve.
- There are no barriers to entry or exit.
- Perfect knowledge.

Perfect knowledge: Perfect knowledge implies that all market participants (buyers and sellers) have complete and correct information about market conditions. For example, buyers know what the market price of a product is and will know if a supplier charges a price higher than the market price. Perfect knowledge is one of the conditions of perfect competition. Under monopolistic competition and an oligopoly, firms have incomplete information (imperfect knowledge), while under a monopoly perfect knowledge exists.

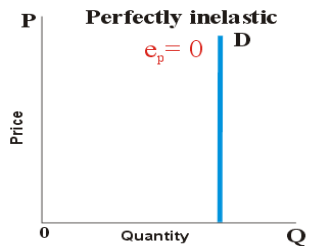
Perfectly elastic demand: A perfectly elastic demand indicates that, if there is a slight increase in the price, the quantity demanded will drop to zero. In this case consumers are not willing to pay more than the ruling price and even an increase of a few cents will decrease the quantity demanded to zero. A perfectly elastic demand curve has an elasticity coefficient of infinity and is depicted by a horizontal line.



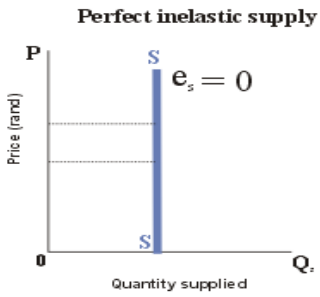
Perfectly elastic supply: In the case of a perfectly elastic supply, the price of the elastic of supply is equal to infinity, which indicates that the quantity supplied is highly responsive to a change in the price. A perfectly elastic supply curve is depicted by a horizontal line.



Perfectly inelastic demand: A perfectly inelastic demand indicates that the quantity demanded remains unchanged, irrespective of a change in the price of the product. A perfectly inelastic demand has an elasticity coefficient of zero and it is depicted by a vertical line.



Perfectly inelastic supply: In the case of a perfectly inelastic supply, the quantity supplied does not respond to a change in the price and the price elasticity of supply is equal to zero. A perfectly inelastic supply curve is depicted by a vertical line.

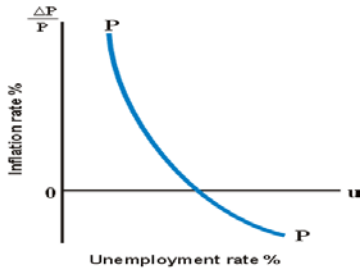


Personal distribution of income: Personal distribution of income is the distribution of income (irrespective of the source of income) amongst the various individuals or households in the economy.

Personal income tax: Personal income tax is levied on an individual's taxable income. Taxable income is the legal tax base and is obtained by deducting personal and other allowances from an individual's total income. Tax tables are then used to determine how much tax should be paid.

Personal income tax is the most important source of tax revenue in South Africa. Moreover, the relative contribution of this tax increased steadily from the early 1980s to the start of the new millennium.
As far as tax rates are concerned, South Africa traditionally had a very progressive personal income tax where the marginal rates increased sharply over a large number of tax bands or brackets. The top marginal rate in South Africa has been as high as 66% (although few taxpayers actually paid that rate, since it only became effective at high levels of real income). By 1991/92, the top marginal rate had been lowered to 43% but there were still 15 different income tax brackets and therefore 15 different marginal tax rates. Since then, the progression of the system has been reduced significantly by reducing both the number of brackets (by widening the bands) and the top marginal rate. By the 2002/03 fiscal year, there were only six tax brackets and the top marginal rate was down to 40%. (Bear in mind, however, that the tax base had been broadened significantly.)

Phillips curve: The Phillips curve relates the inflation rate to the unemployment rate (u). Lower inflation is related to higher unemployment and vice versa.



Pluralism: Pluralism is a political decision-making model in which the constituent units are organised into multiple, voluntary, competitive, non-hierarchically ordered and self-determined (as to the type or scope of interest) categories (interest groups) that are not specifically controlled or promoted by the state.

Political business cycle: The political business cycle refers to economic fluctuations, produced by economic policies, designed to help win elections.

Portfolio investment (balance of payments): Portfolio investment refers to the purchasing of assets such as shares or bonds, where the investor is interested only in the expected financial return on investment.

Positive economics: A positive statement is an objective statement of fact. It constitutes purely descriptive statements or scientific predictions. It is a statement about what is and contains no indication of approval or disapproval. Note that a positive statement could be wrong. The statement, "In 2003 the rate of unemployment in South Africa was 3%", is incorrect since it was much higher than 3%. It is, however, still a positive statement because it is a statement about that which exists.

Positive externality: A positive externality occurs when the social benefit (i.e. the benefit to everyone, including that of the individual or firm that gives rise to the externality) is greater than the private benefit of producing or consuming. Consider education as an example. The benefits of education are not restricted to the individual recipient. Society as a whole derives benefits from the effects of education. The educated individual may, for example, disseminate valuable information to other producers and consumers free of charge, thus enabling them to become more productive or happier citizens. Higher education levels also go hand in hand with lower birth rates and lower crime rates, thus reducing the pressure on government, and hence on taxpayers, to provide additional healthcare facilities and policing.

The outcome determined by a competitive market reflects only the private component of the total social benefit. Because the external benefits are not reflected in the market outcome, the equilibrium price and/or the equilibrium quantity will be too low if external benefits are present.

Poverty line: Poverty can be defined as the inability of individuals, households or communities to command sufficient resources to satisfy a socially acceptable minimum standard of living. The most commonly used way of measuring poverty is based on income or consumption levels. A person is considered poor if his or her consumption or income level falls below some minimum level necessary to meet basic needs. This minimum level is usually referred to as the "poverty line".

According to the South African Human Development Report 2003, about 48.5% of the South African population (21.9 million people) currently live below the national poverty line of R354 per month per adult equivalent of 2002.

Precautionary demand for money: It is the desire to hold money to meet unexpected expenses. Popularly known as "just-in-case" money. The transaction of, and precautionary demand for money are both related to the need to actively employ money balances and are referred to as active balances.

Demand for active balances

↓

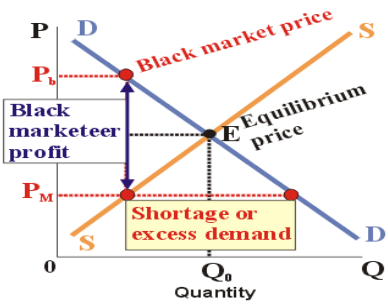
Transaction and precautionary motives

Medium of exchange

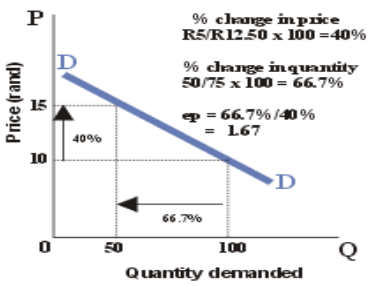
$$La = f(\overset{+}{Y})$$

Price ceiling

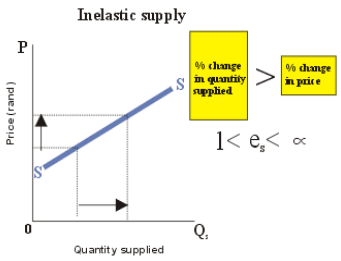
A price ceiling is a maximum that may be charged for a product, good or service. Governments often set maximum prices with the intention to protect consumers against exploitation. However, it usually leads to unintended consequences, where the maximum price is lower than the equilibrium price (or market clearing price).



Price elastic demand: If the quantity demanded of a product is very responsive to a change in the price, the demand is elastic. If this is the case, the price elasticity of a product is larger than 1. In other words, the percentage change in the quantity demanded is larger than the percentage change in the price.



Price elastic supply: If the price elasticity of supply of a product is larger than 1, the supply is said to be elastic. In the case of an elastic supply, the percentage change in the quantity supplied is larger than the percentage change in the price.



Price elasticity of demand: According to the law of demand, a negative relationship exists between the price and the quantity demanded. Price elasticity provides an indication of how sensitive or responsive the quantity demanded is to a change in the price. If the quantity demanded by consumers responds strongly to a change in the price, the demand is said to be "elastic", while the concept, "inelastic", is used when the quantity demanded is not very responsive to a change in the price.

Price elasticity (e_p) of demand is measured as follows:

$$e_p = \frac{\text{percentage change in quantity demanded}}{\text{percentage change in the price of the product}}$$

Price elasticity is important for firms since it has an important impact on the total revenue that firms receive from the sale of their products. Price elasticity is influenced by factors such as the availability of substitutes, the degree of complementarity of the product, the degree of necessity or luxury, the time period under consideration and the proportion of income spent on the product.

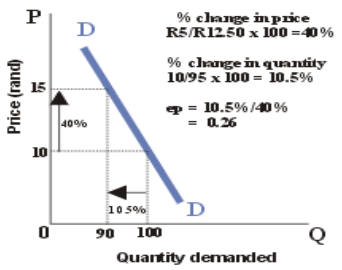
Price elasticity of supply: The price elasticity of supply measures the responsiveness of the quantity supplied of a product to changes in the price of the product.

Price elasticity (e_s) of supply is measured as follows:

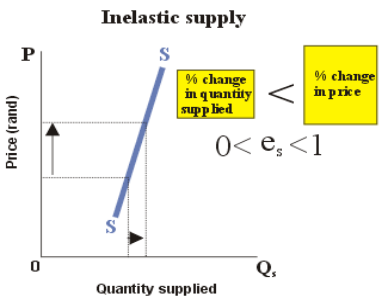
$$e_s = \frac{\text{\% change in the quantity supplied}}{\text{\% change in price}}$$

Price floor: A price floor is a minimum price that may be charged for a product, good or service.

Price inelastic demand: If the quantity demanded of a product is not very responsive to a change in the price, the demand for the product is inelastic. In this case, the price elasticity of a product is smaller that 1. In other words, the percentage change in the quantity demanded is smaller than the percentage change in the price.



Price inelastic supply: If the price elasticity of supply of a product is smaller than 1, the supply is said to be inelastic. In the case of an inelastic supply, the percentage change in the quantity supplied is smaller than the percentage change in the price.



Price maker: A price maker or price setter is a firm that has some influence over their products. Under imperfect competition, firms are regarded as price makers, while under perfect competition, firms are price takers.

Price stability: Price stability is one of five macroeconomic objectives. It refers to the objective of keeping inflation as low as possible. Inflation is a rise in the general (average) level of prices in the economy. Inflation is calculated by measuring the change in the consumer price index (CPI). The CPI reflects the cost of a representative basket of consumer goods and services consumed by the average South African household.

Primary deficit: The primary deficit is new measure of the deficit that has gained popularity in recent times. It is a special case of the primary balance. This is a measure of government's ability to service its debt (i.e. pay interest) out of ordinary revenue. The primary balance is calculated as the difference between total revenue and total *non-interest* expenditure. The primary balance is therefore equal to the conventional balance *plus* interest payments.

Primary income payments: Primary income payments constitute the remuneration of foreign-owned factors of production in the economy.

Primary income receipts: Primary income receipts constitute the remuneration earned by South African factors of production in the rest of the world.

Primary sector: The primary sector is the sector in which raw materials, such as agricultural, fishing, forestry and mining products are produced.

Price taker: An individual firm is a price taker if it has no choice but to accept the price that has been determined in the market. A perfectly competitive firm is price taker, since it cannot charge a price higher than the current market price, as it will then lose all its customers to the competition. Neither will a competitive firm charge a price lower than the current market price, since it can get the market price for its product.

Prices of alternative products: Different goods and services can be produced with the same resources. It is in the interest of a firm to select those goods and services that maximise its profits. An increase in the price of an alternative product might enable producers to increase their profits by switching to the alternative product, rather than continuing with their present line of business.

Farmers producing corn will, for instance, take the price of soya beans into account when they decide on the amount of land to be allocated for the production of corn. An increase in the price of soya beans, relative to that of corn, will decrease the supply of corn. It is more profitable for farmers to produce soya beans and, consequently, they will shift more of their resources towards producing soya beans.

Private good: A private good is a good that is consumed by individuals and households. All typical consumer goods (like food, clothes, furniture and motor cars) are private goods.

Pure private goods and services are characterised by excludability and rivalry in consumption. *Examples abound: Motor vehicles, aeroplanes, ski boats, houses, hiking boots, school books, pieces of art, theatre tickets, cellular phones, stoves, tooth-brushes, paraffin, painkillers, stockings, jam, haircuts, and so on.* The efficient allocation of such goods can be done through the market – that is without government intrusion.

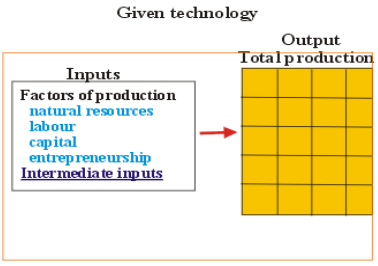
Privatisation: Privatisation refers to the transfer of ownership of assets from the public sector to the private sector (i.e. the sale of state-owned assets to the private sector).

Producer subsidy: A producer subsidy is a non-recoverable cash payment to the producer of a commodity, with the view to reduce the price to the consumer. An example would be a cash subsidy on brown bread, such as the subsidy previously paid to bread producers in South Africa.

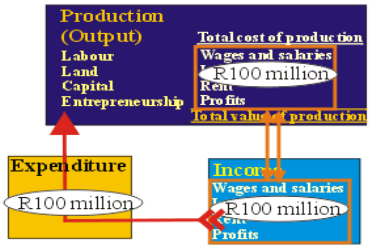
Product differentiation: Product differentiation takes place when there are different varieties of a product. Product differentiation occurs under imperfect competition.

Production function

A production function indicates the relationship between the quantity of inputs and the maximum output that can be produced with these inputs within a given time period and with a given technology.



Production method: According to the production method, the GDP is the sum of value added in the economy.

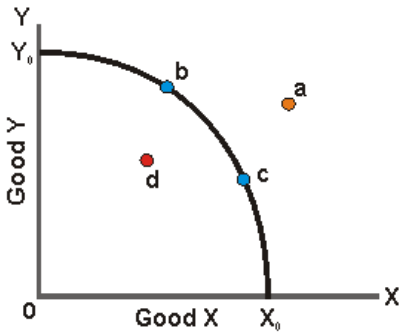


Production possibility curve

A production possibilities curve indicates combinations of goods or services that can be produced when the community's resources are fully and efficiently employed.

It is a curve, representing all possible combinations of total output that could be produced, assuming:

- a fixed amount of productive resources; and
- the efficient use of those resources.



Assumptions:

- Referring to possible output over a specified time period.
- Resources are fixed over the time period.
  - No significant changes in labour or productivity [put production possibilities curve overhead up]. The curve is bowed outward because of the *law of increasing relative cost.*
  - The opportunity cost of additional units of a good generally increases as society attempts to produce more of that good.

Production price index (PPI): The PPI provides an index with which changes in the cost of production can be measured. It measures the prices at the level of the first significant commercial transaction. For instance, the prices used for manufactured goods are the prices as they leave the factory, and not the prices charged to consumers.

Profit:: Profit is the difference between revenue and cost. In other words, a firm's profit is the difference between the revenue it earns by selling its product and the cost of producing it. It is, however, important to remember that, included in the economists' measure of cost, is the cost of all the firm's inputs. It includes the opportunity cost of the capital or any other inputs, such as labour and capital that are provided by the firm's owners. Normal profit forms part of a firm's production cost.

Profit-maximising rule: The profit-maximising rule states that profits are maximised where the positive difference between total revenue (TR) and total cost (TC) is at a maximum;
or
where marginal revenue (MR) is equal to marginal cost (MC).

Progressive tax: A tax is progressive when the ratio of tax paid to taxable income increases as taxable income increases. In other words, a progressive tax means that people with a high income pay a larger percentage of their income as tax than do people with a low income.

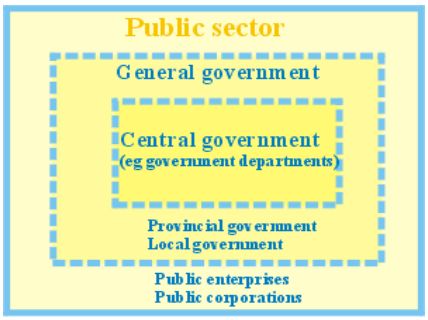
Proportional tax: A tax is proportional if the ratio of tax paid to taxable income is the same at all levels of income. In other words, the average tax rate is the same for all tax payers.

Public debt:: The public debt is the sum of all outstanding liabilities of government in which there is a primary legal responsibility to repay the original amount borrowed, as well as interest. The debt arises primarily from government's annual budget deficits.

Public corporations: Public corporations are firms that are controlled by government, either by the number of shares that government owns in these firms, or via the appointment of members of the board of directors. Examples in South Africa include Eskom, Armscor, the Atomic Energy Corporation, the Industrial Development Corporation, Rand Water, the SABC, the Post Office and Transnet.

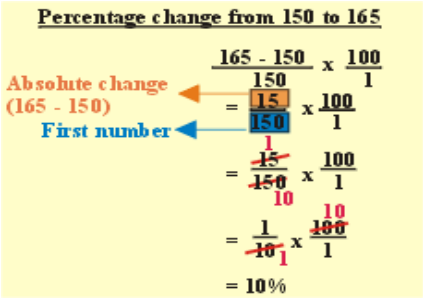
Public good: A public good is a good that is used by the community or society at large. Pure public goods are characterised by non-rivalry in consumption and non-excludability. Therefore, one person's consumption of a pure public good or service does not reduce its availability to other persons, and a person cannot be excluded from the consumption of such a product if he/she does not pay the indicated or negotiated price. A traffic light, for example, is a public good. Other examples are defence and weather forecasts.

Public sector: The public sector includes the general government, public corporations and other state enterprises.



Purchasing power: It refers to the number of goods and services that can be bought with a given amount of money. As prices rise, due to inflation for instance, the purchasing power of a given amount of money (say R100) declines, since you can buy less goods and services with this amount of money.

Rates of change (percentages)



Rates of change are usually expressed as percentages. The rate of change is calculated by dividing the absolute change by the first number and then multiplying it by 100.
A large percentage of a low number is still a low number. For instance, a 10% increase in GDP for Uganda (2002 = $6 billion) is only R0.6 billion.
A small percentage of a large number can be a large number. For instance, a 2% increase in GDP for Australia (2002 = R411 billion) is $8.22 billion.

Rational expectations: The idea of rational expectations is attributed to John Muth (1961), who defined expectations as "rational" if they were "essentially the same as the predictions of the relevant economic theory". The key question, of course, revolves around what is meant by the A relevant economic theory @. Different economists may have different views on this. Hence, their expectations, although "rational" in Muth's sense, would not be the same.

Rationing function of prices: The rationing function of prices refers to the function of prices as a mechanism to ration scarce supplies of goods and services to those who place the highest value on them (and can afford to pay for them).

Real assets: The value of assets adjusted for inflation.

Real economy: The real economy represents the physical side of the economy, dealing with goods, services and resources. This side is concerned with using resources to produce the goods and services that make the satisfaction of wants and needs possible. This should be contrasted with the paper economy, or the financial side of the economy.

Real GDP: Real GDP or GDP at constant prices is a measure of GDP in which the quantities produced are valued at the prices during a base year, rather than at current prices. Real GDP measures the actual physical volume of production.

To provide a measure of economic growth, it is necessary to take the effects of inflation into account. This is done by converting GDP at current prices to GDP at constant prices. This is done by valuing all the goods and services

produced during each year in terms of the prices ruling in a specific year, referred to as the base year. The base year in the table is 1995. In other words, each year's GDP is expressed at 1995 prices.

GDP at current and constant prices
1991-2002
(R millions)

Year	Current prices	% change	Constant prices	% change
1991	331980		519720	
1992	372225	12.1	508613	-2.1
1993	426133	14.5	514887	1.2
1994	482120	13.1	531538	3.2
1995	548100	13.7	548100	3.1
1996	617954	12.7	571705	4.3
1997	685730	11.0	586837	2.6
1998	738926	7.8	591267	0.8
1999	800969	8.4	603290	2.0
2000	888057	10.9	624379	3.5
2001	982944	10.7	642038	2.8
2002	1098714	11.8	661147	3.0

Real interest rate: The real interest rate is the difference between the nominal interest rate and the inflation rate. For example, if the nominal interest rate is 15% and the inflation rate is 10%, the real interest rate is (15% -10%) = 5%.

Real money supply: The real money supply is the money stock (supply) expressed in terms of its purchasing power (in terms of goods) and is written as M/P.

Real per capita GDP: Positive economic growth actually occurs only when total real production or income is growing at a faster rate than the population. This is provided by the real per capita GDP.

According to the table, South Africa experienced an increase in real GDP since 1993. This increase in real GDP was, however, not always sufficient to cause an increase in the real GDP per capita. During 1993, 1998 and 1999, a decline in real GDP per capita was experienced. This indicated that the economic growth experienced during those years was not sufficient to increase the per capita GDP.

Percentage change in real GDP and real GDP per capita
1991-2002

Year	Real GDP	Real GDP per capita
1992	-2.1	-4.2
1993	1.2	-0.9
1994	3.2	1.1
1995	3.1	1
1996	4.3	2.1
1997	2.6	0.5
1998	0.8	-1.3
1999	2.0	-0.1
2000	3.5	1.5
2001	2.8	0.8
2002	3.0	1

Real wage: A real wage is the quantity of goods and services that can be purchased with a nominal or money wage. For a given nominal wage, an increase in the general price level causes a decline in the real wage, while a decline in the general price level causes an increase in the real wage.

Regressive tax: If the average tax rate decreases as taxable income increases, we are dealing with a regressive tax. A regressive tax hits poor people the hardest. VAT is an example of a regressive tax in South Africa.

Relative prices: This constitutes the price of one good in terms of another. A decrease in the price of one good relative to another good, decreases the relative price of the good. The opposite occurs when the price of one good rises relative to the price of another good.

Renewable resources: Natural resources, such as trees, wildlife, soil, air, water and sunlight can be regarded as renewable, since they can be replaced by nature over a period of time or by human actions. To effectively use renewable resources, it is important to maintain a balance between the rate of use and the rate of renewal. If the rate of use exceeds the rate of renewal, the resource will be exhausted. It is also important to realise that, through our actions, we might cause irreparable damage to these renewable natural resources. Just think of the problems caused by air and water pollution, the problem pertaining to the disposal of garbage and the destruction of forests and wildlife.

An important *renewable* natural resource in South Africa is its wildlife. Many people from all over the world visit South Africa because of our extensive coastline and beaches and to see lions, cheetahs, elephants and giraffes in their natural environment. It is therefore extremely important that we take care of these renewable resources and that they are managed appropriately to enable future generations to benefit from them as well.

Rent: *"Rent is that portion of the produce of earth which is paid to the landlord for use of the original and indestructible powers of the soil."* David Ricardo (1772-1823).

In everyday usage, the word, rent, has different meanings. Many people rent their houses, offices and shops. Included in this rent is the rent for both the land on which the house or office or shop is situated, as well as for the building itself. The concept of rent is also used in connection with the rental of a car or computer.

In economics, when the concept of rent is used in the field of natural resources, it refers to the payment made to the owners of natural resources for the use of those natural resources in the process of production. It excludes the rental payments for improvements on the land, such as a building or factory. Rent is typically the smallest of the four factor payments.

Repo (repurchase agreement): A repo may be defined as the sale of an existing security (financial assets) at an agreed price, coupled with an agreement by the seller to purchase (buy back) the same security on a specified future date (normally seven days later) at the same price. The maturity value of the repo is determined in the initial agreement and consists of the price plus an agreed amount of interest. The interest represents the cost of obtaining funds for a week and is referred to as the repo rate.

The rate at which the SARB grants accommodation to the banks is referred to as the repo rate.

Resources: Resources are scarce. There are three types of resources, namely natural resources (such as agricultural land, minerals and fishing resources); human resources (such as labour); and man-made resources (such as machines).

Rivalry in consumption: Rivalry in consumption implies that one person's consumption of a good or service reduces its availability to other persons. This is a characteristic of private goods. In contrast, public goods are characterised by non-rivalry in consumption.

Role-players in economic policy: Since economic policy is defined as government actions designed to influence economic behaviour, with the ultimate aim of achieving certain goals or objectives, it follows that government is responsible for formulating and implementing economic policy. But in democratic societies, governments are elected by the voting public and they are also subject to pressures exerted by various interest groups. Moreover, government consists of both politicians and bureaucrats (public employees). A wide range of individuals and groups, each with his or her own motives and agendas, can therefore have an impact on policy decisions.

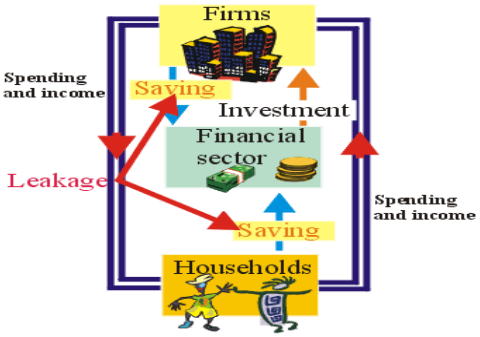
Three sets of role-payers who are important in the economic policy process are politicians, bureaucrats and interest groups (businesses, organised labour, non-governmental organisations).

RSA Retail Bond: The South African government created the RSA Retail Bond to encourage South Africans to save and to provide the state with an additional source of finance. Retail bonds are aimed at those households that are excluded from saving due to low interest rates, high costs and lack of access to savings accounts and banking facilities. Only individuals may purchase retail bonds. Companies, trusts, investment organisations and stokvels are prohibited from investing in retail bonds.

The interest rate on retail bonds is set on the date of purchase. The rate is fixed for the term of the investment. Interest earned on a retail bond is paid out twice a year – on 31 March or 30 September. Investors in retail bonds have the option to reinvest the interest at the rate that prevailed when the bond was bought. Retail bonds have a maturity date of two, three or five years. The first retail bonds were issued in March 2004.

Savings (S): Savings constitute that part of income that is not spent on goods and services. Both firms and households save.

In the circular flow model of income and spending, savings represents a leakage from the circular flow.



Scale of preferences: It is a list that reflects, in order of importance, the taste of a consumer.

Scarcity: Scarcity exists because there are insufficient resources to meet all our needs and wants. Only a finite amount of resources exists – both human and non-human. Nature does not freely provide as much of everything as people want.

Resources or factors of production are scarceInputs used in the production of goods and services:

1. Land: Original fertility and mineral deposits, topography, climate, water and vegetation.
2. Labour: The contribution of human mental effort or humans who work (thinking and doing).
3. Capital: All manufactured resources, including buildings, equipment, machines and improvements to land.
4. Entrepreneurship: A human activity of raising capital, organising, managing, assembling other factors of production and making basic business policy decisions.

Seasonal unemployment: Seasonal unemployment arises because certain occupations require workers for only a part of each year. It is in some cases related to the weather or the calendar and very specific steps have to be taken to accommodate workers during the periods when they do not have employment.

Secondary sector: The secondary sector is the manufacturing part of the economy in which raw materials and other inputs are used to produce other goods. These include the beneficiation of primary products (e.g. canning fruit and vegetables and processing minerals into mineral products such as steel) and the manufacturing of consumer goods (such as machinery, buildings, roads and railways).

Sectoral economic goals: Sectoral economic goals include:

- The development of particular *economic sectors*, such as agriculture, tourism, manufacturing, construction, mining or transport; or *social sectors,* such as housing, education or health.
- Cross-sectoral development, such as the promotion of foreign trade with particular countries or groups of countries, or multi-sectoral development of specific geographical regions (e.g. the Eastern Cape, Northwest Province or the Maputo corridor).

Services: Services are intangible things, such medical services, legal services, financial services, the services provided by teachers and the services provided by public servants.

Shifts in aggregate demand: A shift of the AD curve occurs when any of the non-price factors, which determine aggregate expenditure (demand), changes. These factors are things such as autonomous consumption (C), investment spending (I), government spending (G), taxes (T) and the interest rate (i).

Shifts in aggregate supply: The AS curve is derived at for a given set of factor prices (rent, wages and salaries, interest and profit) and prices of imported capital and intermediate goods, as well as for a given level of productivity. A change in any of these factors causes a shift of the AS curve.

Shortage: Excess quantity demanded or insufficient quantity supplied. It is the difference between the quantity demanded and supplied at a specific price below the market clearing price.

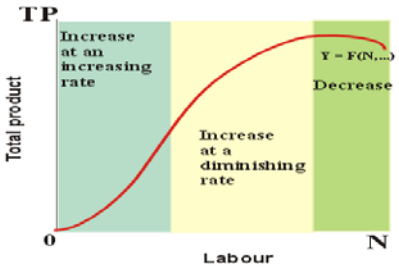
Short-run equilibrium for a perfect competitive firm: In the short run, a firm's economic profit may be positive, zero or negative.

Short-run production function

A short run is defined as the period during which at least one of the inputs are fixed.

The short-run production function describes the maximum quantity of a good or service that can be produced by a set of inputs, assuming that at least one of the inputs is fixed at some level.

In the long run, all inputs are variable.



Shut-down rule: Whether or not a firm should continue production will depend on the level of average revenue (AR, relative to the firm's average variable cost (AVC). If average revenue is equal to, or greater than average variable cost, the firm should continue operations. If, however, average revenue is smaller than average variable cost, the firm should consider suspending operations.

Social and political costs of inflation: Apart from the distribution and economic effects, inflation also has social and political consequences, which can undermine the performance of the economy.

Social sciences: Social sciences study the behaviour of human beings, both individually and as groups. Examples of social sciences are Economics, Sociology, Social Psychology, Anthropology and Political Science.

Social welfare: Social welfare may be defined as some combination of individual utilities. Exactly how these utilities should be combined depends on the value system of the society, including its sense of justice. Social welfare is an expression of subjective value.

Social welfare function: A social welfare function may be defined as a social utility function, containing the utility functions of the individuals in a society. It can be thought of as a *qualitative* expression of the factors that determine the subjective sense of well-being of a society as a whole. Social welfare, like individuals' utilities, is determined by more factors than just income.

South African labour market features: The South African labour market is characterised by:

- Mass unemployment
- Widespread poverty
- Inequality
- Low levels of productivity.
- Conflict in the workplace
- Inadequate managerial and technical skills to cope with international competition.

South African Reserve Bank: The South African Reserve Bank (SARB) is the central bank of South Africa. It was established in 1921 in terms of a special Act of Parliament. It regards its primary goal in the South African economic system as "the achievement and maintenance of financial stability".

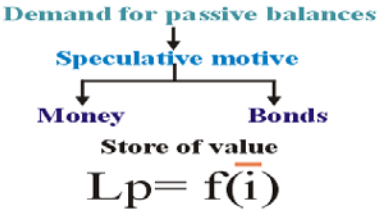
The Reserve Bank assumes responsibility for the following:

1. Formulating and implementing monetary policy in such a way that the primary goal of the Reserve Bank will be achieved in the interest of the entire community that it serves.
2. Ensuring that the South African money, banking and financial system as a whole is sound, meets the requirements of the community and keeps abreast of international developments.
3. Assisting the South African government, as well as other members of the economic community of Southern Africa with the formulation and implementation of macroeconomic policy.
4. Informing the South African community and all interested stakeholders abroad about monetary policy specifically, and the South African economic situation in general.

Specific tariff: A specific tariff is a fixed amount per unit of an imported commodity. A specific tariff is relatively simple to apply and administer, especially with regard to standardised commodities. It has the disadvantage that the degree of protection it offers domestic producers varies inversely to the price of an imported item. For example, a specific tariff of R10 000 on motor vehicles will discourage the import of cheap Italian cars, such as the Uno, more than that of a luxury Maserati. During times of rising import prices, a specific tariff provides domestic manufacturers with more protection during a business recession when cheaper products are being purchased.

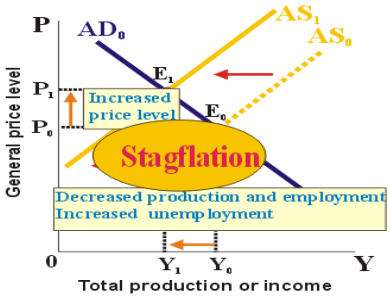
Speculative demand for money: The speculative demand for money is related to the need to hold money passively in order to take advantage of changes in the price of bonds, and is referred to as passive balances.

The demand for passive balances (Lp) is based on the speculative motive for holding real money balances which, in turn, relates to the function of money as a store of value. The demand for passive balances depends on the interest rate and interest rate expectations. A negative relationship exists between the demand for passive balances and the interest rate.



Stable equilibrium: It is a situation in which a shock disturbs the prevailing equilibrium between supply and demand. Normally, there will be self-corrective forces that automatically cause the disequilibrium to eventually return to an equilibrium.

Stagflation: Stagflation occurs when an increase in the cost of production not only results in higher prices, but also in lower production, income and employment, as well as in higher unemployment. This was a term coined in the 1970s for the twin economic problems of stagnation and inflation.



Stages of economic growth: Rostow distinguished five stages of economic growth and maintained that every country could be classified according to these stages. They are:

- Traditional society
- The preconditions for take-off
- The take-off
- The drive to maturity
- High mass consumption

Standard of deferred payments: The money function in which money is used as a standard benchmark for specifying future payments for current purchases – i.e. buying now and paying later.

Statutory (or legal) incidence: Statutory tax incidence refers to the legal liability to pay the tax over to the revenue authorities.

Government can specify who is responsible for paying a tax to the South African Revenue Services – that is the statutory or legal incidence of the tax. But the effective incidence or burden of a tax could fall partially or completely on somebody else.

Stocks: Stocks or stock variables are measured at a particular point in time. A stock variable has no time dimension and can only be measured at a specific moment. Examples of stock variables are wealth, assets, liabilities, capital, population, unemployment, etc.

Stocks and flows are related. Stocks can only change as a result of flows.

Store of value: Money is used to hold wealth.

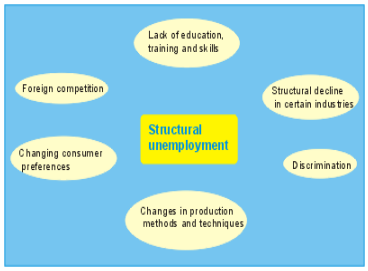
Strict definition of unemployment: The strict definition of unemployment, used by Stats SA, is as follows:

Unemployed persons are those persons who, being 15 years and older,

- are not in paid employment or self-employment;
- were available for paid employment or self-employment during the seven days preceding the interview; and
- who took specific steps during the four weeks preceding the interview to find employment or create self-employment.

Strict egalitarianism: The principle of strict egalitarianism states that every person should have the same level of material goods and services. Adherents to this view justify this position by claiming that it is the best way to give effect to the notion that all people are owed equal respect.

Structural unemployment: Structural unemployment occurs when there is a mismatch between workers' qualifications and job requirements, or when jobs disappear due to structural changes in the economy. Structural unemployment is usually confined to specific industries, sectors or categories of workers.



Structuralist view of the business cycle: The structuralist view (or the institutionalist view) denies or downgrades the notion of natural economic trends (or forces) in market economies, and rejects both the notion of inherent economic stability and the notion of inherent economic (or cyclical) instability. Instead, the course of economic activity is viewed as the random result of various structural or institutional factors, which often have their origin outside the narrow economic sphere.

Adherents to this view also tend to focus on *exogenous* factors, but suggest that random fluctuations, rather than natural stability or natural cyclical patterns, represent the real nature of economic activity. The notion of inherent economic stability is rejected out of hand, while the notion of inherent cyclical instability is often derogatorily referred to as up and down economics.

The main policy conclusion of this view is that the emphasis of economic policy should be on structural policies rather than on stabilisation policies, the exact content of which will vary from time to time, depending on the nature and performance of the existing political, economic and other institutions (including the market). In certain circumstances, even direct control measures (e.g. interest rate controls, exchange rate controls, wage controls and price controls) might be warranted.

Structuralists' view of the labour market: Structuralists argue that a proper way to address unemployment requires more than expansionary fiscal policies to increase demand; and that complementary microeconomic labour market interventions, such as those listed earlier, are also called for. This approach reflects the structuralist view that even well-conceived policies (such as those advocated by the Keynesians) will achieve little, unless structural distortions in the economy are simultaneously addressed.

Substitutes: A substitute is a good that can be used in the place of another good. Examples include butter and margarine, beef and mutton, tea and coffee, rice and wheat, cold drinks and fruit juice, hamburgers and "boerewors" rolls.

An increase in the price of a substitute (beef) will *ceteris paribus* lead to an increase in the demand for the good concerned (mutton), and the demand curve for the good (mutton) shifts to the right. In other words, it is now relatively cheaper to use mutton instead of beef.

Supply: Supply can be defined as the quantities of a good or service that suppliers plan to sell at each possible price during a specific period.

Supply curve: A supply curve is a graphic depiction of a supply schedule. It indicates how the **quantity supplied** of some product during a specified period of time will change as the **price of that product** changes, keeping all other determinants of quantity supplied constant.

The rising part of a firm's marginal cost curve above the minimum of average variable cost (AVC), can be regarded as the firm's supply curve.

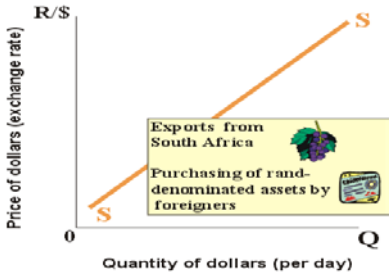
Supply equation: The supply equation is a shorthand way of expressing the relationship between the quantity of a good supplied and its price, *ceteris paribus.* It is written as:

$$Q_s = f(P_x, P_g, P_f, P_e, T_y, N, ...)$$

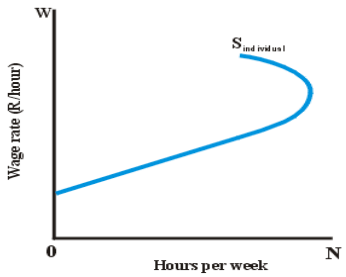
where Qs = the quantity supplied
f = depends on (or is a function of)
P_x = the price of the product
P_g = the price of alternative products
P_f = the prices of factors of production (cost of production)
P_e = expected future prices of the product
T_y = technology
N = number of producers
... = other factors

Supply of foreign exchange (e.g. dollars): The supply of dollars comes from two sources:

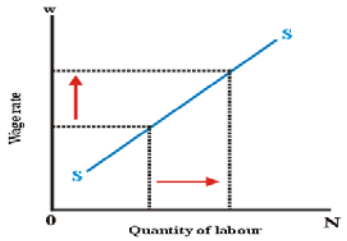
- South African exporters export goods and services and are paid in dollars for their exports.
- Foreign holders of dollars who purchase South African assets (shares on the Johannesburg Securities Exchange or government stock).



Supply of labour: Behind the individual supply of labour lies the substitution and income effect. Each individual has to decide how to divide his or her time between work and leisure. If the individual decides to work more hours, he or she will receive more income with which more goods and services can be purchased. Working more hours, however, implies that the individual has less time available for leisure. The individual labour supply decision therefore involves a trade-off between working hours and leisure.



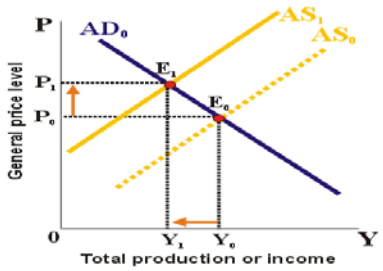
The market supply curve for labour has a positive slope, indicating that, as the wage rate increases, the quantity of labour supplied will increase, as more people will enter the labour market and supply their services.



Supply schedule: The supply schedule is a table that indicates the quantities of a good supplied at each possible price, *ceteris paribus*. The following is an example of a supply schedule for cold drinks.

Price (rands)	Quantity supplied (millions of litres per month)
1	450
2	500
3	550
4	600
5	650

Supply shock: A supply shock is a disturbance in the economy of which the first impact is to shift the supply curve upwards. An example of a supply shock is an increase in the oil price.



Supply-side economics: Supply-side economics was all the rage in the USA in 1981, the first year of the Reagan administration. It was the guiding principle behind the tax cuts decision in August of that year, and served as a justification for the optimistic scenario presented by the administration's first budget. The budget predicted that inflation could be reduced without creating a recession. It also predicted that the tax cuts would lead to a rapid increase in growth, and would therefore produce more rather than less tax revenue for the government. Although all the supply-side economists strongly emphasise the incentive effects of taxation in determining the behaviour of the economy, there were initially actually two separate supply-side groups.

The mainstream group, which included economistsThere are few economists who believe incentives are such as Martin Feldstein and Michael Boskin, stressedunimportant. But it was *the radical fringe* of the supply-side the importance of tax incentives in promoting growth bygroup who received most of the publicity. This group made affecting savings, investment and the supply of labour.exaggerated claims regarding the effects of tax cuts on They also emphasised the effects of social security onsavings, investment and labour supply, and regarding the savings and on retirement decisions and the removal ofeffects of tax cuts on total government revenue from taxation. constraints on the efficient functioning of domesticAmong the leaders of the radical fringe were Arthur Laffer and product and factor markets, thereby alleviatingGeorge Gilder. The radical fringe argued that tax rate bottlenecks in the supply and productivity of factors ofreductions would have such a powerful effect on work effort production. The mainstream group had been presentingthat total tax revenues would rise and that the supply-side the results of its research in scholarly journals for manyeffects of the tax cuts would have a powerful effect in years and was, and still is influential and active in thereducing inflation by increasing the growth rate of output. economics profession.

Supply-side industrial policies: Supply-side industrial policies aim to improve the availability of productive factors to firms and the efficiency with which such factors are used.

Surplus: Excess quantity supplied or insufficient quantity demanded. It is the difference between the quantity supplied and demanded at a price above the market clearing price.

Sustainable development: This terms was first coined in the Brundtland Report and refers to "development seeking to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. It aims at assuring the on-going productivity of exploitable natural resources and conserving all species of fauna and flora".

It recognises that, given a particular resource base, there are some utilisation rates that cannot be sustained. In other words, when we are trying to solve the economic problem of satisfying human wants we cannot do so at all costs by ignoring the impact on future generations. The result of continuing extraction may be better in the short run but, in the long run it will be disastrous as we will run out of natural resources. We therefore need to recognise the inter-temporal dimension to economics. In other words, we must consider the economic problem, not only for the current generation, but for future generations as well. We must not limit the options for future generations.

Tax burden: The tax burden is the overall level of taxation.

In South Africa, there has been an almost monotonic increase in tax revenue of general government as a percentage of GDP since the early 1970s. This ratio did not decline during periods of fiscal restraint, characterised by declines in the ratio of government expenditure to GDP. This may be largely ascribed to the declared policy of reducing the budget deficit (i.e. the deficit before borrowing). In recent years, improved tax collection has also contributed significantly to increases in tax revenue, despite sporadic reductions in certain tax rates.

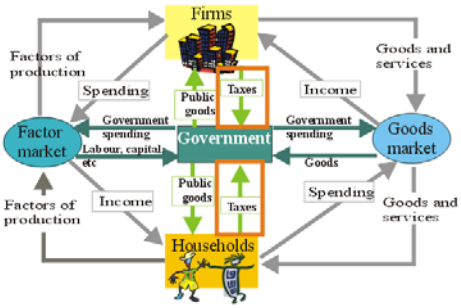
Tax incentives: Tax incentives represent government assistance through the tax system and are often regarded as a form of special pleading, a preferential treatment to a particular group, enterprise or objective. Examples of tax incentives are:

- Wage incentives (e.g. tax rebates linked to employment) to stimulate employment (or to reduce unemployment).
- Investment allowances or accelerated depreciation granted to firms to stimulate fixed investment (capital formation) and thereby enhancing economic growth.
- Lower taxes on certain goods and services (e.g. basic foodstuffs) to alleviate poverty.

Tax incidence: Those who ultimately bear the burden of the tax are often different from those who pay the tax, since the cost of the tax can be passed on. Economic (or effective) tax incidence refers to the point where the burden of the tax is eventually borne. For instance, the imposition of a specific tax on a product may cause firms to increase the price by the amount of tax and shift some of the burden of the tax to consumers.

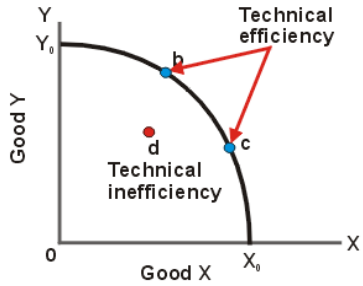
The effective incidence or burden of a tax cannot be established by determining who actually hands over the money to government.

Taxes (T): Taxes are compulsory payments to government and are the largest source of government revenue.
In the circular model of income and spending, taxes constitute a leakage.



In the simple Keynesian model, taxes impact indirectly on aggregate demand and the equilibrium level of income, due to the effect it has on the income of households.

Technical efficiency: Technical efficiency or X-efficiency is achieved when existing resources are used in the most efficient manner – that is when the maximum possible output is obtained with a given set of resources.



Technologically unemployed: Changes in production methods and techniques might cause a drop in the demand for people with particular qualifications or skills, due to their replacement by machines. People who are replaced by labour-saving machines are sometimes classified as technologically unemployed.

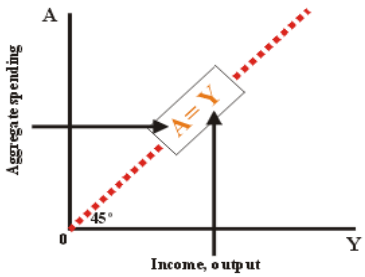
Technology: Technology is sometimes identified as the fifth factor of production. At any given time, a society has a certain amount of knowledge about the ways in which goods can be produced. When new knowledge is discovered and put into practice, more goods and services can be produced with a given amount of natural resources, labour, capital and entrepreneurship. If this happens, we say that technology has improved.

Terms of trade: The weighted average of a country's export prices relative to its import prices, expressed as an index value. This relationship is referred to as the terms of trade, which is normally expressed as an index.

$$\text{Terms of trade} = \frac{\text{export price index}}{\text{import price index}} \times 100$$

Tertiary sector: The tertiary sector comprises the services and trade sections of the economy. It is often referred to as the service sector. Activities in the tertiary sector include trade, transport, communication and education, as well as financial, personal and government services.

The 45° line: A 45-degree line running through the origin represents all the points at which what is measured on the vertical axis (in this case aggregate demand A) is equal to that which is measured on the horizontal axis (in this case total income and output).

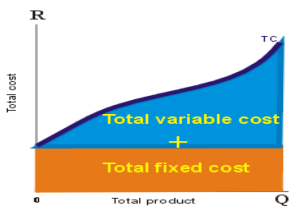


Theory of the firm: The theory of the behaviour of firms is referred to as the theory of the firm. The neo-classical version of this theory is based on the assumption that all firms seek to maximise profits.

Total (or accounting) profit: Total or accounting profit is the difference between total revenue from the sale of the firm's product and total explicit costs.

Total cost (TC): The total cost of production (TC) consists of the total fixed cost (TFC) plus the total variable cost (TVC):

Total cost = fixed cost + variable cost
TC = FC + VC

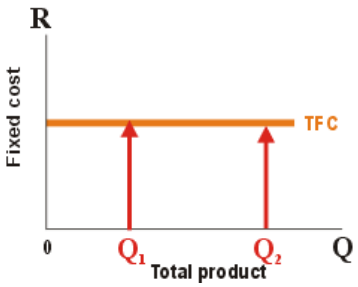


Total fixed cost (TFC)

Total fixed cost is the cost that remains constant, irrespective of the quantity of output produced. It is also referred to as overhead costs. Even if no output is produced, this cost must be borne.

In the short run, some factors of production cannot be varied and they are known as fixed factors, and the costs associated with them as fixed costs.

Examples of fixed cost are, for instance, the building cost of a factory, rent on buildings, interest payments on past borrowings and the cost of machines.

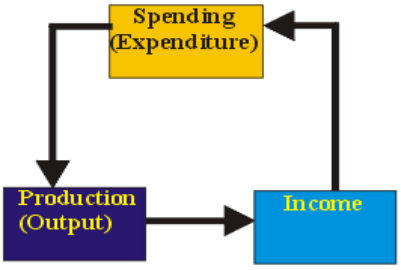


Total product (TP): The total product (TP) is the total physical output produced by a firm.

Total production (or output): Total production is the production of all goods and services in the economy. The determination of the level of total output is an important issue in macroeconomics.

According to the simple Keynesian model and the IS-LM model, the level of total output is mainly determined by aggregate spending (demand). In the AD-AS model, the interaction between aggregate demand and aggregate supply determines the level of output.

Total production, total income and total spending in the economy: A continuous circular flow between production, income and spending can be distinguished in the economy.



Total revenue (TR)

Total revenue is the sum of the payments that the firm receives from the sale of its output. It is the value of total sales and is equal to the price (P) of its product, multiplied by the quantity sold (Q).

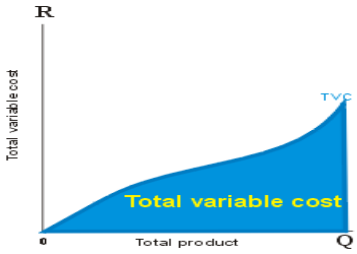
Total revenue

$$TR = P \times Q$$

Total spending (expenditure): Total spending (expenditure) in the economy comprises spending by households, firms, government and the foreign sector. In symbols: A = C + I + G + (X -Z).

Total utility: Total utility is the sum of all the marginal utilities and represent the total satisfaction of consuming a certain amount of a good or service.

Total variable cost (TVC): Total variable cost (TVC) is the cost that changes when total output changes and it represents the cost of the variable inputs. It is also known as direct costs, prime costs or avoidable costs. In the short run, these are the costs associated with the variable factor of production.



Trade balance: The difference between merchandise exports (including net gold exports) and merchandise imports is referred to as the trade balance.

Trade-off principle: That is when one thing is sacrificed to achieve something else. The best known example in macroeconomics is the Phillips curve, which indicates that unemployment and inflation could be traded off against each other. In other words, a lower inflation rate could be achieved by trading it off against, or exchanging it for greater unemployment.

The resource constraint imposed by the expenditure ceiling of an annual budget also leads to a trade-off between competing goals. The total need for budgetary allocations always exceeds the available funds. A choice must therefore be made between competing goals. For instance, in the case of a health budget, it might be between an increase in anti-retroviral medication or increased primary healthcare.

Transaction costs: All the costs associated with exchanging, including the informational costs of finding out the price and quality, service record, durability, etc. of a product, plus the cost of contracting and enforcing that contract.

Transactions motive: The transaction demand for money arises out of the function of money as a medium of exchange. Individuals, households and firms hold money balances in order to do transactions. The need for transaction balances arises from the lag between receipts and the payment of money. For example, wages and salaries are paid weekly or monthly, but payments for goods and services are made each day.

Transfer payments: Transfer payments are the transfer of income and expenditure from certain individuals and groups (e.g. the wealthy) to other individuals and groups (e.g. the poor). Examples of transfer payments are old-age pensions, child support grants, disability grants and various subsidies.

Wage: Economists usually use the term, wage, to refer to the basic amount, excluding any benefits or allowances, that are paid in return for the use of labour in production.

Wage rate: The price of labour is usually referred to as the wage rate – that is the amount of money to be paid to a worker for working for a specified period or for performing a specified number of tasks.

Wants: Wants are human desires for goods and services.

Wealth (vs money): Wealth consists of assets that have been accumulated over time. Wealth can take many forms, such as fixed property, shares, oriental carpets or paintings. It can also take the form of money. Money is used as a unit of account to measure wealth. It is possible to be very wealthy without having money.

Weighted marginal utility: Weighted marginal utility is the marginal utility per unit, divided by the price per unit (MU/P).

In terms of weighted marginal utilities, the consumer is in equilibrium when he or she has allocated his or her income to different goods and services in such a way that the weighted marginal utilities of the different goods and services are equal. In other words, the last rand spent on each product yields the same amount of extra (marginal) utility. This is also known as Gossen's Second Law.

Unit 2: Principles of Economics

The study of economics is unified by several central ideas. These ideas are reflected in the principles of economics. These are the basic methods and concepts that economists use when doing economics, hence economic analyses.

The following are the ten basic concepts that constitute and shape the analyses and the thinking of economists. The principles are classified into three groups, namely:

- How people make decisions
- How the economy works as a whole
- How people interact

How people make decisions

1. People face trade-offs: Choice

   "You can't have it all, so people choose." We always want more than we can get and productive resources (human, natural and capital) are always limited. Therefore, due to this major economic problem of scarcity, we usually choose the alternative that provides the most benefits at the lowest cost. To get one thing, we usually have to sacrifice another thing.

   For example:
   - Leisure time vs preparation for examination or vs work.
   - Celebrity vs privacy.
   - Food vs clothing.
   - National security vs civil liberties.
   - Efficiency vs equity (or fairness).

   To get one thing, you have to sacrifice something else. Making decisions requires trading off one goal against another.

2. Opportunity cost

   All choices involve costs. Opportunity cost is the next best alternative that you sacrifice when you make a choice. When we choose one thing, we refuse something else at the same time. The cost of something is what you sacrifice (forgo) to get it. Decisions require comparing costs and the benefits of alternatives.

   Opportunity cost:
   - Whether to go to college or to go out and work?
   - Whether to study or go out on a date?
   - Whether to go to class or sleep in?

   Compare the benefits of a choice with the costs of choosing it.

   The cost of something is what you sacrifice to get it. Decision-makers have to consider both the obvious and implicit costs of their actions.

3. Rational people think at the margin

   The consequences of choices lie in the future: Economists believe that the cost and benefits of decision-making come to the fore in the future, since it is only the future that we can influence. Sometimes our choices can lead to unintended consequences:

   - Marginal changes are small incremental changes of adjustment to an existing plan of action.
   - Studying: Consider the additional costs and the additional benefits – that is the *marginal* costs and benefits.
   - How much should an airline charge for stand-by passengers?
     - Well, what is the marginal (additional) cost per such passenger?

- (Of course, the airline might want to charge more than its marginal cost per seat, but never less.)

Rational people think at the margin. A rational decision-maker takes action if, and only if the marginal benefit of the action exceeds the marginal cost.

4. People respond to incentives

People respond to incentives in predictable ways. Incentives are actions, awards or rewards that determine the choices people make. Incentives can be positive or negative. When incentives change, people change their behaviour in predictable ways:

- Such as prices and income. But others are more subtle.
  - An amnesty for illegal workers?
  - Your reputation as an effective committee member?
  - The effect of compulsory seat-belt laws?
- Marginal changes in costs or benefits motivate people to respond. The decision to choose one alternative over another takes place when that alternative's marginal benefits *exceed* its marginal costs!
- Behaviour changes when costs or benefits change.

How the economy works as a whole

5. Voluntary trade creates wealth

People specialise in the production of certain goods and services, because they expect to gain from it. People trade what they produce with other people when they think they can gain something from the exchange. Some benefits of voluntary trade include higher standards of living and broader choices of goods and services.

Trade can result in everyone being better off:

1. Two people get together (in an Edgars store) and *voluntarily* exchange: One forgoes money, the other sacrifices a new pair of shoes. Both are better off.
2. The shoe-seller is happy to get the money and the wearer to get the new shoes.
3. People gain from their ability to trade with one another.
4. Competition results in gains from trading.
5. Trade allows people to specialise in what they do best.

Trade can result in everyone being better off. Trade allows each person to specialise in the activities he or she does best. By trading with others, people can buy a greater variety of goods or services.

6. Markets are a good way to organise economic activity

In a *market economy*, inputs (land, labour, capital, materials) and outputs (goods and services) are allocated by individuals through markets, not by government planners

.

- Households decide what to buy and who to work for.
- Firms decide who to hire and what to produce.

Households and firms that interact in market economies act as if they were guided by an "invisible hand" that guides the market to allocate resources efficiently. The opposite of this is economic activity that is organised by a central planner within government.

7. Governments can sometimes improve market outcomes

When a market fails to allocate resources efficiently, government can change the outcome through public policy. Examples are regulations against monopolies and pollution. For example, *market failure*, such as over-fishing

and when a market doesn't allocate efficiently. *Externalities* occur when your actions have an impact on other people – pollution is an example of this.

When *market power* allows a single firm or individual to influence market prices, and when the market fails (breaks down), government can often intervene to promote efficiency and equity.

How people interact

8. A country's standard of living depends on its ability to produce goods and services

Countries whose workers produce a large quantity of goods and services per unit of time, enjoy a high standard of living. Similarly, as a nation's productivity grows, so does its average income.

What explains the differences in countries' living standards? Different levels of productivity and the average quantity of goods and services produced per working hour.

Higher productivity allows higher consumption of all kinds of goods and services, including healthcare and environmental amenity, as well as cars, travel, food and housing. *Productivity* is the amount of goods and services produced during each hour of a worker's time. *Higher productivity = a higher standard of living.*

9. When governments print too much money, prices rise

When a government creates large quantities of the nation's money, the value of the money falls. As a result, prices increase, requiring more of the same money to buy goods and services.

Inflation (remember that?) is an increase in the overall level of prices in the economy.

- One cause of inflation is the growth in the quantity of money.
- When the government creates large quantities of money, the value of the money falls.

10. Societies face a short-term trade-off between inflation and unemployment

Reducing inflation often causes a temporary rise in unemployment. This trade-off is crucial for understanding the short-run effects of changes in taxes, government spending and monetary policy.

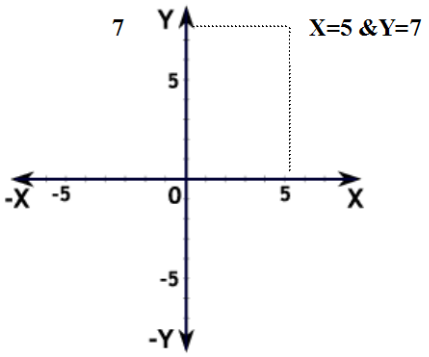
When Inflation goes down, unemployment *goes up.* This is a short-run trade-off!

Unit 3: Constructing and Interpreting Graphs

What is a graph? A graph can be used to render data in pictorial form. It expresses the relationship between two variables and consists of a space defined by two axes, with each axis containing a scale on which the data can be oriented. A graph depicts only the relationship between the variables indicated on the axes. There are only three things that a variable can do, namely increase, decrease or remain constant. Graphs, though a mathematical tool, play an important role in economics by geometrically representing economic variables, such as prices, quantity, interest rates, income, consumption, etc.

Horizontal and vertical axes

Values of X are measured along the **horizontal axis** and are positive and increasing as we move to the right of the origin (centre), and are negative and decreasing as we move to the left. Values of Y are measured along the **vertical axis** and are positive and increasing as we move up from the origin, and negative and decreasing as we move downward from the origin. At the centre, both X and Y are equal to zero. We do not have to use X and Y as our variable names; they could be anything. In economics they are often price (P) and quantity (Q).



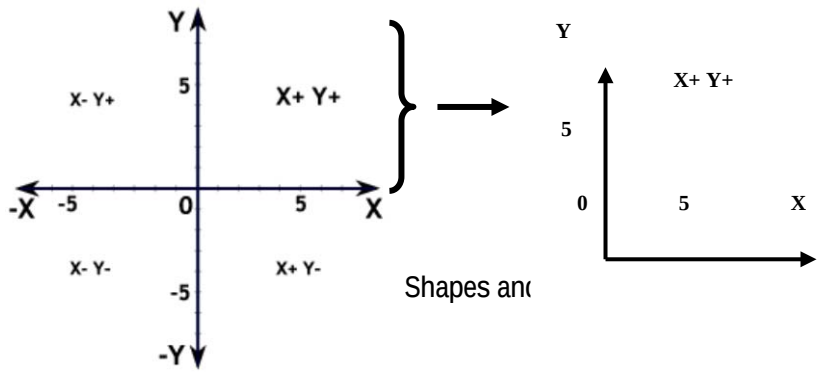
Graph: To the right we plot the point where X = 5 and Y 7. We move to the right of the point where X = 0 by 5 units. Then we move up from the point where Y = 0 by 7 units. We then find where a vertical line from the point where X = 5 and a horizontal line from the point where Y = 7 intersect, and this is our point.

The "origin" refers to the intersection of the coordinate axes in the Cartesian coordinate system. (In mathematics, the **Cartesian coordinate system** is used to determine each point uniquely in a plane via two numbers, usually referred to as the *x coordinate* and the *y coordinate* of the point.) The value of both variables is zero at the origin.

Positive values

Most of the relationships studied in economics only consider the positive values of the variables of interest. Such graphs are so common that economists often only show the **upper right** portion of the Cartesian coordinate system when illustrating these relationships.

To the right we show this portion of the coordinate system highlighted **on the right**. Most of the graphs will show only this portion of the coordinate system.



Shapes an

Economics is the study of the relationship between wants and resources, between price and quantity, between consumption and income, etc. Many of these relationships can be presented graphically. Graphs are a handy tool to quickly summarise the relationships between two variables. They may come in any number of different shapes. We have graphs of which the functions are straight lines and these are referred to as a linear relationship. Curved functions are also common. Linear relationships can either be positive or negative.

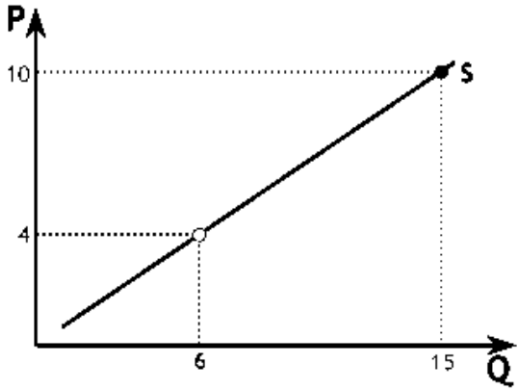
If the two variables increase or decrease together, the relationship is said to be *direct* and the graph of the relationship will be an upward sloping line. If the two variables move in opposite directions, the relationship is said to be *inverse* and the graph of the relationship will be a downward sloping line.

A linear function (i.e. a straight-line graph) has a slope that does not change as one moves from one point on it to another. Curved functions obviously have slopes that change. What the slope of a function actually tells us, is something about the way in which the variables in the graph are related. More in particular, it tells us how much of a change we will get in the dependent variable (the one on the vertical axis) if there is a small change in the independent variable (on the horizontal axis).

Positive linear relationship: supply curve

The graph, to the right, shows a positive linear relationship between two variables, P and Q. Values of P are indicated on the vertical axis and values of Q are indicated on the horizontal axis. The relationship shown is referred to as a positive relationship, because larger values of P are associated with larger values of Q. Where P = 4 we can see that Q = 6 and where P = 10 we see that Q = 15. The relationship is termed, linear, because its graph constitutes a straight line.

This particular graph constitutes a graph of a supply curve, which is why it is labelled S. It shows the relationship between market price (P) and quantity supplied (Q). Even though it's a straight line, we refer to it as it a "curve", to remind us that sometimes supply is not graphed with a straight line.

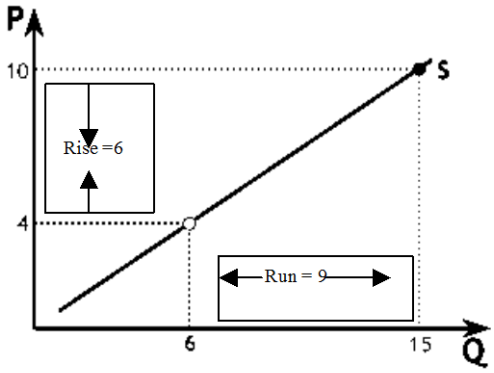


Linear relationship: slope

The slope of a linear relationship is the same everywhere, and captures the constant rate of change of one variable as a result of the change in the other variable. A supply curve tells us the quantity supplied at any given price.

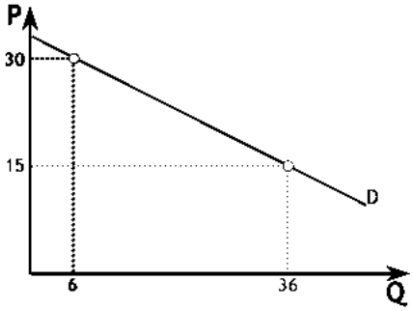
The slope is the change in the variable on the vertical axis, divided by the change in the variable on the horizontal axis, or the "rise over the run". On our graph, to the right, when P increases from 4 to 10, then Q increases from 6 to 15. The "rise" = 6, while the "run" = 9, so the slope is 6 ÷ 9 = 2/3.

The constant slope of a linear relationship means that we know what quantity will be supplied at any price. In this case, if the price increases to 20, we know that 30 units will be supplied, etc. In fact, it turns out that the relationship we have drawn can be represented by the simple equation: Q = 1.5 x P. It's actually more correct to write "desired quantity supplied", but for the sake of simplicity we often only write "quantity supplied".



Negative linear relationship: demand curve

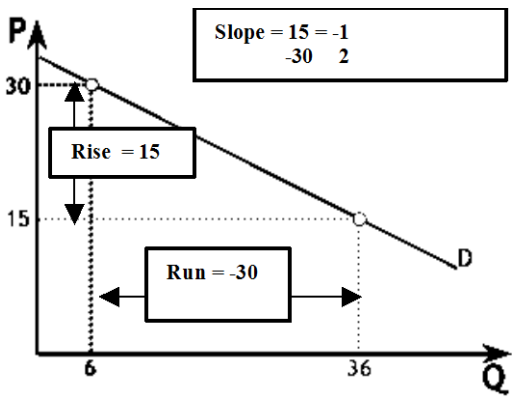
The graph, to the right, shows a negative linear relationship, or an inverse linear relationship. It is termed negative or inverse because larger values of P are associated with smaller values of Q. Another way of stating this is that smaller values of P are associated with larger values of Q. We illustrate this with two values to the right of the graph. When P = 30, the value of Q is only 6, but when P falls to 15, then Q increases to 36; so the relationship is an inverse or negative relationship. As before, it's referred to as a linear relationship because its graph is a straight line.



The curve, to the right ,is a demand curve – i.e. the quantity demanded for any given price. As we noted earlier, this is a negative or an inverse relationship, which is why the curve slopes downward to the right, and because the relationship is linear, the slope is the same everywhere.

As we saw earlier, we can compute the slope by the change in the variable on the vertical axis, divided by the change in the variable on the horizontal axis, or the "rise over the run". On our graph, to the right, when P increases from 15 to 30, then Q decreases from 36 to 6. The "rise" = 15, while the "run" = -30, so the slope is 15 ÷ -30 = -1/2.

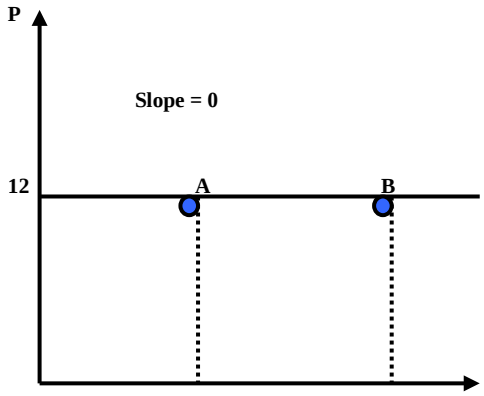
This constant, negative slope tells us that the quantity demanded will fall by two units for every one unit increase in price. So, if the price is measured in rands, an increase in price of R1.00 will cause the quantity demanded to fall by R2.00. This particular relationship can be expressed simply by using the equation: Q = 66 - 2P. It's more precise to write "desired quantity demanded", but it is often shortened to "quantity demanded".



Two special kinds of linear relationships

1. Straight horizontal linear relationship

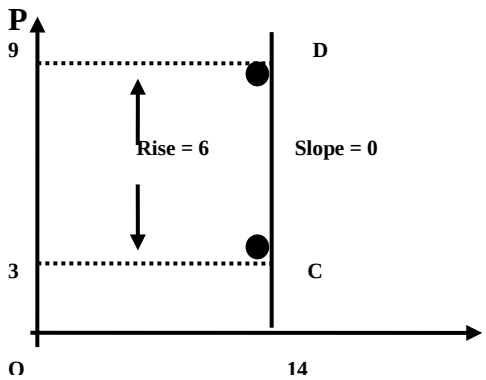
Before we leave linear relationships, we need to consider two special kinds of linear relationships that we encounter in economics from time to time. To the right, we show a graph of a linear relationship that is a straight, horizontal line. Such a line has a slope of zero. As we move to the right from point A to point B, then Q increases from 10 to 24, but P remains unchanged at 12. So, the rise is zero, even though the run is 14. Therefore, with rise ÷ run the slope = 0. This graph shows that P and Q are not related. P remains fixed at a value of 12, regardless of the value of Q.



2. Straight vertical linear relationship

The relationship, shown to the right, is linear, but it is perfectly vertical. We say that the slope of a vertical line is infinite. As shown to the right, Q is 14, regardless of the value of P. As we move from point C to point D, the value of P increases from 3 to 9, but Q remains at 14. In this case, the rise is 6 but the run is zero. Using our formula for slope, rise ÷ run, we get 6 ÷ 0. In other words, the slope is infinite.

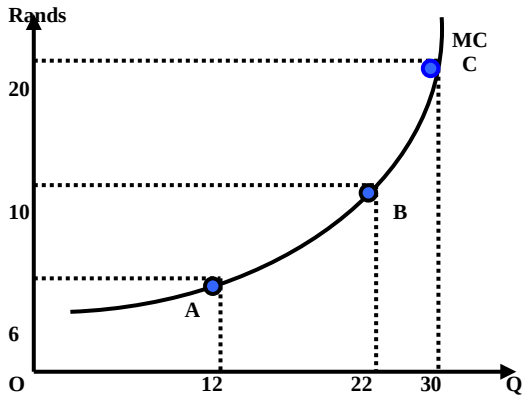
As before, this graph shows that there is no relationship between P and Q. Regardless of what value P takes on, Q remains fixed at 14. In mathematics, *infinite* means existing beyond or being greater than any arbitrarily large value.



Positive non-linear relationship

To the right, we show a positive non-linear relationship. It is a positive relationship because higher quantities (Q) are associated with higher costs in rands. Since the graph of this relationship is a curve, it is termed non-linear. This particular graph is the upward sloping portion of a marginal cost (MC) curve. In this case, the graph, to the right, shows a relationship that is increasing at an increasing rate.

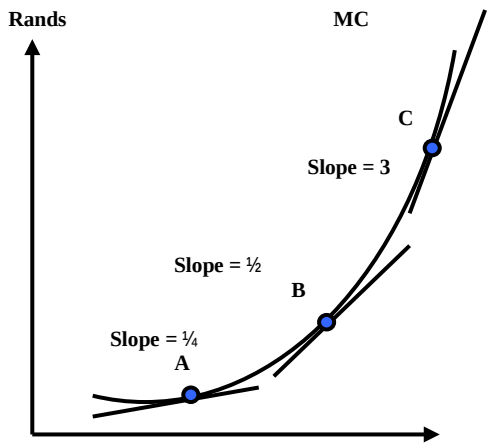
As quantity increases, cost increases at a faster rate. When Q increases from 12 to 22, an increase of 10 units, cost only increases from 6 to 10, or with 4 units. However, when Q increases from 22 to 30, an increase of only 8, cost increases from 10 to 20, or an increase of 10 units. A relationship such as this is said to be increasing at an increasing rate.



Non-linear relationship (slope)

The slope of a linear relationship gives the constant rate of change of one of the variables in terms of the other. A non-linear relationship has a different slope at every point. The meaning of the slope is still the same.

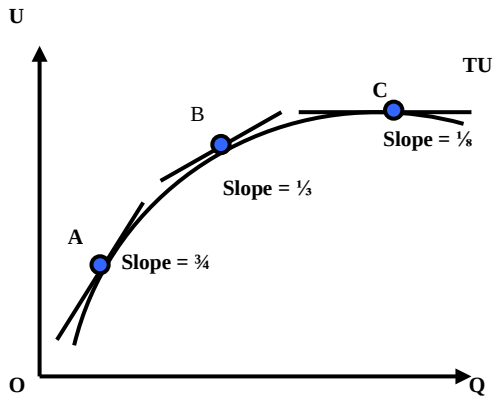
We show a black line (with a dot) tangent to the curve at point A. The slope of the tangent line is the slope of the curve at that point. At point A, the curve has a slope of ¼, which means that the cost increases by 1 unit for every 4 units increase in Q. At point B, the slope of the curve, shown by the black (with a dot) tangent line, is ½, while at C the curve has become much steeper, with a slope of 3.



Total Utility Graph

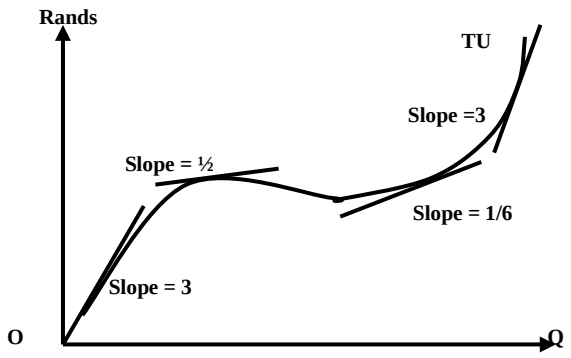
To the right, is a graph of a positive, non-linear relationship that is increasing at a decreasing rate. We show the slope at three different points. As Q increases, TU increases, but it should be clear that, as the rate of increase is getting smaller, the greater the value of Q (further to the right on the graph) becomes. The slope of the graph at any given point is the rate of increase in TU. At point A, where Q is small, the curve is steep with a slope of ¾. At point B the curve is becoming flatter and the slope is ⅓ while, at point C, the curve is flatter still, with a slope of only ⅛.

This particular graph is a Total Utility Graph and, at each point, the slope of the curve can be interpreted as marginal utility, which would mean that the marginal utility is decreasing as Q increases.



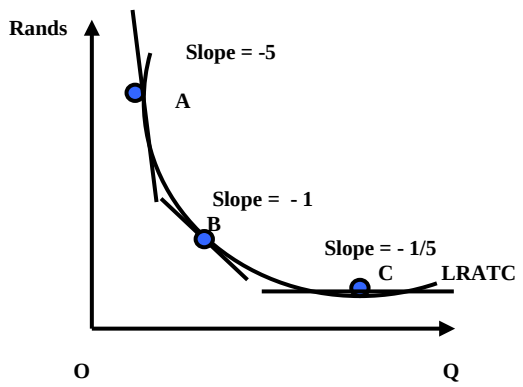
Non-linear relationship

Non-linear relationships can be somewhat more complex than the ones we've seen so far. To the right, we show a positive, non-linear relationship that starts out increasing at a decreasing rate but, at higher levels of Q, it is increasing at an increasing rate. Near the beginning and at the end of the portion of the relationship shown to the right, the curve is fairly steep, with a slope of 3, but towards the middle of the graph the slope becomes quite small. However, the slope does not turn negative anywhere in this graph.



Long Run Average Total Cost: (LRATC) (Negative non-linear relationship)

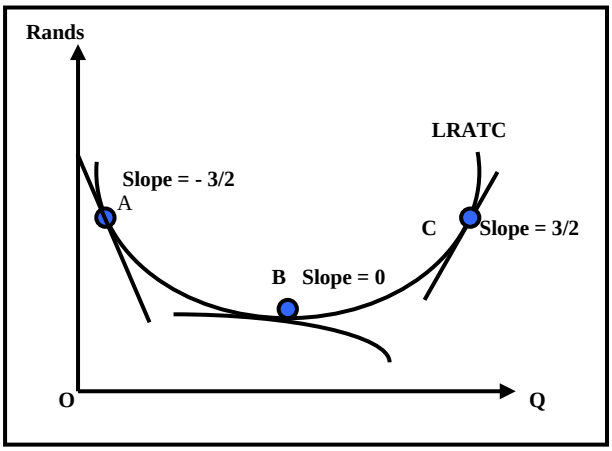
The graph, to the right, shows a negative, non-linear relationship. As Q increases, the cost falls. This relationship is decreasing at a decreasing rate, so the curve becomes flatter as Q increases. This particular graph is the downward sloping portion of a Long Run Average Total Cost (LRATC) curve. At point A, the slope is –5. (It is negative because the graph slopes downward as we move to the right.) As we move further to the right, to point B, the graph is still downward-sloping, but the slope is only -1 while, at point C, the slope is only -1/5.



U-shaped Long Run Average Total Cost curve

So far all the non-linear relationships we've seen are either positively or negatively sloped, but sometimes a single relationship can have portions that are negatively sloped, and other portions that are positively sloped. To the right, we show what is often referred to as a U-shaped Long Run Average Total Cost curve.

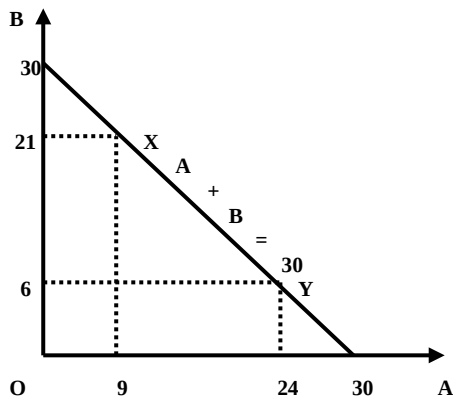
At the lower levels of Q, the curve has a negative slope, such as at point A where the slope is -3/2. However, as Q rises, the curve flattens out and, at point B, the slope is 0 (zero). Then the curve becomes positively sloped so that, at point C, the curve has a slope of 3/2 (positive).



Determination of values of variables

So far we've been looking at graphs of relationships between two variables. In these relationships, the value of one of the variables would be determined by the value of another. For instance, total production costs are being determined by how much is produced. Sometimes we want to show all the possible combinations of two variables that give some common value. In the diagram, to the right, the value of A does not determine the value of B. Instead, we've shown a set of all the (positive) values of A and B that add up to 30.

Points X and Y are two of the points where A + B = 30. At point X the value of A is 9 and the value of B is 21 (9 + 21 = 30). At point Y the value of A is 24 and the value of B is 6 (24 + 6 = 30). The endpoints of the line work too. On the vertical axis the line crosses where B is 30 and A is zero (30 + 0 = 30), and on the horizontal axis, A is 30 and B is zero (0 + 30 = 30).



Note: If we allow fractional values and/or negative numbers, there are an infinite number of points where A + B = 30.

As mentioned above, a graph depicts only the relationship between the variables indicated on the axes. Of course, there are normally other variables or factors that affect the typical dependent variable. Those other factors are assumed to be constant when we move a particular function up and down between entrance fee and visitation. One way in which we can bring other factors into the analysis is as shifters of the relationship we are dealing with. A shifter is simply a factor that moves the original function one way or another.

Of course the shift could be up or down, outward or back, depending on the variables that are involved. When dealing with supply and demand, the learners will be aware of curves that will indicate the original relationship, the changes that occur and the shift from one point to another.

Unit 4: Opportunity Cost and Production Possibility Frontier (PPF)

Opportunity cost

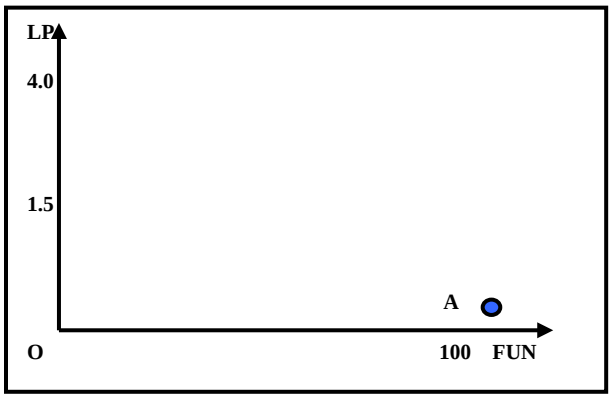
We use a particular kind of graph to illustrate economic cost or opportunity cost. Remember, our definition of cost hinges on the idea of forgone opportunities. Any decision, choice, or action involves a trade-off.

We can illustrate this idea with a simple example involving only two choices. Let's use an example that is probably close to Mary's heart, namely a trade-off between fun and performance in school – i.e. marks or scores. While not all learners are created equally, most learners find that they face this trade-off. If too much time is spent on non-academic activities, achievement suffers. If too much time is spent on academic activities, social life (fun) suffers. Let's examine this graphically.

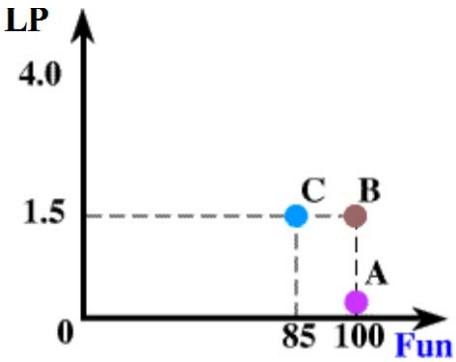
Consider the graph, to the right. LP (Learner Performance) is on the vertical axis and fun is on the horizontal axis. This particular graph is set up as if a 4.0 is the highest possible LP that can be earned and 100 hours constitute the greatest amount of time that can be spent having fun each week.

Suppose we are interested in the learner who currently finds herself at a point like A. (A is just a label and has nothing to do with performance.) Unfortunately for our learner, she probably can't move to a point like B. Meaning, she probably can't improve her performance in subjects without sacrificing some fun.

At point A our learner's performance in subjects constitutes almost all Fs, with an LP close to 0 and spending all her time having fun. What if she wants to improve her performance in subjects?



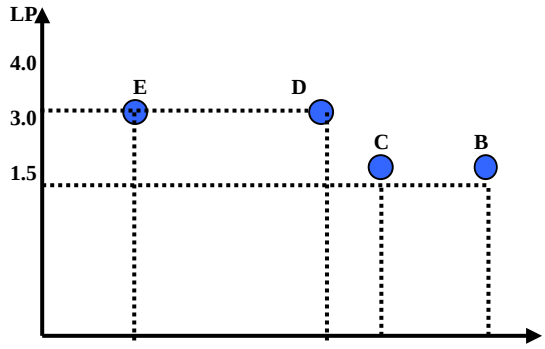
However, she might not have to give up all that much fun in order to get to a point like C. At a point like A she was hardly ever attending class. She might well be able to move to a point like C (with a 1.5 LP), simply by attending her classes – that is by sacrificing 15 hours of fun. What if she wished to improve her LP by even more?



It's unlikely that our learner could move from a 1.5 to a 3.0 LP by giving up another 15 hours of fun – i.e. a point like D is probably not available to her.

To earn a 3.0 might require significant amounts of study and work. In other words, the opportunity cost of 1.5 points in terms of fun might be higher, the higher your learner performance is. If so, she would only attain a 3.0 at a point

like E. The amount of fun she would have to sacrifice to earn a 3.0 would depend on the learner, the school and the subjects she's studying.



If the opportunity cost of performance points in terms of fun is greater, the higher your performance, and then the set of LP/Fun combinations available to our learner might look like the curve to the left.

A curve like this is commonly referred to as a Production Possibilities Frontier or PPF. It can also be referred to as a Production Possibilities Curve or (if we include the points under the curve) a Production Possibilities Set. (More on the points under the curve later).

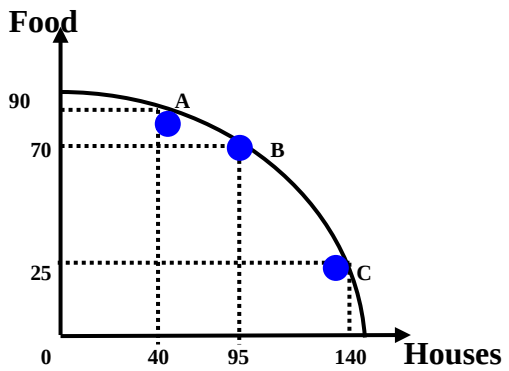
Production Possibility Frontier (PPF)

The Production Possibility Frontier (PPF) represents the point at which an economy is most efficiently producing its goods and services and, therefore, allocating its resources in the best way possible. If the economy is not producing the quantities indicated by the PPF, resources are being managed inefficiently and the production of society will dwindle. The PPF shows that there are limits to production, so to achieve efficiency, an economy must decide what combination of goods and services can be produced.

Let's turn to the chart below. Imagine an economy that can produce only Food and Houses. According to the PPF, points A, B and C – all appearing on the curve – represent the most efficient use of resources by the economy.

In Production Possibilities we will study graphs, such as the one to the right, in detail. This is a graph of the possible amounts of food and housing that can be produced by some country when it uses all its resources. You can see that the amount of food that has to be sacrifices to get more housing, or the amount of housing that has to be sacrificed to get more food, is different at each point.

At point A the country can produce 90 food units and 40 houses. If the country wants to build an additional 55 houses, it can move to B, giving a total of 95 houses. To do this, it only has to sacrifice 20 food units for a total of 70 food units. However, if the country moves from point B to point C, it has to sacrifice an additional 45 food units to be able to produce only an additional 45 houses.



Unit 5: Markets: Demand, Supply and Shifts

This unit will explain the way in which markets adjust to changes and the role of prices in bringing the markets towards equilibrium. This section concerns purely competitive markets with a large number of independent buyers and sellers.

Definition of a market

A market is an institution or mechanism that brings together buyers and sellers of particular goods and services. It may be local, national or international in scope. Some markets are highly personal, face-to-face exchanges; others are impersonal and remote.

A product market involves goods and services and a resource market involves factors of production.

Supply and demand

Supply and demand is perhaps one of the most fundamental concepts of Economics and it is the backbone of a market economy.

The relationship between supply and demand underlies the forces behind the allocation of resources. In market economy theories, the supply and demand theory will allocate resources in the most efficient way possible. How? Take a closer look at the law of demand and the law of supply below.

Demand

Definition of demand

Demand is the quantity of goods or services that consumers are willing and able to buy at different prices during a specified time period. *It refers to how much (quantity) of a product or service is desired by buyers.* The quantity demanded is the amount of a product people are willing to buy at a certain price. The relationship between price and quantity demanded is referred to as the demand relationship.

A demand schedule shows how much buyers are willing and able to purchase at different prices. To be meaningful, the demand schedule must have a period of time associated with it.

Law of demand

The law of demand states that: Other things being equal, as the price increases, the corresponding quantity demanded falls (i.e. there is an inverse relationship between price and quantity demanded). The higher the price of a good, the less people will demand that good. In other words, the higher the price, the lower the quantity demanded. The amount of a good that buyers purchase at a higher price is less because, as the price of a good goes up, so does the opportunity cost of buying that good. As a result, people will naturally avoid buying a product that will force them to forgo the consumption of something else they value more.

Note: The “other-things-being-equal” assumption refers to consumer income and tastes, prices of related goods, and other things besides the price of the product being discussed.

Explanation of the law of demand

Diminishing marginal utility: The decrease in added satisfaction that results when one consumes additional units of a good or service, i.e. the second “glass of Coke”, yields less extra satisfaction (or utility) than the first.

Income effect: A lower price increases the purchasing power of money income, enabling the consumer to buy more at a lower price (or less at a higher price).

Substitution effect: A lower price gives an incentive to substitute the lower-priced good for now relatively higher-priced goods.

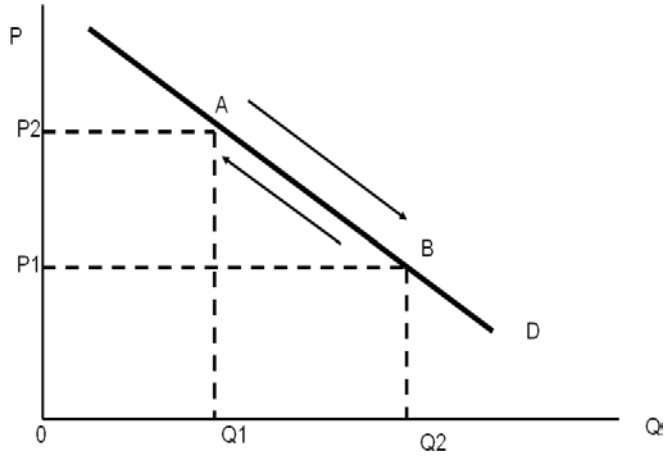
The demand curve

1. It illustrates the inverse relationship between price and quantity.

2. The downward slope indicates lower quantity at a higher price and higher quantity at a lower price, reflecting the law of demand.

Demand curve for an individual consumer

The chart below shows that the curve is a downward slope. A and B are points on the demand curve. Each point on the curve reflects a direct correlation between quantity demanded (Q) and price (P). So, at point A, the quantity demanded will be Q1 and the price will be P2, etc. The demand relationship curve illustrates the negative relationship between price and quantity demanded. The higher the price of a good, the lower the quantity demanded (A), and the lower the price, the more the good will be in demand (B).



Individual versus market demand

1. Transition from an individual to a market demand schedule is accomplished by summing individual quantities at various price levels.
2. The market curve is a horizontal sum of individual curves.

Market Demand: Illustration of Horizontal Summation

P	Q1	Q2	Q3	Total (Market Demand)
5	10	12	8	= 30
4	20	23	17	= 60
3	35	39	26	= 100
2	55	60	39	= 154
1	80	87	54	= 221

Determinants of demand

1. Tastes: A favourable change leads to an increase in demand; an unfavourable change leads to a decrease in demand.

2. Number of buyers: Population (i.e. market size): More buyers lead to an increase in demand; fewer buyers lead to a decrease in demand.

3. Income: More income leads to an increase in demand; less income leads to a decrease in demand for normal goods. (The rare case of goods of which the demand varies inversely with income is referred to as inferior goods.)

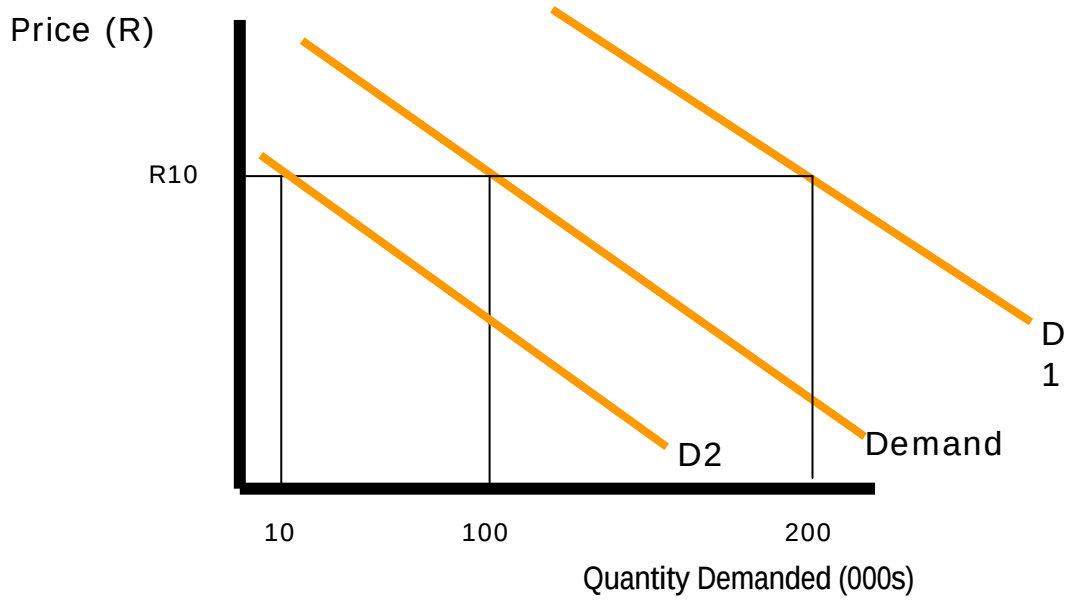
4. Expectations: Consumer views about future prices, product availability and the fact that income can shift demand.

5. Prices of related goods also affect demand

   I. Substitute goods (those that can be used in place of each other): The price of the substitute good and demand for the other good are directly related. If the price of Coke rises (because of a supply decrease), demand for Pepsi should increase. A change in the price of one causes a shift in demand for the other in the same direction (e.g. butter and margarine).
   II. Complementary goods (those that are used together like tennis balls and rackets): When goods are complements, there is an inverse relationship between the price of one and the demand for the other. A change in the price of one good causes a shift in demand for the other in the opposite direction (e.g., stereo amplifiers and speakers, nuts and bolts).
   III. Unrelated goods.

Change in demand vs change in quantity demanded

A change in quantity demanded is caused by a change in price.
A change in demand is caused by a change in the determinants of demand.



Changes in any of the factors affecting demand, *other than price*, cause the entire demand curve to shift to the left (less demanded at each price) or to the right (more demanded at each price).

Supply

Supply represents how much the market can offer. The quantity supplied refers to the amount of a certain good that producers are willing to supply when receiving a certain price. The correlation between price and how much of a good or service is supplied to the market, is referred to as the supply relationship. Price, therefore, is a reflection of supply and demand. Supply is a schedule that shows amounts of a product that a producer is willing and able to produce and sell at each specific price in a series of possible prices during a specified time period. A schedule shows what quantities will be offered at various prices, or what price will be required to induce various quantities to be offered.

Law of supply

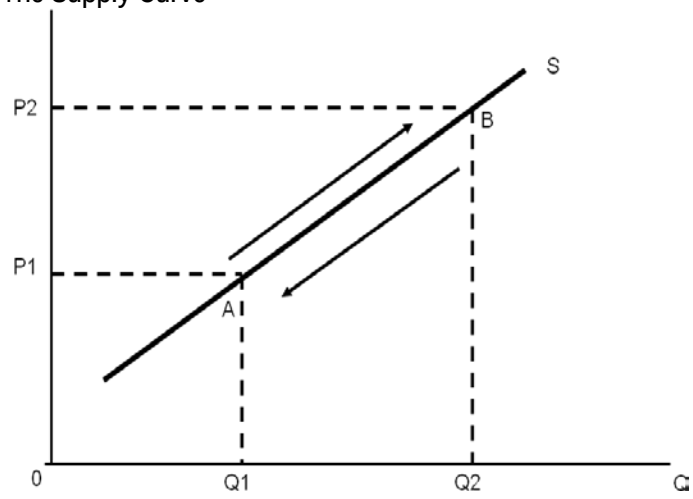
Like the law of demand, the law of supply demonstrates the quantities that will be sold at a certain price. But, unlike the law of demand, the supply relationship shows an upward slope. Producers will produce and sell more of their

product at a high price than at a low price (i.e. there is a direct relationship between price and quantity supplied). This means that the higher the price, the higher the quantity supplied. Producers supply more at a higher price because selling a higher quantity at a higher price increases revenue.

Explanation

1. Given product costs, a higher price means greater profits and thus an incentive to increase the quantity supplied.
2. Beyond some production quantity, producers usually encounter increasing costs per added unit of output.

The Supply Curve



- Review the distinction between a change in quantity supplied due to price changes and a change or shift in supply due to a change in the determinants of supply.

In the chart above, A and B are points on the supply curve. Each point on the curve reflects a direct correlation between quantity supplied (Q) and price (P). At point B, the quantity supplied will be Q2 and the price will be P2, etc. (To learn how economic factors are used in currency trading)

A non-price determinants of supply change in any of the supply determinants causes a change in supply and a shift in the supply curve.

An increase in supply involves a rightward shift, and a decrease in supply involves a leftward shift.

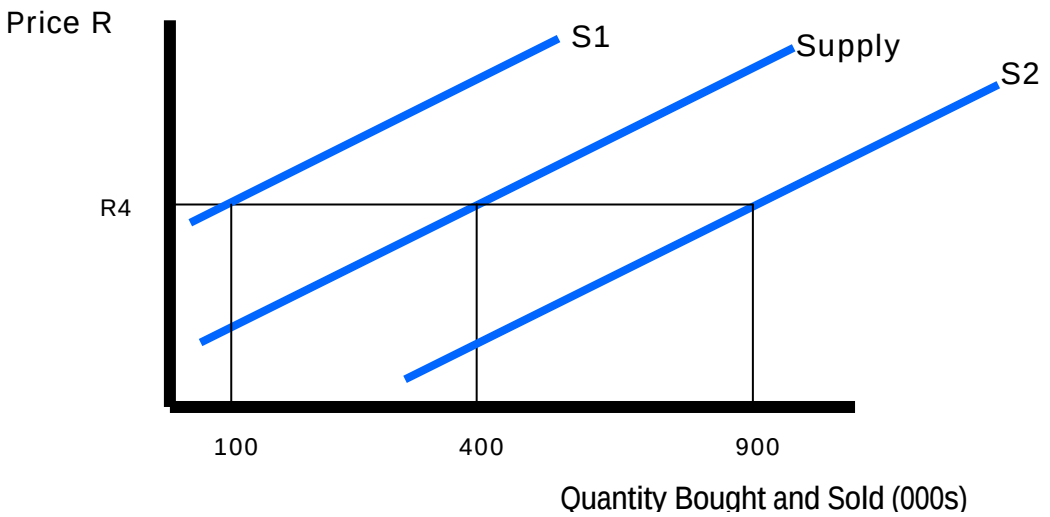
1. Resource prices or inputs costs: A rise in resource prices will cause a decrease in supply or a leftward shift in the supply curve. A decrease in resource prices will cause an increase in supply or a rightward shift in the supply curve.
2. Technology: A technological improvement means more efficient production and lower costs, therefore an increase in supply or a rightward shift in the curve results. Technology (improvements shift curve right)
3. Taxes and subsidies: A business tax is treated as a cost, so supply decreases. A subsidy lowers the cost of production, so supply increases. With regard to taxes and subsidies, taxes behave as a cost, so the shift is to the left, while subsidies reduce costs, so the shift is to the right.
4. Prices of related goods: If the price of a substitute production good rises, producers might shift production towards the higher-priced good, causing a decrease in supply of the original good. With regard to the prices of inputs used to produce the product, with lower prices the curve shifts to the right.
5. Expectations: Expectations about the future price of a product can cause producers to increase or decrease current supply. For example, due to price expectations, farmers withhold crops in expectation of higher prices.
6. Number of sellers or firms in the industry: Generally, the larger the number of sellers, the greater the supply. Number of Firms (more firms shift to the right)

Supply and Demand: Market Equilibrium

Price	Quantity supplied	Quantity demanded	Surplus or Shortage
5	12	2	+10
4	10	4	+6
3	7	7	0
2	4	11	-7
1	1	16	-15

Changes

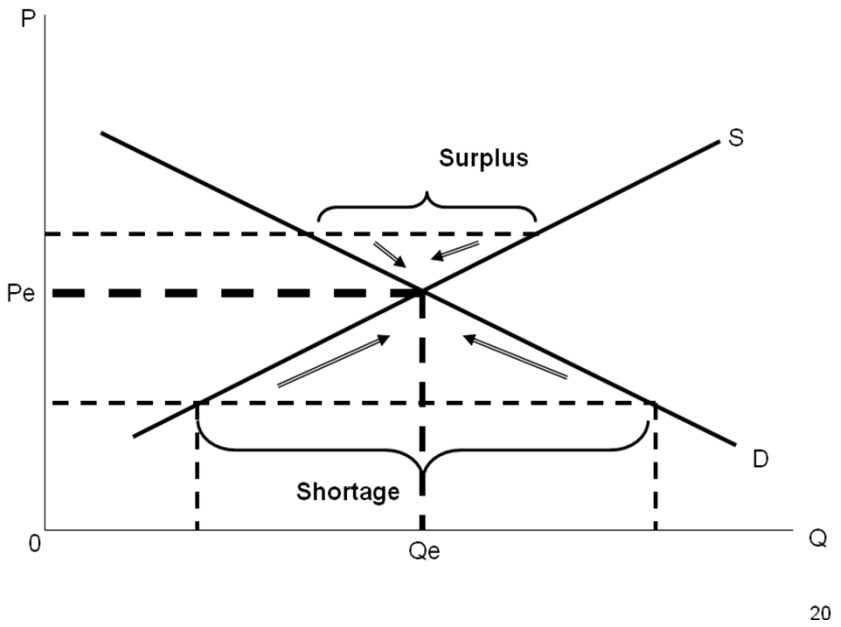
- Changes in any of the factors OTHER than price cause a **shift** in the supply curve.
- A **shift** in supply to the left: The amount that producers offer for sale at every price will be less.
- A **shift** in supply to the right: The amount that producers wish to sell at every price increases.
- HINT: **Be careful to not confuse supply going "up" and "down" with the direction of the shift!**



Changes in any of the factors affecting supply *other than price* will cause the entire supply curve to shift.

A shift to the **left results in a lower supply** at each price; a **shift to the right indicates a greater** supply at each price.

Equilibrium price and quantity



Supply and demand: Market equilibrium

Equilibrium: The point where *quantity supplied equals the quantity demanded.*

1. At prices above this equilibrium, there is an excess quantity or a surplus.
2. At prices below this equilibrium, there is an excess quantity demanded or a shortage.
3. Market clearing or market price is another name for equilibrium price.
4. The rationing function of prices is the ability of competitive forces of supply and demand to establish a price where buying and selling decisions are coordinated.

Changes in supply and demand and equilibrium

Changing demand with supply held constant.

1. An increase in demand will have the effect of increasing equilibrium price and quantity.
2. A decrease in demand will have the effect of decreasing equilibrium price and quantity.

Changing supply with demand held constant

1. An increase in supply will have the effect of decreasing equilibrium price and increasing quantity.
2. A decrease in supply will have the effect of increasing equilibrium price and decreasing quantity.

Complex cases: When both supply and demand shift

1. If supply increases and demand decreases, then price declines, but the new equilibrium quantity depends on the relative sizes of shifts in demand and supply.
2. If supply decreases and demand increases, price rises, but the new equilibrium quantity again depends on the relative sizes of shifts in demand and supply.
3. If supply and demand change in the same direction (both increase or both decrease), the change in equilibrium quantity will be in the direction of the shift, but the change in equilibrium price now depends on the relative shifts in supply and demand.

Application: Government-set prices (ceilings and floors)

Government-set prices prevent the market from reaching the equilibrium price and quantity.
These can be in the form of:

- price ceilings (maximum prices); or

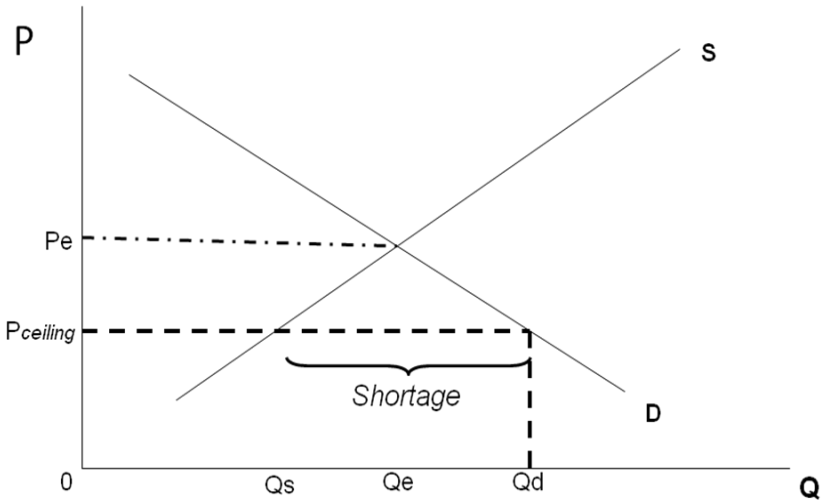
- price floors (minimum prices).

A. Price ceilings

The maximum legal price that a seller may charge, is typically placed below the equilibrium. Shortages result as quantity demanded exceeds quantity supplied.

Examples: Rent control and gasoline price control.

Price ceiling



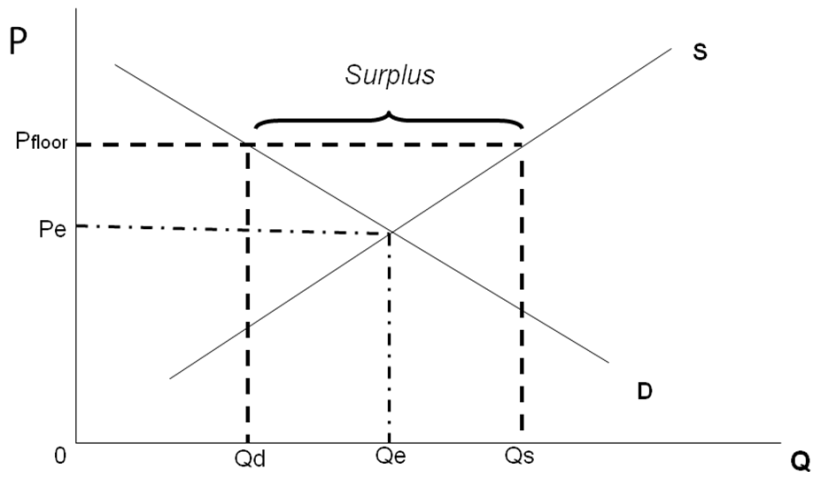
B. Price floors

The minimum legal price that a seller may charge, is typically placed below the equilibrium.

Surpluses result as quantity supplied exceeds quantity demanded.

Examples: Minimum wage, farm price.

Price floors



Elasticity

The elasticity of demand (e_d) is a measure of price responsiveness to the quantity demanded and is equal to the percentage change in quantity demanded, divided by the percentage change in price. Because the elasticity of

demand can vary, depending on whether one moves up or down the demand curve, elasticity of demand is often calculated by taking as an average the prices and quantities provided by the following formula:

$$e_d = \frac{\text{change in Q}}{(Q_1 + Q_2)/2} \Big/ \frac{\text{change in P}}{(P_1 + P_2)/2}$$

Determinants of price elasticity of demand

1. The existence of substitutes: The closer the substitutes for a particular commodity, the greater will be its price elasticity of demand.

2. The importance of the commodity in the consumer's budget: The greater the percentage of a total budget spent on a commodity, the greater the person's price elasticity of demand for that commodity.

3. Time for adjustment in rate of purchase: The longer any price change persists, the greater the price elasticity of demand.

We must distinguish between a short run and a long run. (A long run is the time necessary for consumers to make a relatively full adjustment to a given price change.) *For example, the short-run price elasticity of demand for airline travel is 0.6, whereas it is 2.4 in the long run.*

Elasticity: The concepts

- The responsiveness of one variable to changes in another.
- When a price rises, what happens to demand? Demand falls.
- BUT! By how much does demand fall?
  - If a price rises by 10%, what happens to demand? We know demand will fall. But by how much?
    - By more than 10%?
    - By less than 10%?

Let us answer these questions by introducing elasticity measures.

Elasticity measures the extent to which demand will change

- *What are elasticity measures? They are responsiveness measures.*
- *Why introduce them? Demand and supply responsiveness clearly matters for lots of market analyses.*
- *Why not just look at slope?*

  - *We want to compare across markets: inter-market*
  - *We want to compare within markets: inter- market*
  - *A slope can be misleading*
  - *We want a unit-free measure*

Why economists use elasticity

- An elasticity is a unit-free measure.
- By comparing markets using elasticities, it does not matter how we measure the price or the quantity in the two markets.
- Elasticities allow economists to quantify the differences amongst markets without standardising the units of measurement.

Summary: What is an elasticity?

- It is a measurement of the percentage change in one variable that results from a 1% change in another variable.
- One can come up with many elasticities.
- We will introduce four.

- Three from the demand function
- One from the supply function

The basic types of elasticity

These four basic types of elasticity are used:

1. Price elasticity of demand
2. Price elasticity of supply
3. Income elasticity of demand
4. Cross elasticity

Price elasticity of demand

a. The responsiveness of demand to changes in price.
b. Where a percentage change in demand is greater than the percentage change in price: elastic.
c. Where a percentage change in demand is less than a percentage change in price: inelastic.

Two important elasticities

1. Price elasticity of demand: How sensitive the quantity demanded is to a change in the price of the good.
2. Price elasticity of supply: How sensitive the quantity supplied is to a change in the price of the good.

The two above are often referred to as "own" price elasticities.

Examples of own price demand elasticities

- *When the price of petrol rises by 1%, the quantity demanded falls by 0.2%, so petrol demand is not very price sensitive.*
  - *Price elasticity of demand is -0.2 .*

- *When the price of gold jewellery rises by 1%, the quantity demanded falls by 2.6%, so jewellery demand is very price sensitive.*
  - *Price elasticity of demand is -2.6.*

Examples of own price supply elasticities

- *When the price of paintings increases by 1%, the quantity supplied doesn't change at all, so the quantity of paintings supplied is completely insensitive to the price.*
  - *Price elasticity of supply is 0.*

- *When the price of beef increases by 1%, the quantity supplied increases by 5%, so beef supply is very price sensitive.*
  - *Price elasticity of supply is 5.*

Examples of unit-free comparisons

- *Petrol and jewellery*
  - *It doesn't matter that petrol is sold per litre for about R1.09 per litre and gold is sold by kilogram for about R290 per kilogram.*
  - *We compare the demand elasticities of -0.2 (petrol) and -2.6 (gold jewellery).*
  - *Gold jewellery demand is the more price sensitive of the two.*
- *Paintings and meat*
- *It doesn't matter that classical paintings are sold by the canvas for millions of dollars each, while beef is sold by kilogram for about R1.50 per kilogram.*
- *We compare the supply elasticities of 0 (classical paintings) and 5 (beef).*
- *Beef supply is more price sensitive.*

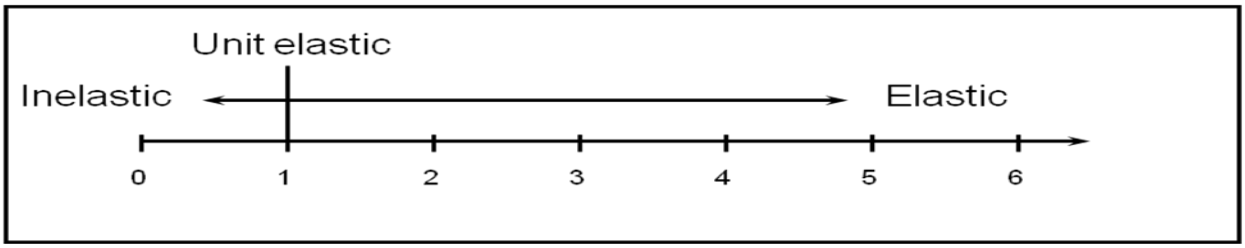
Inelastic economic relations

- When an elasticity is small (between 0 and 1 in absolute value), we call the relation that it describes **inelastic**.
  - Inelastic demand means that the quantity demanded is not very sensitive to price.
  - Inelastic supply means that the quantity supplied is not very sensitive to price.

Elastic economic relations

- When an elasticity is large (greater than 1 in absolute value), we call the relation that it describes **elastic**.
  - Elastic demand means that the quantity demanded is sensitive to price.
  - Elastic supply means that the quantity supplied is sensitive to price.

Size of Price Elasticities



- **Unit elastic:** Own price elasticity is equal to 1.
- **Inelastic:** Own price elasticity is less than 1.
- **Elastic:** Own price elasticity is greater than 1.

General formula for own price elasticity of demand

- P = Current price of good X
- X^D = Quantity demanded at that price
- DP = Small change in the current price
- DX^D = Resulting change in quantity demanded

FORMULA:

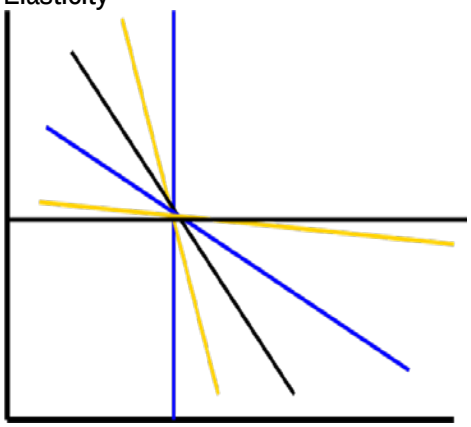
$$\text{Elasticity} = \frac{\text{Percentage Change in Quantity Demanded}}{\text{Percentage Change in Price}}$$

$$\text{Ped} = \frac{\text{Percentage Change in Quantity Demanded}}{\text{Percentage Change in Price}}$$

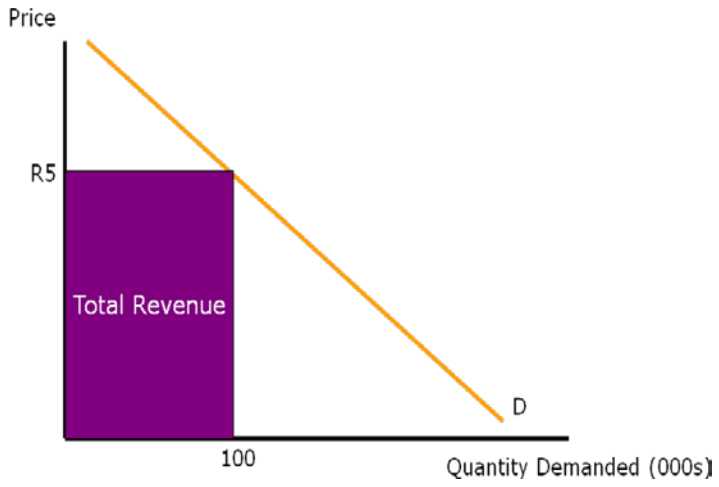
If the answer is between 0 and –1, the relationship is inelastic.
If the answer is between -1 and infinity, the relationship is elastic.

Note: PED has a – (minus) sign in front of it because, as the price rises, demand falls and vice-versa. (Inverse relationship between price and demand.)

Elasticity



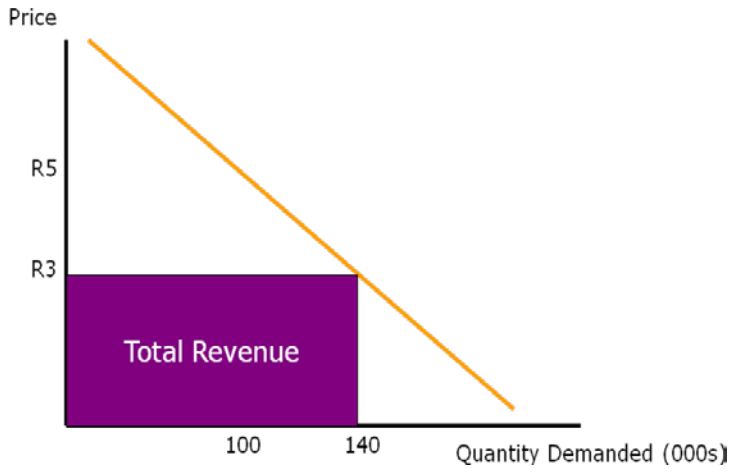
The demand curve can be a range of shapes, each of which is associated with a different relationship between price and the quantity demanded.



Total revenue is price x quantity sold. In this example, TR = R5 x 100,000 = R500,000.

This value is represented by the grey-shaded rectangle.

The importance of elasticity lies in the information that it provides on the effect of changes in price on total revenue.



If the firm decides to decrease a price to (say) R3, the degree of price elasticity of the demand curve would determine the extent of the increase in demand and therefore the change in total revenue.

Note:

- Own price elasticity of demand is always negative.
- Economists usually refer to own price elasticity of demand by its absolute value (ignore the negative sign).
- So, even though the formula states that own price elasticity of demand is negative, we would say the elasticity of demand is 1.5 in the first example and 0.67 in the second.

Arc formula for elasticity: General

- Although the exact formula for calculating elasticity is useful in theory, in practice economists usually calculate an approximation, referred to as the *arc* elasticity.
- You are really approximating the elasticity between two points.
- We need two points to perform the calculation.

Arc formula for own price elasticity of demand

- Get two points of the demand curve: Points A and B.
- Consider P^A and X^A and P^B and X^B from the demand relationship.
- Note: We'll take absolute value.

$$elasticity = \frac{(X^A - X^B)/Xavg}{(P^A - P^B)/Pavg}$$

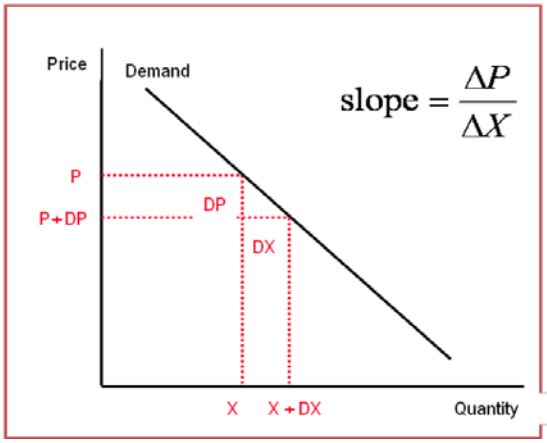
Point formula for own price elasticity of demand

- The exact formula for calculating elasticity at point A on the demand curve.
- Note: We'll take absolute value.

$$elasticity = \frac{P^A}{X^A}\left(\frac{\Delta X^D}{\Delta P}\right) atA$$

Slope of the demand curve

- DP is the change in price. (DP<0)
- DX is the change in quantity.
- slope = DP/ DX
- 1/slope = DX/ DP

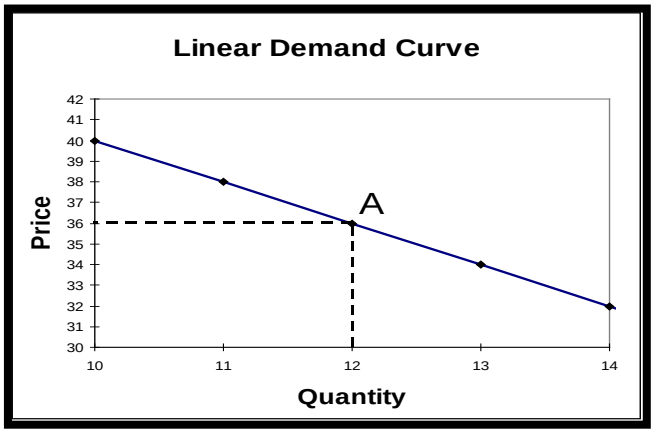


Slope compared to elasticity

- The slope measures the rate of change of one variable (say P) in terms of another (say X).
- The elasticity measures the percentage change of one variable (say X) in terms of another (say P).

Example: Elasticity calculation at "A"

- *Slope = (40-32)/(10-14) = -2*
- *1/slope = -1/2*
- *P/X = 36/12 = 3 at point A*
- *P/X x 1/slope = -1.5*
- *Elasticity of demand = -1.5*
- *Absolute value of the elasticity = 1.5*



Exercise: Linear demand

- *Compute the elasticity at the point indicated in red on the table (X=18; P=24).*
    - *Slope = -2*
    - *1/Slope = -1/2*
    - *P/X = 24/18 = 4/3*
    - *Elasticity = -2/3*

Quantity	Price
10	40
11	38
12	36
13	34
14	32
15	30
16	28
17	26
18	24
19	22
20	20

Elasticities and linear demand

Linear Demand				
Quantity	Price	Slope	1/Slope	Exact Elasticity
10	40			
11	38	-2	-0.5	-1.7273
12	36	-2	-0.5	-1.5000
13	34	-2	-0.5	-1.3077
14	32	-2	-0.5	-1.1429
15	30	-2	-0.5	-1.0000
16	28	-2	-0.5	-0.8750
17	26	-2	-0.5	-0.7647
18	24	-2	-0.5	-0.6667
19	22	-2	-0.5	-0.5789
20	20			

- *The elasticity varies along a linear demand (or supply) curve. This is illustrated in the linear demand curve in the table above.*
- *Note: Usually we would report the last column as the absolute value.*

Price elasticity of supply

- The price elasticity of supply is always positive.
- Economists refer to the price elasticity of supply by its actual value.
- Exactly the same type of point and arc formulas are used to compute and estimate supply elasticities as for demand elasticities.

Technical definitions for extreme elasticity values

The following are some of the technical definitions for extreme elasticity values:

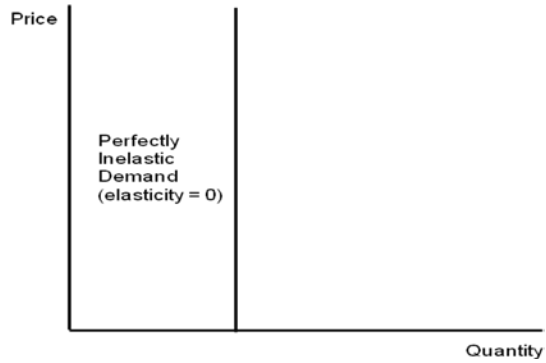
- Economists use the terms, "perfectly elastic" and "perfectly inelastic" to describe extreme values of price elasticities.
- Perfectly elastic means the quantity (demanded or supplied) is as price sensitive as is possible.
- Perfectly inelastic means that the quantity (demanded or supplied) has no price sensitivity at all.

Perfectly elastic demand

- We say that demand is perfectly elastic when a 1% change in the price would result in an infinite change in the quantity demanded.

Perfectly inelastic demand

- We say that demand is perfectly inelastic when a 1% change in the price would result in no change in the quantity demanded.

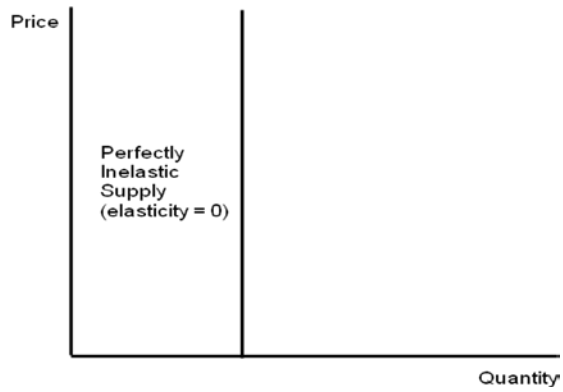


Perfectly elastic supply

- We say that supply is perfectly elastic when a 1% change in the price would result in an infinite change in the quantity supplied.

Perfectly inelastic supply

- We say that supply is perfectly inelastic when a 1% change in the price would result in no change in the quantity supplied.



Determinants of elasticity

- What is a major determinant of own price elasticity of demand?
  - The availability of substitutes in consumption.
- What is a major determinant of own price elasticity of supply?
  - The availability of alternatives in production.

Reminders

- The value of own price elasticity usually changes along a demand curve.
  - There are many interesting intra-elasticity applications.
- We can also compare elasticities across markets.
  - There are interesting inter-elasticity questions.

Using demand elasticity: Total expenditure

- Does the total expenditure on a product go up or down when the price increases?
- The price increase means more is spent for each unit.
- But, quantity demanded declines as the price rises.
- So, we must measure the price elasticity of demand to answer the question.

Toll gate example: Part 1a

- *Assume that the current toll for the Kranskop toll gate is R2.00/trip.*
- *Suppose the quantity demanded at R2.00/trip is 100,000 trips/hour.*
- *If the price elasticity of demand for toll gate trips is 2.0, what is the effect of a 10% toll increase?*

Toll gate: Elastic demand

- *Price elasticity of demand = 2.0*
- *Toll increase of 10% implies a 20% decline in the quantity demanded.*
- *Trips fall to 80,000/hour.*
- *Total expenditure falls to R176, 000/hour (= 80,000 x R2.20).*
- *R176, 000 < R200,000, the revenue from a R2.00 toll.*

Toll Gate: Example, Part 2

- *Now suppose the elasticity of demand for toll gate trips is 0.5.*
- *How would the number of trips and the expenditure on tolls be affected by a 10% increase in the toll?*

Toll Gate: Inelastic Demand

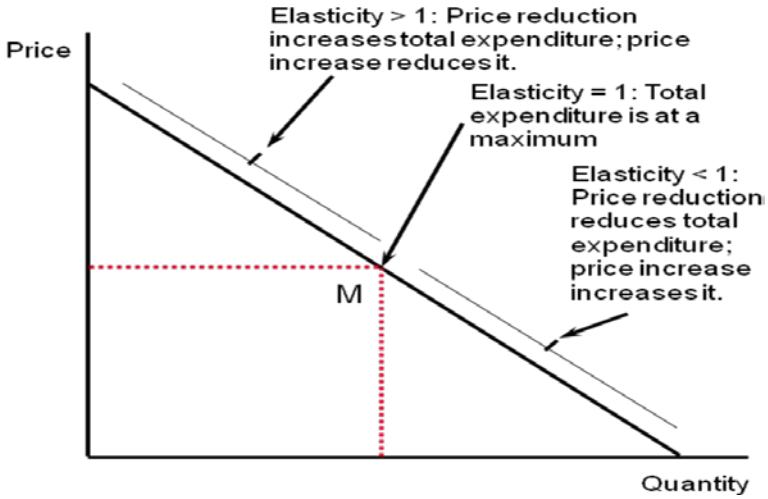
- *Price elasticity of demand = 0.5*
- *Toll increase of 10% implies a 5% decline in the quantity demanded.*
- *Trips fall to 95,000/hour.*
- *Total expenditure rises to R209, 000/hour (= 95,000 x R2.20).*
- *R209, 000 > R200, 000, the revenue from a R2.00 toll.*

Elasticity and Total Expenditure

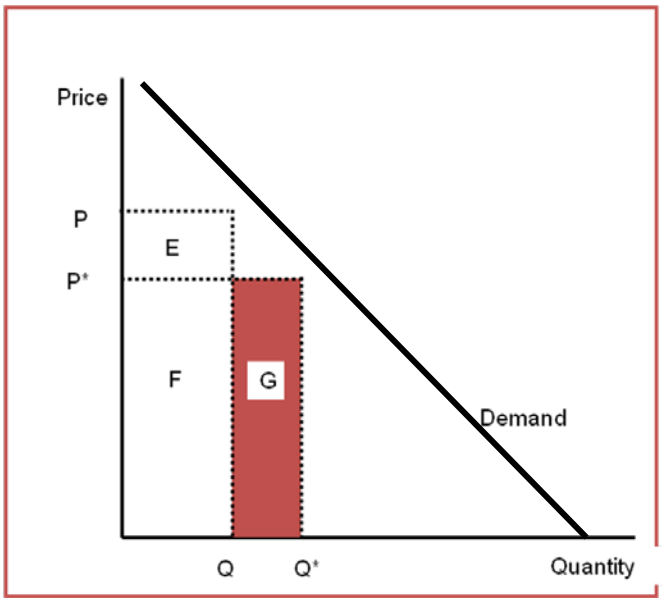
- A price increase will increase total expenditure if, and only if the price elasticity of demand is less than 1 in absolute value (between -1 and zero).
  - Inelastic demand
  -
- A price reduction will increase total expenditure if, and only if the price elasticity of demand is greater than 1 in absolute value (less than -1).
  - Elastic demand

Elasticity and total expenditure (Graph)

- At point M the demand curve is unit elastic. M is the midpoint of this linear demand curve.
- Above M demand is elastic, so total expenditure falls as the price rises.
- Below M demand is inelastic. So, total expenditure falls as the price falls.
- Total expenditure is maximised at point M, where the elasticity = 1.



Change in Expenditure Components



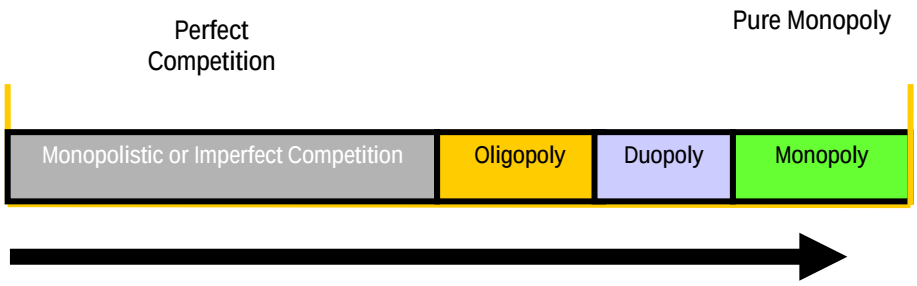
- Old (price, quantity) is (P, Q).
- New (price, quantity) is (P*, Q*).
- Expenditure increases if G is greater than E.
- Since the point (P, Q) is above the midpoint of the linear demand curve, we know that total expenditure will increase at the lower price (P*, Q*). So, E must be smaller than G.

Unit 6: Market Structures

The manner in which a market is organised, is based largely on the number of firms in the industry. The four basic market structure models are: perfect competition, monopoly, monopolistic competition and oligopoly. The primary difference between them is the number of firms on the supply side of a market. Both perfect competition and monopolistic competition have a large number of relatively small firms selling output. Oligopoly has a small number of relatively large firms. And a monopoly has a single firm.

- Market structure: It identifies how a market is constituted in terms of:
  - The number of firms in the industry.
  - The nature of the product produced.
  - The degree of monopoly power each firm has.
  - The degree to which a firm can influence price.
  - Profit levels.
  - A firm's behaviour: pricing strategies, non-price competition, output levels.
  - The extent of barriers to entry.

- The impact on efficiency



The further right on the scale, the greater the degree of monopoly power exercised by a firm.

Importance:

- The degree of competition affects the consumer. Will it benefit the consumer or not?
- It impacts on the performance and behaviour of the company/companies involved.

- Models – a word of warning!
  - Market structure deals with a number of economic "models".
  - These models are a representation of reality to help us understand what may be happening in real life.
  - There are extremes to the model that are unlikely to occur in reality.
  - They still have value as they enable us to draw comparisons and compare contrasts as to what is observed in reality.
  - Models therefore facilitate analysing and evaluating: They offer a benchmark.

Each model is characterised by:

- Number and size of firms that make up the industry.
- Control over price or output.
- Freedom of entry into and exit from the industry.
- Nature of the product – degree of homogeneity (similarity) of the products in the industry (extent to which products can be regarded as substitutes for each other)
- Diagrammatic representation – the shape of the demand curve, etc.

Perfect competition

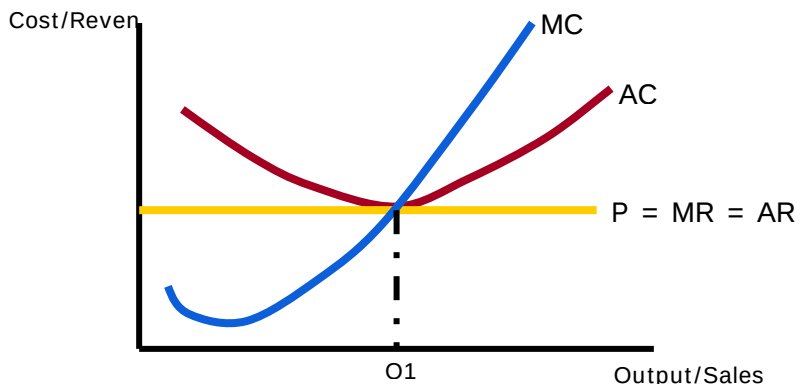
- It represents one extreme of the market structure spectrum.

- Characteristics:

  - A large number of firms.
  - Products are homogenous (identical). The consumer has no reason to express a preference for any firm.
  - There is freedom of entry into and exit out of the industry.
  - Firms are price takers. They have no control over the price they charge for their product.
  - Each producer supplies a very small proportion of total industry output.
  - Consumers and producers have perfect knowledge of the market.

Diagrammatic representation

Perfect Competition



1. The industry price is determined by supply and demand of the industry as a whole. The firm is a very small supplier within the industry and has no control over price. It will sell each extra unit for the same price. Price therefore = MR and AR.

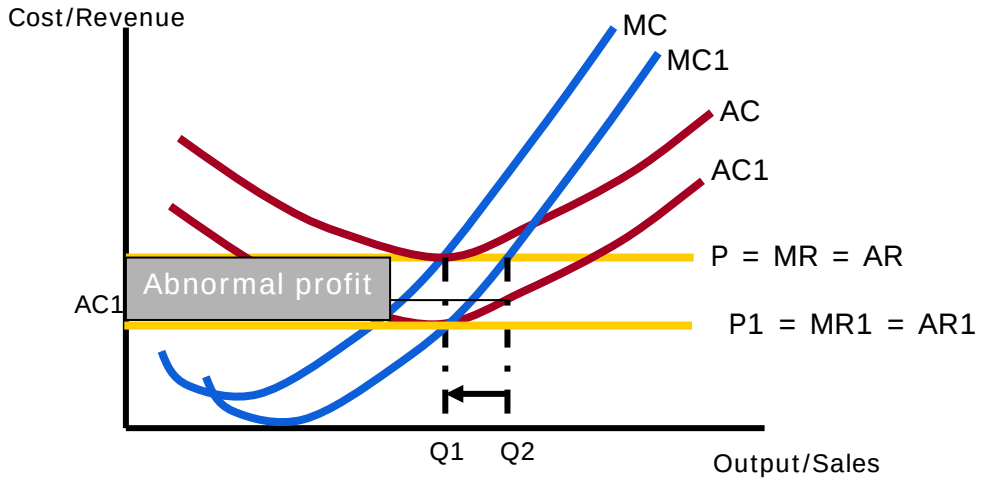
2. The MC is the cost of producing additional (marginal) units of output. It falls at first (due to the law of diminishing returns), but then rises as output rises.

3. The average cost curve is the standard "U"-shaped curve. The MC cuts the AC curve at its lowest point, due to the mathematical relationship between marginal and average values.

4. Given the assumption of profit maximisation, the firm produces at an output where MC = MR (Q1). This output level is a fraction of the total industry supply.

5. At this level of output, the firm is making a normal profit. This is a long-run equilibrium position.

Diagrammatic representation



1. Let us assume that a firm makes some form of modification to its product or gains some form of cost advantage (say a new production method). What would happen?

2. Average and marginal costs could be expected to be lower, but price, in the short run, remains the same.

3. The lower AC and MC would imply that the firm is now earning an abnormal profit (AR>AC), represented by the grey area.

4. Because the model assumes perfect knowledge, the firm gains the advantage for only a short period of time before others copy the idea or are attracted to the industry by the existence of abnormal profits. If new firms enter the industry, supply will increase, price will fall and the firm will be left making a normal profit once again.

Monopolistic or imperfect competition

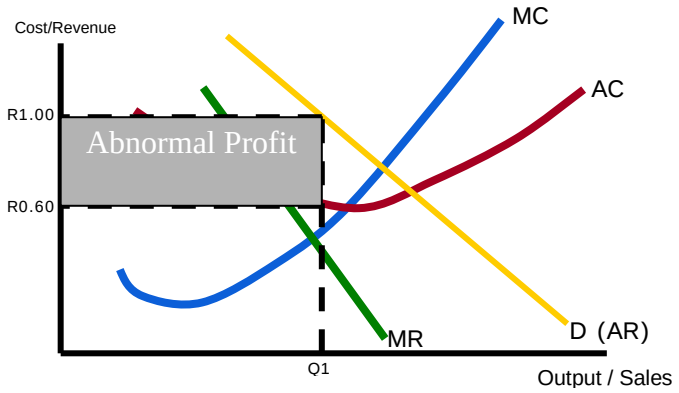
- Where the conditions of perfect competition do not hold, "imperfect competition" will exist.
- Varying degrees of imperfection give rise to varying market structures.
- Monopolistic competition is one of these, and is **not** to be confused with a monopoly!

Characteristics:

- A large number of firms in the industry.
- They may have some element of control over price, due to the fact that they are able to differentiate their product in some way from their rivals' products. Products are therefore close, but not perfect substitutes.
- Entry into and exit from the industry is relatively easy – i.e. there are very few barriers to entry and exit.
- Consumer and producer knowledge is imperfect.

Diagrammatic representations

Implications for the diagram:



1. Marginal cost and average cost will have the same shape. However, because the products are differentiated in some way, the firm will only be able to sell extra output by lowering the price.

2. The demand curve facing the firm will be downward sloping and represents the AR earned from sales.

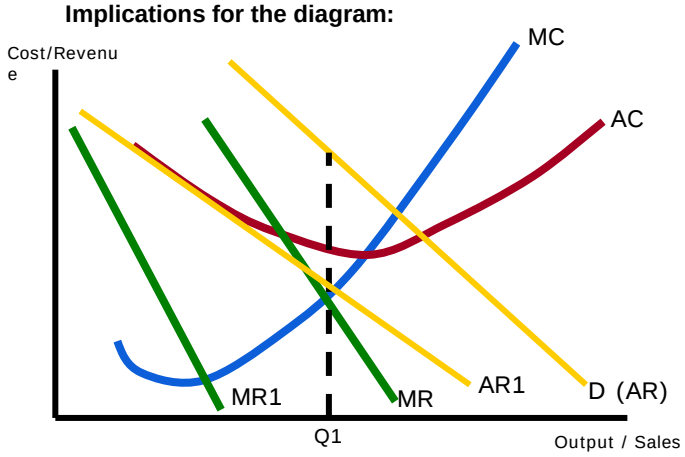
3. Since the additional revenue received from each unit sold falls, the MR curve lies under the AR curve.

4. We assume that the firm produces where MR = MC (profit maximising output). At this output level, AR>AC and the firm makes an abnormal profit (the grey-shaded area).

5. If the firm produces Q1 and sells each unit for R1.00 on average, with the cost (on average) for each unit being 60c, the firm will make 40c x Q1 in abnormal profit.

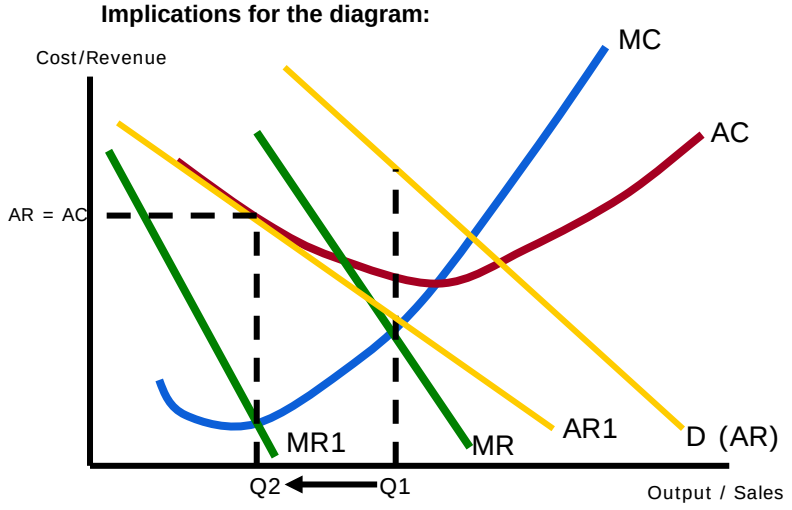
6. This is a short-run equilibrium position for a firm in a monopolistic market structure.

Implications for the diagram:



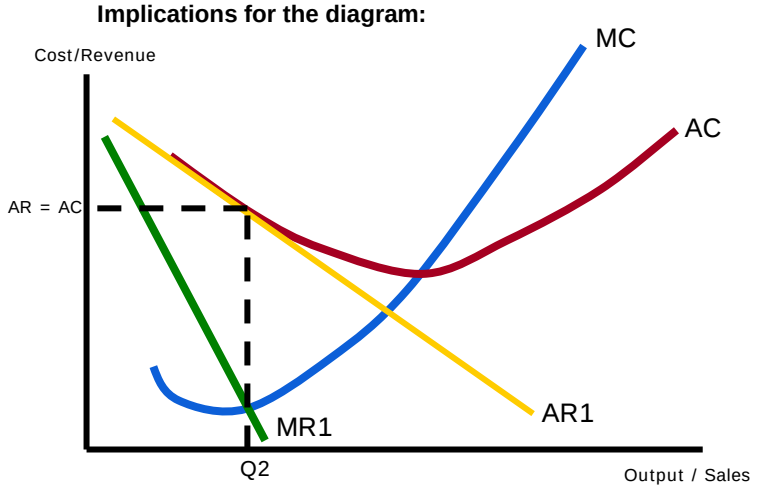
Because there is relative freedom of entry into and exit out of the market, new firms will enter, encouraged by the existence of abnormal profits. New entrants will increase supply, causing the price to fall. As the price falls, the AR and MR curves shift inwards, as there is now less revenue from each sale.

Implications for the diagram:



Note that the existence of more substitutes makes the new AR (D) curve more price elastic. The firm reduces output to a point where MC = MR (Q2). At this output AR = AC and the firm will make a normal profit.

Implications for the diagram:



This is the long-run equilibrium position of a firm in monopolistic competition.

- Some important points about monopolistic competition:
  - It may reflect a wide range of markets.
  - There is not just one point on a scale – i.e. it reflects many degrees of "imperfection".
  - *Examples: Restaurants, plumbers/electricians/local builders, solicitors, private schools, plant-hire firms, insurance brokers, health clubs, hairdressers, funeral directors, estate agents, damp-proofing control firms, etc.*
- In each case there are many firms in the industry.
- Each firm can try to differentiate its product in some way.
- Entry into and exit out of the industry is relatively free.
- Consumers and producers do not have perfect knowledge of the market; the market may indeed be relatively localised. Can you imagine trying to search for the details, prices, reliability, quality of service, etc. of every plumber in South Africa in the event of an emergency?

Oligopoly

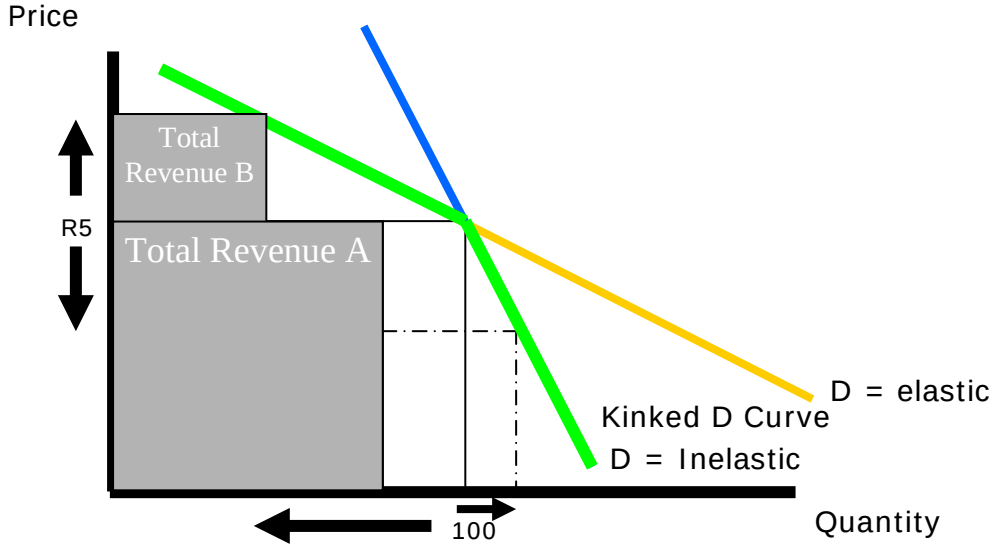
- Oligopoly represents competition between few firms.
  - There may be a large number of firms in the industry, but the industry is dominated by a small number of very large producers.

- Concentration ratio: The proportion of total market sales (share) held by the top 3, 4, 5, etc. firms.
  - A four-firm concentration ratio of 75% means that the top four firms account for 75% of all the sales in the industry.

- Features of an oligopolistic market structure:

– Price may be relatively stable across the industry – i.e. a kinked demand curve?
– There is potential for collusion.
– The behaviour of firms is affected by what they believe their rivals might do – i.e. interdependence of firms.
– Goods could be homogenous or highly differentiated.
– Branding and brand loyalty may be a potent source of competitive advantage.
– Non-price competition may be prevalent.
– Game theory can be used to explain some behaviour.
– The AC curve may be saucer-shaped – i.e. a minimum efficient scale could occur over a large range of output.
– There are high barriers to entry.

The kinked demand curve - an explanation for price stability?



1. The principle of the kinked demand curve rests on the principle that:
   - if a firm raises its price, its rivals will not follow suit ; and
   - if a firm lowers its price, its rivals will all do the same.
2. Assume that the firm is charging a price of R5 and producing an output of 100.

   If it chose to raise the price above R5, its rivals would not follow suit and the firm would effectively face an elastic demand curve for its product (consumers would buy from the cheaper rivals). The percentage change in demand would be greater than the percentage change in price and the TR would fall.

3. If the firm seeks to lower its price to gain a competitive advantage, its rivals will follow suit. Any gains it makes will be quickly lost and the percentage change in demand will be smaller than the percentage reduction in price – i.e. total revenue would fall again as the firm now faces a relatively inelastic demand curve.
4. The firm therefore, effectively faces a "kinked demand curve", forcing it to maintain a stable or rigid pricing structure. Oligopolistic firms may overcome this by engaging in non-price competition.

Duopoly

- A duopoly is a market structure where the industry is dominated by two large producers.
  - Collusion may be a possible feature.
  - Price leadership by the larger of the two firms may exist – i.e. the smaller firm follows the price lead of the larger one.
  - They are highly inter-dependent.
  - High barriers to entry exist.
  - The Cournot Model: A French economist analysed duopoly and suggested that long-run equilibrium would see equal market share and normal profit would be made.
  - In reality, local duopolies may exist.

Monopoly

- A pure monopoly occurs where only one producer exists in the industry.
- In reality, a monopoly rarely exists, as there is always some form of substitute available!
- Where a monopoly exists, only one firm dominates the market.
- Firms may be investigated for examples of monopoly power when market share exceeds 25%
- Use the, term "monopoly power", with care!
- Monopoly power refers to cases where firms influence the market in some way through their behaviour, which is determined by the degree of concentration in the industry. They are:
  - influencing prices;
  - influencing output;
  - erecting barriers to entry;
  - developing pricing strategies to prevent or stifle competition; and
  - they may not pursue profit maximisation, as this encourages unwanted entrants to the market.

A monopoly is sometimes seen as a case of market failure.

Origins of monopoly:

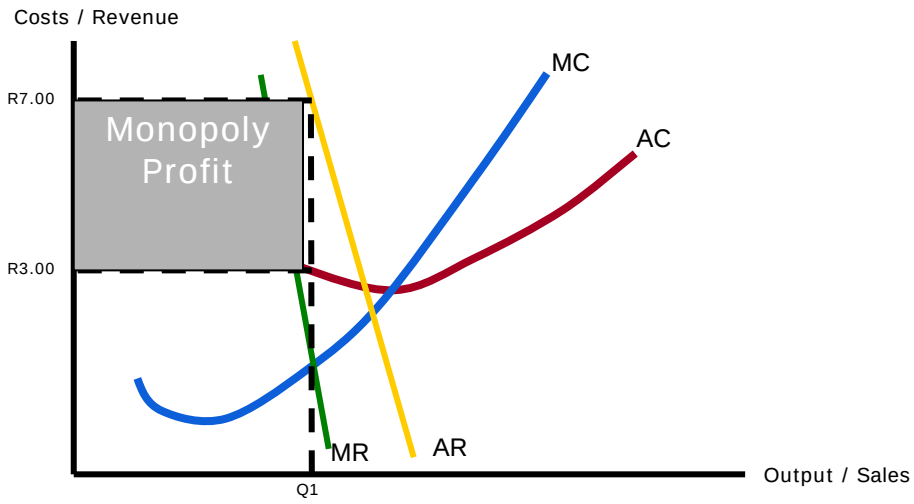
- Growth of the firm.
- Amalgamation, mergers or takeovers.
- Acquiring a patent license.
- Legal means, such as a Royal Charter, nationalisation, a wholly-owned public limited company (plc).

Summary of characteristics of firms exercising monopoly power:

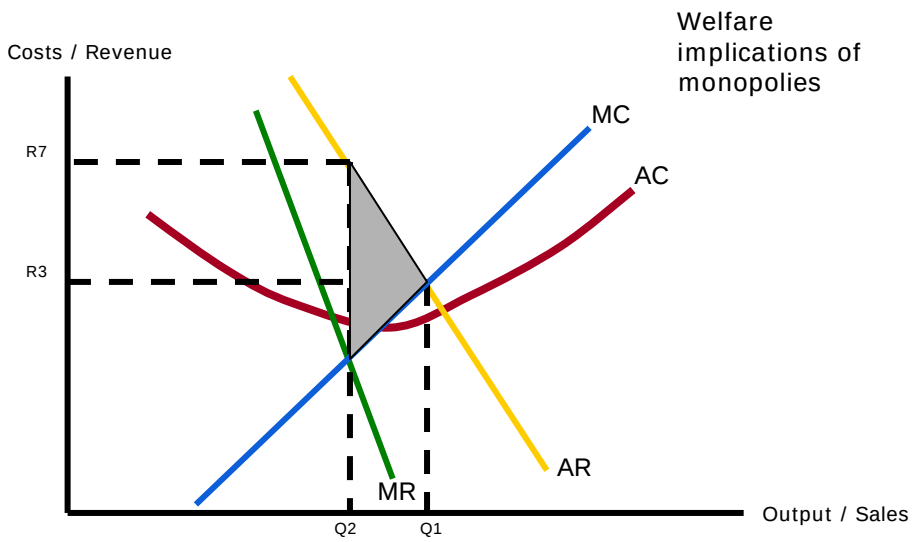
- Price: It could be deemed too high, it may be set to destroy competition (destroyer or predatory pricing), and price discrimination possible.
- Efficiency: It could be inefficient due to a lack of competition (X-inefficiency) or efficiency could be higher due to the availability of high profits.
  - Innovation: It could be high because of the promise of high profits. It possibly encourages high investment in research and development (R&D).
  - Collusion: Makes it possible to maintain monopoly power of key firms in the industry.
  - There could be high levels of branding, advertising and non-price competition.

  - Problems with models: a reminder:
    - It is often difficult to distinguish between a monopoly and an oligopoly, as both may exhibit behaviour that reflects monopoly power.
    - Monopolies and oligopolies do not necessarily aim for a traditional assumption of profit maximisation.
    - The degree of contestability of the market may influence behaviour.

– Monopolies are not always "bad". It may be desirable in some cases, but may need strong regulation.
– Monopolies do not have to be big. They could exist locally.



1. The AR (D) curve of a monopolist is likely to be relatively price inelastic. Output is assumed to be at profit maximising output. (Note: Caution is necessary here, as not all monopolists may aim for profit maximisation!)
2. Given the barriers to entry, the monopolist will be able to exploit abnormal profits in the long run, as entry to the market is restricted.
3. This is both the short-run and long-run equilibrium position of a monopoly.



The value of the grey-shaded triangle represents the total welfare loss to society. This is sometimes referred to as the "dead-weight welfare loss".

Contestable markets

- This theory was developed by William J. Baumol, John Panzar and Robert Willig (1982).
- It helped to fill important gaps in market structure theory.
- Perfectly contestable market – i.e. the pure form is not common in reality but a benchmark to explain firms' behaviour.

- Key characteristics:

    - Firms' behaviour is influenced by the threat of new entrants to the industry.
    - There are no barriers to entry or exit.
    - There are no sunk costs.
    - Firms may deliberately limit the profits made to discourage new entrants – i.e. entry limit pricing.
    - Firms may attempt to erect artificial barriers to entry, for example:

- Overcapacity provides the opportunity to flood the market and drive the price down in the event of a threat of entry.
- Aggressive marketing and branding strategies are used to "tighten" up the market.
- The potential for predatory or destroyer pricing exists.
- Finding ways of reducing costs and increasing efficiency to gain a competitive advantage.
- "Hit and Run" tactics: Enter the industry, take the profit and get out quickly. (This is possible due to the freedom of entry and exit.)
- Cream-skimming: Identifying parts of the market that are high in added value and exploiting those markets.

- Examples of markets exhibiting contestability characteristics:

    - Financial services.
    - Airlines – especially flights on domestic routes.
    - The computer industry: ISPs, software, web development.
    - Energy suppliers.
    - The postal service?

Final reminders about market structures:

- Models can be used as a comparison. They are not necessarily meant to BE reality!
- When looking at real-world examples, focus on the behaviour of the firm in relation to what the model predicts would happen. That provides the basis for an analysis and evaluation of the real-world situation.
- Regulation, or the threat of regulation, may well affect the way in which a firm behaves.
- Remember that these models are based on certain assumptions. In the real world, some of these assumptions may not be valid, but models allow us to draw comparisons and compare contrasts.
- The way that governments deal with firms may be based on the general assumption that more competition is better than less!

Acknowledgements

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