

## 1: Production Function: Meaning, Definitions and Features

*Meaning of Production: Since the primary purpose of economic activity is to produce utility for individuals, we count as production during a time period all activity which either creates utility during the period or which increases ability of the society to create utility in the future.*

Production output is created in the real process, gains of production are distributed in the income distribution process and these two processes constitute the production process. The production process and its sub-processes, the real process and income distribution process occur simultaneously, and only the production process is identifiable and measurable by the traditional accounting practices. The real process and income distribution process can be identified and measured by extra calculation, and this is why they need to be analyzed separately in order to understand the logic of production and its performance. Real process generates the production output from input, and it can be described by means of the production function. It refers to a series of events in production in which production inputs of different quality and quantity are combined into products of different quality and quantity. Products can be physical goods, immaterial services and most often combinations of both. The characteristics created into the product by the producer imply surplus value to the consumer, and on the basis of the market price this value is shared by the consumer and the producer in the marketplace. This is the mechanism through which surplus value originates to the consumer and the producer likewise. Surplus values to customers cannot be measured from any production data. Instead the surplus value to a producer can be measured. It can be expressed both in terms of nominal and real values. The real surplus value to the producer is an outcome of the real process, real income, and measured proportionally it means productivity. Since then it has been a cornerstone in the Finnish management accounting theory. The magnitude of the change in income distribution is directly proportionate to the change in prices of the output and inputs and to their quantities. Productivity gains are distributed, for example, to customers as lower product sales prices or to staff as higher income pay. The production process consists of the real process and the income distribution process. A result and a criterion of success of the owner is profitability. The profitability of production is the share of the real process result the owner has been able to keep to himself in the income distribution process. Factors describing the production process are the components of profitability , i. They differ from the factors of the real process in that the components of profitability are given at nominal prices whereas in the real process the factors are at periodically fixed prices. Monetary process refers to events related to financing the business. Market value process refers to a series of events in which investors determine the market value of the company in the investment markets. Production growth and performance[ edit ] Main article: Economic growth Economic growth is often defined as a production increase of an output of a production process. It is usually expressed as a growth percentage depicting growth of the real production output. The real output is the real value of products produced in a production process and when we subtract the real input from the real output we get the real income. The real output and the real income are generated by the real process of production from the real inputs. The real process can be described by means of the production function. The production function is a graphical or mathematical expression showing the relationship between the inputs used in production and the output achieved. Both graphical and mathematical expressions are presented and demonstrated. The production function is a simple description of the mechanism of income generation in production process. It consists of two components. These components are a change in production input and a change in productivity. The Value T2 value at time 2 represents the growth in output from Value T1 value at time 1. Each time of measurement has its own graph of the production function for that time the straight lines. The output measured at time 2 is greater than the output measured at time one for both of the components of growth: The portion of growth caused by the increase in inputs is shown on line 1 and does not change the relation between inputs and outputs. The portion of growth caused by an increase in productivity is shown on line 2 with a steeper slope. So increased productivity represents greater output per unit of input. The growth of production output does not reveal anything about the performance of the production process. Because the income from production is generated in the real process, we call it the real

income. The real income generation follows the logic of the production function. Two components can also be distinguished in the income change: The income growth caused by increased production volume is determined by moving along the production function graph. The income growth corresponding to a shift of the production function is generated by the increase in productivity. The change of real income so signifies a move from the point 1 to the point 2 on the production function above. When we want to maximize the production performance we have to maximize the income generated by the production function. The sources of productivity growth and production volume growth are explained as follows. Productivity growth is seen as the key economic indicator of innovation. The successful introduction of new products and new or altered processes, organization structures, systems, and business models generates growth of output that exceeds the growth of inputs. This results in growth in productivity or output per unit of input. Income growth can also take place without innovation through replication of established technologies. With only replication and without innovation, output will increase in proportion to inputs. They show that the great preponderance of economic growth in the US since involves the replication of existing technologies through investment in equipment, structures, and software and expansion of the labor force. Further they show that innovation accounts for only about twenty percent of US economic growth. In the case of a single production process described above the output is defined as an economic value of products and services produced in the process. When we want to examine an entity of many production processes we have to sum up the value-added created in the single processes. This is done in order to avoid the double accounting of intermediate inputs. Value-added is obtained by subtracting the intermediate inputs from the outputs. It is widely used as a measure of the economic growth of nations and industries. Absolute total and average income[ edit ] The production performance can be measured as an average or an absolute income. Expressing performance both in average avg. The absolute income of performance is obtained by subtracting the real input from the real output as follows: With the aid of the production model we can perform the average and absolute accounting in one calculation. Maximizing production performance requires using the absolute measure, i. Maximizing productivity also leads to the phenomenon called " jobless growth " This refers to economic growth as a result of productivity growth but without creation of new jobs and new incomes from them. A practical example illustrates the case. When a jobless person obtains a job in market production we may assume it is a low productivity job. As a result, average productivity decreases but the real income per capita increases. Furthermore, the well-being of the society also grows. This example reveals the difficulty to interpret the total productivity change correctly. Unfortunately we do not know in practice on which part of the production function we are. Therefore, a correct interpretation of a performance change is obtained only by measuring the real income change. Production models[ edit ] A production model is a numerical description of the production process and is based on the prices and the quantities of inputs and outputs. There are two main approaches to operationalize the concept of production function. We can use mathematical formulae, which are typically used in macroeconomics in growth accounting or arithmetical models, which are typically used in microeconomics and management accounting. We use here arithmetical models because they are like the models of management accounting, illustrative and easily understood and applied in practice. Furthermore, they are integrated to management accounting, which is a practical advantage. A major advantage of the arithmetical model is its capability to depict production function as a part of production process. Consequently, production function can be understood, measured, and examined as a part of production process. There are different production models according to different interests. Here we use a production income model and a production analysis model in order to demonstrate production function as a phenomenon and a measurable quantity. Production income model[ edit ] Profitability of production measured by surplus value Saari ,3 The scale of success run by a going concern is manifold, and there are no criteria that might be universally applicable to success. Nevertheless, there is one criterion by which we can generalise the rate of success in production. This criterion is the ability to produce surplus value. As a criterion of profitability, surplus value refers to the difference between returns and costs, taking into consideration the costs of equity in addition to the costs included in the profit and loss statement as usual. Surplus value indicates that the output has more value than the sacrifice made for it, in other words, the output value is higher than the value

production costs of the used inputs. The table presents a surplus value calculation. We call this set of production data a basic example and we use the data through the article in illustrative production models. The basic example is a simplified profitability calculation used for illustration and modelling. Even as reduced, it comprises all phenomena of a real measuring situation and most importantly the change in the output-input mix between two periods. In practice, there may be hundreds of products and inputs but the logic of measuring does not differ from that presented in the basic example. In this context we define the quality requirements for the production data used in productivity accounting. The most important criterion of good measurement is the homogenous quality of the measurement object. If the object is not homogenous, then the measurement result may include changes in both quantity and quality but their respective shares will remain unclear. In productivity accounting this criterion requires that every item of output and input must appear in accounting as being homogenous. In other words, the inputs and the outputs are not allowed to be aggregated in measuring and accounting. If they are aggregated, they are no longer homogenous and hence the measurement results may be biased. Both the absolute and relative surplus value have been calculated in the example.

## 2: Means of production - Wikipedia

*Economic well-being is created in a production process, meaning all economic activities that aim directly or indirectly to satisfy human wants and needs. The degree to which the needs are satisfied is often accepted as a measure of economic well-being.*

It amalgamates past approaches to economic theory, such as the concept of labor as a factor of production from socialism, into a single definition. Land has a broad definition as a factor of production and can take on various forms, from agricultural land to commercial real estate to the resources available from a particular piece of land. Natural resources, such as oil and gold, can be extracted and refined for human consumption from land. Cultivation of crops on land by farmers increases its value and utility. While land is an essential component of most ventures, its importance can diminish or increase based on industry. For example, a technology company can easily begin operations with zero investment in land. On the other hand, land is the most significant investment for a real estate venture. Labor refers to the effort expended by an individual to bring a product or service to the market. Again, it can take on various forms. For example, the construction worker at a hotel site is part of labor as is the waiter who serves guests or the receptionist who enrolls them into the hotel. Within the software industry, labor refers to the work done by project managers and developers in building the final product. Even an artist involved in making art, whether it is a painting or a symphony, is considered labor. Production workers are paid for their time and effort in wages that depend on their skill and training. Labor by an uneducated and untrained worker is typically paid at low prices. Skilled and trained workers are referred to as human capital and are paid higher wages because they bring more than their physical capacity to the task. Countries that are rich in human capital experience increased productivity and efficiency. The difference in skill levels and terminology also helps companies and entrepreneurs arbitrage corresponding disparities in pay scales. This can result in transformation of factors of production for entire industries. An example of this is the change in production processes in the Information Technology IT industry after jobs were outsourced to countries with a trained workforce and significantly lower salaries. Capital In economics, capital typically refers to money. But money is not a factor of production because it is not directly involved in producing a good or service. Instead it facilitates the processes used in production by enabling entrepreneurs and company owners to purchase capital goods or land or pay wages. As a factor of production, capital refers to the purchase of goods made with money in production. For example, a tractor purchased for farming is capital. Along the same lines, desks and chairs used in an office are also capital. It is important to distinguish personal and private capital in factors of production. A personal vehicle used to transport family is not considered a capital good. But a commercial vehicle that is expressly used for official purposes is considered a capital good. During an economic contraction or when they suffer losses, companies cut back on capital expenditure to ensure profits. During periods of economic expansion, however, they invest in new machinery and equipment to bring new products to market. An illustration of the above is the difference in markets for robots in China versus the United States after the financial crisis. China experienced a multiyear growth cycle after the crisis and its manufacturers invested in robots to improve productivity at their facilities and meet growing market demands. As a result, the country became the biggest market for robots. Manufacturers within the United States, which had been in the throes of an economic recession after the financial crisis, cut back on their investments related to production due to tepid demand. Entrepreneurship Entrepreneurship is the secret sauce that combines all the other factors of production into a product or service for the consumer market. An example of entrepreneurship is the evolution of social media behemoth Facebook Inc. After Facebook became popular and spread across campuses, Zuckerberg realized that he needed help to build the product and, along with co-founder Eduardo Saverin recruited additional employees. He hired two people, an engineer Dustin Moskovitz and a spokesperson Chris Hughes , who both allocated hours to the project, meaning that their invested time became a factor of production. Continued popularity of the product meant that Zuckerberg also had to scale technology and operations. He raised venture capital money to rent office space, hire more employees, and purchase additional server space for development. At first, there was

no need for land. However, as business continued to grow, Facebook built its own office space and data centers. Each of these required significant real estate and capital investments. The retail coffee chain needs all four factors of production: While large companies make for excellent examples, a majority of companies within the United States are small businesses started by entrepreneurs. Because entrepreneurs are vital for economic growth, countries are creating the necessary framework and policies in order to make it easier for them to start companies.

**Ownership of Factors of Production** The definition for factors of production in economic systems presumes ownership lies with households, who lend or lease them to entrepreneurs and organizations. But that is a theoretical construct and is rarely the case in practice. With the exception of labor, ownership for factors of production varies based on industry and economic system. For example, a firm operating in the real estate industry typically owns significant parcels of land. But retail corporations or shops lease land for extended periods of time. Capital also follows a similar model in that it can be owned or leased from another party. Under no circumstances, however, is labor owned by firms. Ownership of the factors of production also differs based on the economic system. For example, private enterprise and individuals own most of the factors of production in capitalism. However, collective good is the predominating principle in socialism. As such, factors of production, such as land and capital, is owned by workers.

**Role of Technology In Factors of Production** While it is not directly listed as a factor, technology plays an important role in influencing production. Increasingly, technology is responsible for the difference in efficiency between firms. To that end, technology, like money, is a facilitator of the factors of production. Introduction of technology into a labor or capital process makes it more efficient. For example, use of robots in manufacturing has the potential to improve productivity and output. Similarly, use of kiosks in self-serve restaurants can help firms cut back on their labor costs. Typically, Solow Residual or Total Factor Productivity TFP , which measures the residual output that remains unaccounted for from the four factors of production, increases when technological processes or equipment are applied to production.

### 3: What Is the Meaning of Specialization in Economics? | [www.enganchecubano.com](http://www.enganchecubano.com)

*Economics is the academic study of the production, distribution, and consumption of goods and services. How It Works Economics can be broken down into two main disciplines: macroeconomics and microeconomics.*

Meaning, Definition, Types and Factors Article Shared by Let us make an in-depth study of the meaning, definition, types and factors of production. Since the primary purpose of economic activity is to produce utility for individuals, we count as production during a time period all activity which either creates utility during the period or which increases ability of the society to create utility in the future. Business firms are important components units of the economic system. They are artificial entities created by individuals for the purpose of organising and facilitating production. The essential characteristics of the business firm is that it purchases factors of production such as land, labour, capital, intermediate goods, and raw material from households and other business firms and transforms those resources into different goods or services which it sells to its customers, other business firms and various units of the government as also to foreign countries. According to Bates and Parkinson: This definition makes it clear that, in economics, we do not treat the mere making of things as production. What is made must be designed to satisfy wants. What is not Production? The making or doing of things which are not wanted or are made just for the fun of it does not qualify as production. On the other hand, all jobs which do aim at satisfying wants are part of production. Those who provide services Such as hair-dressers, solicitors, bus drivers, postmen, and clerks are as much a part of the process of satisfying wants as are farmers, miners, factory workers and bakers. The test of whether or not any activity is productive is whether or not anyone will buy its end-product. If we will buy something we must want it; if we are not willing to buy it then, in economic terms, we do not want it. So from our above definition it is clear that many valuable activities such as the work done by people in their own houses and gardens the so-called do it yourself exercise and all voluntary work such as free coaching, free-nursing, collection of subscription for a social cause such as flood-relief or earthquake- relief immensely add to the quality of life but there is no practical way of measuring their economic worth value. Three Types of Production: For general purposes, it is necessary to classify production into three main groups: This includes production in manufacturing industry, viz. They are generally described as manufacturing and construction industries, such as the manufacture of cars, furnishing, clothing and chemicals, as also engineering and building. Industries in the tertiary sector produce all those services which enable the finished goods to be put in the hands of consumers. In fact, these services are supplied to the firms in all types of industry and directly to consumers. Examples cover distributive traders, banking, insurance, transport and communications. Government services, such as law, administration, education, health and defence, are also included. Any activity connected with money earning and money-spending is called an economic activity. Production is an important economic activity. It results in the output creation of an enormous variety of economic goods and services. Production of a commodity or service requires the use of certain resources or factors of production. Since most of the resources necessary to carry on production are scarce relative to demand for them they are called economic resources. Resources, which we shall call factors of production, are combined in various ways, by firms or enterprises, to produce an annual flow of goods and services. A Classification of Factors of Production: Each factor gets a reward on the basis of its contribution to the production process, as shown in the table. In fact, the resources of any community, referred to as its factors of production, can be classified in a number of ways, but it is common to group them according to certain characteristics which they possess. If we keep in mind that the production of goods and services is the result of people working with natural resources and with equipment such as tools, machinery and buildings, a generally acceptable classification can readily be derived. The people involved in production use their skills and efforts to make things and do things that are wanted. This human effort is known as labour. In other words, labour represents all human resources. The natural resources people use are called land. And the equipment they use is called capital, which refers to all man-made resources. The first three factors—land; labour and capital do not work independently or in isolation. There is need to combine these factors and co-ordinate their activities. This two-fold function is performed by the organiser or the

entrepreneur. But this is not the only function of the entrepreneur. In fact, production can never take place without some risk being involved; the decision to produce something has to be taken in anticipation of demand and there must be some element of uncertainty about that demand materialising. Thus, risk taking or enterprise can be considered as a fourth factor of production, and those responsible for taking these risks are usually referred to as entrepreneurs see the box below which is self-explanatory. We may now study the nature and characteristics of four factors against this backdrop. But before we proceed further we may make a passing reference to factor mobility. In economics the term land is used in a broad sense to refer to all natural resources or gifts of nature. As the Penguin Dictionary of Economics has put it: From the above definition, it is quite clear that land includes farming and building land, forests, and mineral deposits. Fisheries, rivers, lakes, etc. In other words, land includes not only the land surface, but also the fish in the sea, the heat of the sun that helps to dry grapes and change them into resins, the rain that helps farmers to grow crops, the mineral wealth below the surface of the earth and so on. Land has certain important characteristics: The total land area of earth in the sense of the surface area available to men is fixed. Therefore, the supply of lands is strictly limited. It is, no doubt, possible to increase the supply of land in a particular region to some extent through reclamation of land from sea areas or deforestation. But this is often offset by various kinds of soil erosion. The end result is that changes in the total area are really insignificant. Of course, the effective supply of agricultural farm land can be increased by drainage, irrigation and use of fertilisers. In consequence, the prices of land and natural resources tend to be extremely sensitive to changes in consumer demand, rising sharply if they become more desirable. In this context, we may refer to the sharp increase in the price of building land in Bombay in the last five decades. Although the total supply of land is fixed, land has alternative uses. The same plot of land can be used to set up factories or to grow wheat or sugarcane or even to build a stadium. This means that the supply of land to a particular use is fairly if not completely elastic. For example, the amount of land used for growing tomato can be increased by growing less of some other crop e. The supply of building land can be increased by reducing the area under agricultural operation. No cost of production: Since land is a gift of nature, it has no cost of production. Since land is already in existence, no costs are to be incurred in creating it. In this sense, land differs from both labour which has to be reared, educated and trained and capital which has to be created by using labour and other scarce resources or by spending money. However, the above argument is not valid today. In fact, much of the services of land required expenditure of resources to obtain or maintain them and hence they are often called capital i. Another important feature of land is that it is not homogeneous. All grades plots of land are not equally productive or fertile. Some grades of land are more productive than others. And Ricardo argued that rent arises not only due to scarcity of land as a factor but also due to differences in the fertility of the soil. Operation of the law of diminishing return: Finally, we may refer to a special feature of land, not shared by other factors. In fact, production on land is subject to the operation of the law of diminishing return. This simply means that as more and more workers are employed on the same plot of land, output per worker will gradually fall because each additional worker will make less and less contribution to total product. The law of diminishing return refers to diminishing marginal product of the variable factor. Land is not geographically mobile. But, it is occupationally mobile. In most parts of India, for example, land has many alternative uses. Some of the land, for example, in hill area, of say, Shillong, or Darjeeling, has an extremely limited degree of occupational mobility, being useful perhaps for sheep grazing, golf course or as a centre of tourism. The income received by the owner of land is known as rent. It may be noted that rent is usually paid for something more than the use of land or another natural resource, but includes also an element of payment for another factor which is involved in making the resource available in a usable form. An example of this is the labour which assists in the process of bringing minerals to the surface. Iron ore is of no use while it is still under the ground. Productivity and value of land can be increased if it is improved with fertilisers, irrigation and the erection of fences and buildings. So rent paid for this kind of fertile land is rather a mixed type of factor income. Like land, labour is also a primary factor of production. The distinctive feature of the factor of production, called labour, is that it provides a human service. It refers to human effect of any kind—physical and mental—which is directed to the production of goods and services. As such, there are different types of labour input, varying in effort and skill content, and in particular types of skill

## MEANING OF PRODUCTION IN ECONOMICS pdf

content. The term covers clerical, managerial and administrative functions as well as skilled and unskilled manual work. Labour differs from land in an important way. While land is a stock, labour is a flow. So labour is perishable. A related, but important point should be noted in this context.

## 4: Production (economics) - Wikipedia

*This topic discusses all the theories of production. This involves the use of production factors in producing the most effective level. In addition, manufacturers also need to use the correct scale to ensure that the resulting output to fulfill the law of diminishing marginal returns.*

Economics majors study financial systems and analyze market influences like interest rates, taxes and inflation. Rooted in mathematical models, economics majors work in finance, investment firms, government agencies and business fields. An average growth of 6 percent is expected between now and There are a number of specializations available for economics majors. Each specialization will prepare you to work in a particular career field and gain focused expertise. As an economic policy expert, you will likely work for the government using research and analysis to guide economic decision making. You could also serve as an economic consultant, or a consultant for an insurance company or research institute. Courses include public microeconomics, economics of human resources, transportation economics, energy economics and international microeconomics. Law and Economic History Studying law and economic history will allow you to gain an understanding of the historical influences on the economy and economic trends that could affect future economic changes. These include antitrust law, bankruptcy, securities law and economic reasoning used in past decisions. Courses include empirical analysis, economic analysis for lawyers, economic reasoning and analytical methods. This specialization will enable you to work in government, the private sector or in an academic setting International Macrofinance If your interest is in macrofinance, you will work in economic risk management, investment banking or international market analysis. This specialization provides knowledge about international pricing, trade and exchange rates. Zeroing in on asset structure, international macrofinance looks at economic models in other countries and uses this as a context for capital asset pricing. Courses include world economic history, international macroeconomics, economy of East Asia and financial economics. Behavior and Strategy An economic specialty in behavior and strategy focuses on decision-making, collaboration and conflict, and the social construct of economics in an organization. Courses include decision making, industrial organization, economics of uncertainty and theories of strategic behavior. This specialization will prepare you to be a market research analyst or serve as a consultant. Poverty and Inequality An economic specialization in poverty and inequality studies the individual and systemic levels of economics. This specialization delves into the economic aspects of poverty and inequality. If you would like to work for a nonprofit organization or as an analyst for an advocacy group, this is an ideal career path. Courses include economic development, public microeconomics, poverty and inequality in public policy, and the economics of human resources. References 2 Bureau of Labor Statistics: Economists About the Author Dr. She is the author and co-author of 12 books focusing on customer service, diversity and team building. She serves as a consultant for business, industry and educational organizations.

## 5: Production: Meaning, Definition, Types and Factors

*Factors of production is an economic term that describes the inputs used in the production of goods or services in order to make an economic profit. They include any resource needed for the.*

What Is the Meaning of Specialization in Economics? A key decision facing workers, firms and nations is what goods to produce. The economic concept of specialization helps answer this question. Under specialization, economic actors concentrate their skills on tasks at which they are the most skilled. Specialization has both micro- and macroeconomic applications. Specialization in the Workplace Specialization in an economic sense refers to individuals and organizations focusing on the limited range of production tasks they perform best. This specialization requires workers to give up performing other tasks at which they are not as skilled, leaving those jobs to others who are better suited for them. One worker measures wire, another cuts it, one points it, others make the head and so on. Through this process, workers produced thousands more pins than if each worker made whole pins independently. Specialization increases output because workers do not lose time shifting among different tasks. Smith also believed workers with specialties were more likely to innovate, to create tools or machinery to make their tasks even more efficient. Video of the Day Brought to you by Techwalla Brought to you by Techwalla Benefits The benefits of specialization extend beyond individual workers as well. Firms that specialize in their particular products can produce larger quantities to sell. Those firms and their employees use the proceeds from the sale of those goods to buy needed goods produced by other workers and companies. Economic Thinking While Adam Smith saw the advantages of specialization and division of labor, he saw a downside to them as well. He feared that monotonous assembly lines in which workers performed single tasks throughout the day could sap their creativity and spirit. He saw education as a remedy and believed that education fostered creativity and innovation in workers. He saw monotonous production tasks, coupled with subsistence wages that do not represent the full value of labor, as factors that increase worker alienation, eventually resulting in a worker-led uprising against the capitalist class. Macroeconomic Specialization Specialization in economics is not limited to individuals and firms, the realm of microeconomics. It also has applications in macroeconomics, which studies the economic actions of nations, regions and entire economies. In a macroeconomic context, specialization means nations concentrate on producing the goods in which they have the most advantage while engaging in trade with other countries to obtain other goods. David Ricardo, an economist of the 18th and early 19th centuries, argued for specialization based on comparative advantage, which helps determine whether it is more beneficial to domestically produce a good or import it. Suppose, for example, that the United States produces clothing and computers more cheaply than India. While the United States would appear to have an absolute advantage, it may not have a comparative advantage, which measures the ability to produce in terms of opportunity cost. Because resources of production are limited, the opportunity cost of producing computers means fewer clothes are made. Compared to what has to be sacrificed, the country should specialize in producing the good in which it has a comparative advantage, while importing the other product.

## 6: What Is the Meaning of Specialization in Economics? | Bizfluent

*The total market value of all the goods and services produced within the borders of a nation during a specified period. Total value of all goods and services produced domestically annually by a country and is equal to gross national product less receipts from investment incomes from abroad.*

Meaning, Definitions and Features! Production is the result of co-operation of four factors of production viz. This is evident from the fact that no single commodity can be produced without the help of any one of these four factors of production. Therefore, the producer combines all the four factors of production in a technical proportion. The aim of the producer is to maximize his profit. For this sake, he decides to maximize the production at minimum cost by means of the best combination of factors of production. The producer secures the best combination by applying the principles of equi-marginal returns and substitution. According to the principle of equi-marginal returns, any producer can have maximum production only when the marginal returns of all the factors of production are equal to one another. For instance, when the marginal product of the land is equal to that of labour, capital and organisation, the production becomes maximum. Meaning of Production Function: In simple words, production function refers to the functional relationship between the quantity of a good produced output and factors of production inputs. Watson In this way, production function reflects how much output we can expect if we have so much of labour and so much of capital as well as of labour etc. In other words, we can say that production function is an indicator of the physical relationship between the inputs and output of a firm. The reason behind physical relationship is that money prices do not appear in it. However, here one thing that becomes most important to quote is that like demand function a production function is for a definite period. It shows the flow of inputs resulting into a flow of output during some time. The production function of a firm depends on the state of technology. With every development in technology the production function of the firm undergoes a change. The new production function brought about by developing technology displays same inputs and more output or the same output with lesser inputs. Sometimes a new production function of the firm may be adverse as it takes more inputs to produce the same output. Mathematically, such a basic relationship between inputs and outputs may be expressed as: Hence, the level of output  $Q$ , depends on the quantities of different inputs  $L$ ,  $C$ ,  $N$  available to the firm. In the simplest case, where there are only two inputs, labour  $L$  and capital  $C$  and one output  $Q$ , the production function becomes. As long as the natural laws of technology remain unchanged, the production function remains unchanged. This is a technological relation showing for a given state of technological knowledge how much can be produced with given amounts of inputs. Lipsey Thus, from the above definitions, we can conclude that production function shows for a given state of technological knowledge, the relation between physical quantities of inputs and outputs achieved per period of time. Features of Production Function: Following are the main features of production function: The factors of production or inputs are substitutes of one another which make it possible to vary the total output by changing the quantity of one or a few inputs, while the quantities of all other inputs are held constant. It is the substitutability of the factors of production that gives rise to the laws of variable proportions. The factors of production are also complementary to one another, that is, the two or more inputs are to be used together as nothing will be produced if the quantity of either of the inputs used in the production process is zero. The principles of returns to scale is another manifestation of complementarity of inputs as it reveals that the quantity of all inputs are to be increased simultaneously in order to attain a higher scale of total output. It reveals that the inputs are specific to the production of a particular product. The specificity may not be complete as factors may be used for production of other commodities too. This reveals that in the production process none of the factors can be ignored and in some cases ignorance to even slightest extent is not possible if the factors are perfectly specific. Production involves time; hence, the way the inputs are combined is determined to a large extent by the time period under consideration. The greater the time period, the greater the freedom the producer has to vary the quantities of various inputs used in the production process. In the production function, variation in total output by varying the quantities of all inputs is possible only in the long run whereas the variation in total output by varying the

quantity of single input may be possible even in the short run.

## 7: Meaning of Production: The Production of Wealth: Science of Political Economy: Henry George

*In this lesson, you'll learn about factors of production in economics, including their definition, their importance, and some examples. You'll also have a chance to take a short quiz.*

See Article History Alternative Title: The theory involves some of the most fundamental principles of economics. These include the relationship between the prices of commodities and the prices or wages or rents of the productive factors used to produce them and also the relationships between the prices of commodities and productive factors, on the one hand, and the quantities of these commodities and productive factors that are produced or used, on the other. The various decisions a business enterprise makes about its productive activities can be classified into three layers of increasing complexity. The first layer includes decisions about methods of producing a given quantity of the output in a plant of given size and equipment. It involves the problem of what is called short-run cost minimization. The second layer, including the determination of the most profitable quantities of products to produce in any given plant, deals with what is called short-run profit maximization. The third layer, concerning the determination of the most profitable size and equipment of plant, relates to what is called long-run profit maximization. Minimization of short-run costs The production function However much of a commodity a business firm produces, it endeavours to produce it as cheaply as possible. This task is best understood in terms of what is called the production function,  $y = f(x_1, x_2, \dots, x_n, k_1, k_2, \dots, k_m)$ . It states the amount of product that can be obtained from each and every combination of factors. Here,  $y$  denotes the quantity of output. The firm is presumed to use  $n$  variable factors of production; that is, factors like hourly paid production workers and raw materials, the quantities of which can be increased or decreased. In the formula the quantity of the first variable factor is denoted by  $x_1$  and so on. The firm is also presumed to use  $m$  fixed factors, or factors like fixed machinery, salaried staff, etc. The available quantity of the first fixed factor is indicated in the formula by  $k_1$  and so on. The entire formula expresses the amount of output that results when specified quantities of factors are employed. It must be noted that though the quantities of the factors determine the quantity of output, the reverse is not true, and as a general rule there will be many combinations of productive factors that could be used to produce the same output. Finding the cheapest of these is the problem of cost minimization. The cost of production is simply the sum of the costs of all of the various factors. It can be written: The discussion will deal first with variable cost. The principles involved in selecting the cheapest combination of variable factors can be seen in terms of a simple example. Since there are only two variable factors, this production function can be portrayed graphically in a figure known as an isoquant diagram Figure 1. In the graph, goldsmith-hours per month are plotted horizontally and the number of feet of gold wire used per month vertically. Each of the curved lines, called an isoquant, will then represent a certain number of necklace chains produced. The data displayed show that goldsmith-hours plus feet of gold wire can produce necklace chains. But there are other combinations of variable inputs that could also produce necklace chains per month. If the goldsmiths work more carefully and slowly, they can produce chains from feet of wire; but to produce so many chains more goldsmith-hours will be required, perhaps. The other two isoquants shown are interpreted similarly. It is obvious that many more isoquants, in principle an infinite number, could also be drawn. This diagram is a graphic display of the relationships expressed in the production function. Substitution of factors The isoquants also illustrate an important economic phenomenon: This means that one variable factor can be substituted for others; as a general rule a more lavish use of one variable factor will permit an unchanged amount of output to be produced with fewer units of some or all of the others. In the example above, labour was literally as good as gold and could be substituted for it. If it were not for factor substitution there would be no room for further decision after  $y$ , the number of chains to be produced, had been established. The shape of the isoquants shown, for which there is a good deal of empirical support, is very important. In moving along any one isoquant, the more of one factor that is employed, the less of the other will be needed to maintain the stated output; this is the graphic representation of factor substitutability. But there is a corollary: In the diagram, if feet of gold wire are indicated by  $x_1$  and goldsmith-hours by  $x_2$ , then the marginal rate of substitution is shown by the steepness the negative of the slope of the isoquant; and it

will be seen that it diminishes steadily as  $x_2$  increases because it becomes harder and harder to economize on the use of gold simply by taking more care. The remainder of the analysis rests heavily on the assumption that diminishing marginal rates of substitution are characteristic of the production process generally. The cost data and the technological data can now be brought together. The straight line labelled  $v_2$ , called the  $v_2$ -isocost line, shows all the combinations of input that can be purchased for a specified variable cost,  $v_2$ . The other two isocost lines shown are interpreted similarly. The slope of an isocost line is found by dividing  $p_2$  by  $p_1$  and depends only on the ratio of the prices of the two factors. Isoquant diagram for two factors of production,  $x_1$  and  $x_2$  see text. Three isocost lines are shown, corresponding to variable costs amounting to  $v_1$ ,  $v_2$ , and  $v_3$ . If units are to be produced, expenditure of  $v_1$  on variable factors will not suffice since the  $v_1$ -isocost line never reaches the isoquant for units. An expenditure of  $v_3$  is more than sufficient; and  $v_2$  is the lowest variable cost for which units can be produced. It may be noted that the cheapest combination for the production of any quantity will be found at the point at which the relevant isoquant is tangent to an isocost line. Thus, since the slope of an isoquant is given by the marginal rate of substitution, any firm trying to produce as cheaply as possible will always purchase or hire factors in quantities such that the marginal rate of substitution will equal the ratio of their prices. The isoquant-isocost diagram or the corresponding solution by the alternative means of the calculus solves the short-run cost minimization problem by determining the least-cost combination of variable factors that can produce a given output in a given plant. The variable cost incurred when the least-cost combination of inputs is used in conjunction with a given outfit of fixed equipment is called the variable cost of that quantity of output and denoted  $VC_y$ . The total cost incurred, variable plus fixed, is the short-run cost of that output, denoted  $SRC_y$ . Marginal cost Two other concepts now become important. The average variable cost, written  $AVC_y$ , is the variable cost per unit of output. The marginal variable cost, or simply marginal cost [ $MC_y$ ] is, roughly, the increase in variable cost incurred when output is increased by one unit; i. Though for theoretical purposes a more precise definition can be obtained by regarding  $VC_y$  as a continuous function of output, this is not necessary in the present case. The usual behaviour of average and marginal variable costs in response to changes in the level of output from a given fixed plant is shown in Figure 3. In this figure costs in dollars per unit are measured vertically and output in units per year is shown horizontally. The figure is drawn for some particular fixed plant, and it can be seen that average costs are fairly high for very low levels of output relative to the size of the plant, largely because there is not enough work to keep a well-balanced work force fully occupied. People are either idle much of the time or shifting, expensively, from job to job. As output increases from a low level, average costs decline to a low plateau. But as the capacity of the plant is approached, the inefficiencies incident on plant congestion force average costs up quite rapidly. Overtime may be incurred, outmoded equipment and inexperienced hands may be called into use, there may not be time to take machinery off the line for routine maintenance; or minor breakdowns and delays may disrupt schedules seriously because of inadequate slack and reserves. Thus the  $AVC$  curve has the flat-bottomed U-shape shown. Maximization of short-run profits The average and marginal cost curves just deduced are the keys to the solution of the second-level problem, the determination of the most profitable level of output to produce in a given plant. The only additional datum needed is the price of the product, say  $p_0$ . The most profitable amount of output may be found by using these data. If the marginal cost of any given output  $y$  is less than the price, sales revenues will increase more than costs if output is increased by one unit or even a few more; and profits will rise. Contrariwise, if the marginal cost is greater than the price, profits will be increased by cutting back output by at least one unit. This is the second basic finding: Such a conclusion is shown in Figure 3. Marginal cost and price The conclusion that marginal cost tends to equal price is important in that it shows how the quantity of output produced by a firm is influenced by the market price. At any higher market price, the firm will produce the quantity for which marginal cost equals that price. Thus the quantity that the firm will produce in response to any price can be found in Figure 3 by reading the marginal cost curve, and for this reason the marginal cost curve is said to be the short-run supply curve for the firm. The short-run supply curve for a product—that is, the total amount that all the firms producing it will produce in response to any market price—follows immediately, and is seen to be the sum of the short-run supply curves or marginal cost curves, except when the price is below the bottoms of the

average variable cost curves for some firms of all the firms in the industry. This curve is of fundamental importance for economic analysis, for together with the demand curve for the product it determines the market price of the commodity and the amount that will be produced and purchased. One pitfall must, however, be noted. In the demonstration of the supply curves for the firms, and hence of the industry, it was assumed that factor prices were fixed. Though this is fair enough for a single firm, the fact is that if all firms together attempt to increase their outputs in response to an increase in the price of the product, they are likely to bid up the prices of some or all of the factors of production that they use. In that event the product supply curve as calculated will overstate the increase in output that will be elicited by an increase in price. A more sophisticated type of supply curve, incorporating induced changes in factor prices, is therefore necessary. Such curves are discussed in the standard literature of this subject.

**Marginal product** It is now possible to derive the relationship between product prices and factor prices, which is the basis of the theory of income distribution. To this end, the marginal product of a factor is defined as the amount that output would be increased if one more unit of the factor were employed, all other circumstances remaining the same. Algebraically, it may be expressed as the difference between the product of a given amount of the factor and the product when that factor is increased by an additional unit. The marginal products are closely related to the marginal rates of substitution previously defined. It has already been shown that the marginal rate of substitution also equals the ratio of the prices of the factors, and it therefore follows that the prices or wages of the factors are proportional to their marginal products. This is one of the most significant theoretical findings in economics. To restate it briefly: This is not a question of social equity but merely a consequence of the efforts of businessmen to produce as cheaply as possible. Further, the marginal products of the factors are closely related to marginal costs and, therefore, to product prices. This, also, is a fundamental theorem of income distribution and one of the most significant theorems in economics. Its logic can be perceived directly. If the equality is violated for any factor, the businessman can increase his profits either by hiring units of the factor or by laying them off until the equality is satisfied, and presumably the businessman will do so. The theory of production decisions in the short run, as just outlined, leads to two conclusions of fundamental importance throughout the field of economics about the responses of business firms to the market prices of the commodities they produce and the factors of production they buy or hire: The first explains the supply curves of the commodities produced in an economy. Though the conclusions were deduced within the context of a firm that uses two factors of production, they are clearly applicable in general.

## 8: Economics | Definition of Economics by Merriam-Webster

*Production Function: Meaning, Definitions and Features! Production is the result of co-operation of four factors of production viz., land, labour, capital and organization. This is evident from the fact that no single commodity can be produced without the help of any one of these four factors of production.*

Markets Economists study trade, production and consumption decisions, such as those that occur in a traditional marketplace. In Virtual Markets , buyer and seller are not present and trade via intermediaries and electronic information. Microeconomics examines how entities, forming a market structure , interact within a market to create a market system. These entities include private and public players with various classifications, typically operating under scarcity of tradable units and light government regulation. In theory, in a free market the aggregate sum of quantity demanded by buyers and quantity supplied by sellers may reach economic equilibrium over time in reaction to price changes; in practice, various issues may prevent equilibrium, and any equilibrium reached may not necessarily be morally equitable. For example, if the supply of healthcare services is limited by external factors , the equilibrium price may be unaffordable for many who desire it but cannot pay for it. Various market structures exist. In perfectly competitive markets , no participants are large enough to have the market power to set the price of a homogeneous product. In other words, every participant is a "price taker" as no participant influences the price of a product. In the real world, markets often experience imperfect competition. Forms include monopoly in which there is only one seller of a good , duopoly in which there are only two sellers of a good , oligopoly in which there are few sellers of a good , monopolistic competition in which there are many sellers producing highly differentiated goods , monopsony in which there is only one buyer of a good , and oligopsony in which there are few buyers of a good. Unlike perfect competition, imperfect competition invariably means market power is unequally distributed. Firms under imperfect competition have the potential to be "price makers", which means that, by holding a disproportionately high share of market power, they can influence the prices of their products. Microeconomics studies individual markets by simplifying the economic system by assuming that activity in the market being analysed does not affect other markets. This method of analysis is known as partial-equilibrium analysis supply and demand. This method aggregates the sum of all activity in only one market. General-equilibrium theory studies various markets and their behaviour. It aggregates the sum of all activity across all markets. This method studies both changes in markets and their interactions leading towards equilibrium. Production theory basics , Opportunity cost , Economic efficiency , and Productionâ€™possibility frontier In microeconomics, production is the conversion of inputs into outputs. It is an economic process that uses inputs to create a commodity or a service for exchange or direct use. Production is a flow and thus a rate of output per period of time. Distinctions include such production alternatives as for consumption food, haircuts, etc. Opportunity cost is the economic cost of production: Choices must be made between desirable yet mutually exclusive actions. It has been described as expressing "the basic relationship between scarcity and choice ". Part of the cost of making pretzels is that neither the flour nor the morning are available any longer, for use in some other way. The opportunity cost of an activity is an element in ensuring that scarce resources are used efficiently, such that the cost is weighed against the value of that activity in deciding on more or less of it. Opportunity costs are not restricted to monetary or financial costs but could be measured by the real cost of output forgone , leisure , or anything else that provides the alternative benefit utility. Other inputs may include intermediate goods used in production of final goods, such as the steel in a new car. Economic efficiency measures how well a system generates desired output with a given set of inputs and available technology. Efficiency is improved if more output is generated without changing inputs, or in other words, the amount of "waste" is reduced. A widely accepted general standard is Pareto efficiency , which is reached when no further change can make someone better off without making someone else worse off. An example productionâ€™possibility frontier with illustrative points marked. The productionâ€™possibility frontier PPF is an expository figure for representing scarcity, cost, and efficiency. In the simplest case an economy can produce just two goods say "guns" and "butter". The PPF is a table or graph as at the right

showing the different quantity combinations of the two goods producible with a given technology and total factor inputs, which limit feasible total output. Each point on the curve shows potential total output for the economy, which is the maximum feasible output of one good, given a feasible output quantity of the other good. Scarcity is represented in the figure by people being willing but unable in the aggregate to consume beyond the PPF such as at X and by the negative slope of the curve. This is because increasing output of one good requires transferring inputs to it from production of the other good, decreasing the latter. The slope of the curve at a point on it gives the trade-off between the two goods. It measures what an additional unit of one good costs in units forgone of the other good, an example of a real opportunity cost. Thus, if one more Gun costs units of butter, the opportunity cost of one Gun is Butter. Along the PPF, scarcity implies that choosing more of one good in the aggregate entails doing with less of the other good. Still, in a market economy, movement along the curve may indicate that the choice of the increased output is anticipated to be worth the cost to the agents. By construction, each point on the curve shows productive efficiency in maximizing output for given total inputs. A point inside the curve as at A, is feasible but represents production inefficiency wasteful use of inputs, in that output of one or both goods could increase by moving in a northeast direction to a point on the curve. Examples cited of such inefficiency include high unemployment during a business-cycle recession or economic organization of a country that discourages full use of resources. Being on the curve might still not fully satisfy allocative efficiency also called Pareto efficiency if it does not produce a mix of goods that consumers prefer over other points. Much applied economics in public policy is concerned with determining how the efficiency of an economy can be improved. Recognizing the reality of scarcity and then figuring out how to organize society for the most efficient use of resources has been described as the "essence of economics", where the subject "makes its unique contribution. Specialization is considered key to economic efficiency based on theoretical and empirical considerations. According to theory, this may give a comparative advantage in production of goods that make more intensive use of the relatively more abundant, thus relatively cheaper, input. Even if one region has an absolute advantage as to the ratio of its outputs to inputs in every type of output, it may still specialize in the output in which it has a comparative advantage and thereby gain from trading with a region that lacks any absolute advantage but has a comparative advantage in producing something else. It has been observed that a high volume of trade occurs among regions even with access to a similar technology and mix of factor inputs, including high-income countries. This has led to investigation of economies of scale and agglomeration to explain specialization in similar but differentiated product lines, to the overall benefit of respective trading parties or regions. Among each of these production systems, there may be a corresponding division of labour with different work groups specializing, or correspondingly different types of capital equipment and differentiated land uses. More total output and utility thereby results from specializing in production and trading than if each country produced its own high-tech and low-tech products. Theory and observation set out the conditions such that market prices of outputs and productive inputs select an allocation of factor inputs by comparative advantage, so that relatively low-cost inputs go to producing low-cost outputs. In the process, aggregate output may increase as a by-product or by design. A measure of gains from trade is the increased income levels that trade may facilitate. Supply and demand The supply and demand model describes how prices vary as a result of a balance between product availability and demand. The graph depicts an increase that is, right-shift in demand from D1 to D2 along with the consequent increase in price and quantity required to reach a new equilibrium point on the supply curve S. Prices and quantities have been described as the most directly observable attributes of goods produced and exchanged in a market economy. In microeconomics, it applies to price and output determination for a market with perfect competition, which includes the condition of no buyers or sellers large enough to have price-setting power. For a given market of a commodity, demand is the relation of the quantity that all buyers would be prepared to purchase at each unit price of the good. Demand is often represented by a table or a graph showing price and quantity demanded as in the figure. Demand theory describes individual consumers as rationally choosing the most preferred quantity of each good, given income, prices, tastes, etc. A term for this is "constrained utility maximization" with income and wealth as the constraints on demand. Here, utility refers to the hypothesized relation of each individual consumer for ranking different commodity bundles as more or less

preferred. The law of demand states that, in general, price and quantity demanded in a given market are inversely related. That is, the higher the price of a product, the less of it people would be prepared to buy other things unchanged. As the price of a commodity falls, consumers move toward it from relatively more expensive goods the substitution effect. In addition, purchasing power from the price decline increases ability to buy the income effect. Other factors can change demand; for example an increase in income will shift the demand curve for a normal good outward relative to the origin, as in the figure. All determinants are predominantly taken as constant factors of demand and supply. Supply is the relation between the price of a good and the quantity available for sale at that price. It may be represented as a table or graph relating price and quantity supplied. Producers, for example business firms, are hypothesized to be profit maximizers, meaning that they attempt to produce and supply the amount of goods that will bring them the highest profit. Supply is typically represented as a function relating price and quantity, if other factors are unchanged. That is, the higher the price at which the good can be sold, the more of it producers will supply, as in the figure. The higher price makes it profitable to increase production. Just as on the demand side, the position of the supply can shift, say from a change in the price of a productive input or a technical improvement. The "Law of Supply" states that, in general, a rise in price leads to an expansion in supply and a fall in price leads to a contraction in supply. Here as well, the determinants of supply, such as price of substitutes, cost of production, technology applied and various factors inputs of production are all taken to be constant for a specific time period of evaluation of supply. Market equilibrium occurs where quantity supplied equals quantity demanded, the intersection of the supply and demand curves in the figure above. At a price below equilibrium, there is a shortage of quantity supplied compared to quantity demanded. This is posited to bid the price up. At a price above equilibrium, there is a surplus of quantity supplied compared to quantity demanded. This pushes the price down. The model of supply and demand predicts that for given supply and demand curves, price and quantity will stabilize at the price that makes quantity supplied equal to quantity demanded. Similarly, demand-and-supply theory predicts a new price-quantity combination from a shift in demand as to the figure , or in supply. For a given quantity of a consumer good, the point on the demand curve indicates the value, or marginal utility , to consumers for that unit. It measures what the consumer would be prepared to pay for that unit. The price in equilibrium is determined by supply and demand. In a perfectly competitive market , supply and demand equate marginal cost and marginal utility at equilibrium. Their usage rates can be changed easily, such as electrical power, raw-material inputs, and over-time and temp work. Other inputs are relatively fixed, such as plant and equipment and key personnel. In the long run , all inputs may be adjusted by management.

### 9: What is production technology? definition and meaning - [www.enganchecubano.com](http://www.enganchecubano.com)

*Knowing your production costs will help you to figure out how much profit you can make on each item you sell. 17 people found this helpful Having a good production team can help your business stay up to the task of handling all of your demand needs.*

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