

# **FACTORS OF PRODUCTION**

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## INTRODUCTION

In economics, factor of production means input and finished means output. Input determines the quantity of output i.e. output depends upon input. Input is the starting point and output is the end point of production process and such input-output relationship is called a production function. All factors of production like land, labour, capital and entrepreneur are required in combination at a time to produce a commodity. In economics, production means creation or an addition of utility. Factors of production (or productive inputs or resources) are any commodities or services used to produce goods and services. [6]

Factors of production may also refer specifically to the primary factors, which are stocks including land, labour (the ability to work), and capital goods applied to production. The primary factors facilitate production but neither become part of the product (as with raw materials) nor become significantly transformed by the production process (as with fuel used to power machinery).

Land includes not only the site of production but natural resources above or below the soil. Recent usage has distinguished human capital (the stock of knowledge in the labour force) from labour. [7]

Entrepreneurship is also sometimes considered a factor of production.

Sometimes the overall state of technology is described as a factor of production.

The number and definition of factors varies, depending on theoretical purpose, empirical emphasis, or school of economics.

Means of production refers to physical, non-human inputs used in production—the factories, machines, and tools used to produce wealth — along with both infrastructural capital and natural capital. This includes the classical factors of production minus financial capital and minus human capital. They include two broad categories of objects: instruments of labour (tools, factories, infrastructure, etc.) and subjects of labour (natural resources and raw materials). People operate on the subjects of labour, using the instruments of labour, to create

a product; or, stated another way, labour acting on the means of production creates a product. When used in the broad sense, the term «means of production» includes the term «means of distribution» which includes stores, banks, and railroads. [2]

The term can be simply and picturesquely described in an agrarian society as the soil and the shovel; in an industrial society, the mines and the factories.

The title of my research work is «study of the problems and make recommendations to promotion new product on the market now JSC Gomelchimtorg». This theme is connected with all factors of production. First of all, the level of passenger tariffs contains the salary railway workers (employees of cash desks, conductors, drivers, repairmen and etc.). So this is such factor of production as labour. The land factor means registration of railway stations, driveways, locomotive depots, railroad offices and so on. [1]

## 1. HISTORICAL SCHOOLS AND FACTORS

The factors of production are resources that are the building blocks of the economy; they are what people use to produce goods and services. Economists divide the factors of production into four categories: land, labor, capital, and entrepreneurship. [6]

The first factor of production is land, but this includes any natural resource used to produce goods and services. This includes not just land, but anything that comes from the land. Some common land or natural resources are water, oil, copper, natural gas, coal, and forests. Land resources are the raw materials in the production process. These resources can be renewable, such as forests, or nonrenewable such as oil or natural gas. The income that resource owners earn in return for land resources is called rent. [6]

The second factor of production is labor. Labor is the effort that people contribute to the production of goods and services. Labor resources include the work done by the waiter who brings your food at a local restaurant as well as the engineer who designed the bus that transports you to school. It includes an artist's creation of a painting as well as the work of the pilot flying the airplane overhead. If you have ever been paid for a job, you have contributed labor resources to the production of goods or services. The income earned by labor resources is called wages and is the largest source of income for most people. [5]

The third factor of production is capital. Think of capital as the machinery, tools and buildings humans use to produce goods and services. Some common examples of capital include hammers, forklifts, conveyer belts, computers, and delivery vans. Capital differs based on the worker and the type of work being done. For example, a doctor may use a stethoscope and an examination room to provide medical services. A teacher may use textbooks, desks, and a whiteboard to produce education services. The income earned by owners of capital resources is interest. [5]

The fourth factor of production is entrepreneurship. An entrepreneur is a

person who combines the other factors of production – land, labor, and capital – to earn a profit. The most successful entrepreneurs are innovators who find new ways to produce goods and services or who develop new goods and services to bring to market. Without the entrepreneur combining land, labor, and capital in new ways, many of the innovations we see around us would not exist. Think of the entrepreneurship of Henry Ford or Bill Gates. Entrepreneurs are a vital engine of economic growth helping to build some of the largest firms in the world as well as some of the small businesses in your neighborhood. Entrepreneurs thrive in economies where they have the freedom to start businesses and buy resources freely. The payment to entrepreneurship is profit. [6]

In the interpretation of the currently dominant view of classical economic theory developed by neoclassical economists, the term «factors» did not exist until after the classical period and is not to be found in any of the literature of that time. Differences are most stark when it comes to deciding which factor is the most important. For example, in the Austrian view—often shared by neoclassical and other «free market» economists—the primary factor of production is the time of the entrepreneur, which, when combined with other factors, determines the amount of output of a particular good or service. However, other authors argue that «entrepreneurship» is nothing but a specific kind of labour or human capital and should not be treated separately. [6]

### Physiocracy

In French Physiocracy, the main European school of economics before Adam Smith, the productive process is explained as the interaction between participating classes of the population. These classes are therefore the factors of production within physiocracy: capital, entrepreneurship, land, and labour.

- The farmer labours on land (sometimes using «crafts») to produce food, fiber, and the like.
- The artisan labours to produce important capital goods (crafts) to be used by the other economic actors.
- The landlord is only a consumer of food and crafts and produces

nothing at all.

- The merchant labours to export food in exchange for foreign imports.

### Classical

The classical economics of Adam Smith, David Ricardo, and their followers focuses on physical resources in defining its factors of production, and discusses the distribution of cost and value among these factors. Adam Smith and David Ricardo referred to the «component parts of price» as the costs of using:

- Land or natural resource — naturally-occurring goods such as water, air, soil, minerals, flora and fauna that are used in the creation of products. The payment for use and the received income of a land owner is rent.

- Labour — human effort used in production which also includes technical and marketing expertise. The payment for someone else's labour and all income received from one's own labour is wages. Labour can also be classified as the physical and mental contribution of an employee to the production of the good(s).

- The capital stock — human-made goods (or means of production), which are used in the production of other goods. This component includes machinery, tools, and buildings.

The classical economists also employed the word «capital» in reference to money. Money, however, was not considered to be a factor of production in the sense of capital stock since it is not used to directly produce any good. The return to loaned money or to loaned stock was styled as interest while the return to the actual proprietor of capital stock (tools, etc.) was styled as profit. See also returns.

### Marxian

Marx considered the «elementary factors of the labour-process» or «productive forces» to be:

- Labour («work itself»)
- The subject of labour (objects transformed by labour)
- The instruments of labour (or means of labour).

The «subject of labour» refers to natural resources and raw materials,

including land. The «instruments of labour» are tools, in the broadest sense. They include factory buildings, infrastructure, and other human-made objects that facilitate labour's production of goods and services.

This view seems similar to the classical perspective described above. But unlike the classical school and many economists today, Marx made a clear distinction between labour actually done and an individual's «labour power» or ability to work. Labour done is often referred to nowadays as «effort» or «labour services». Labour-power might be seen as a stock which can produce a flow of labour.

Labour, not labour power, is the key factor of production for Marx and the basis for Marx's labour theory of value. The hiring of labour power only results in the production of goods or services («use-values») when organized and regulated (often by the «management»). How much labour is actually done depends on the importance of conflict or tensions within the labour process.

#### Neoclassical economics

Neoclassical economics, one of the branches of mainstream economics, started with the classical factors of production of land, labour, and capital. However, it developed an alternative theory of value and distribution. Many of its practitioners have added various further factors of production.

#### Further distinctions

Further distinctions from classical and neoclassical microeconomics include the following:

- Capital — this has many meanings, including the financial capital raised to operate and expand a business. In much of economics, however, "capital" (without any qualification) means goods that can help produce other goods in the future, the result of investment. It refers to machines, roads, factories, schools, infrastructure, and office buildings which humans have produced in order to produce goods and services.

- Fixed capital — this includes machinery, factories, equipment, new technology, factories, buildings, computers, and other goods that are designed to

increase the productive potential of the economy for future years. Nowadays, many consider computer software to be a form of fixed capital and it is counted as such in the National Income and Product Accounts of the United States and other countries. This type of capital does not change due to the production of the good.

- Working capital — this includes the stocks of finished and semi-finished goods that will be economically consumed in the near future or will be made into a finished consumer good in the near future. These are often called inventories. The phrase «working capital» has also been used to refer to liquid assets (money) needed for immediate expenses linked to the production process (to pay salaries, invoices, taxes, interests...) either way, the amount or nature of this type of capital usually changed during the production process.

- Financial capital — this is simply the amount of money the initiator of the business has invested in it. «Financial capital» often refers to his or her net worth tied up in the business (assets minus liabilities) but the phrase often includes money borrowed from others.

- Technological progress — for over a century, economists have known that capital and labour do not account for all of economic growth. This is reflected in total factor productivity and the Solow residual used in economic models called production functions that account for the contributions of capital and labour, yet have some unexplained contributor which is commonly called technological progress. Ayres and War (2009) present time series of the efficiency of primary energy (exergy) conversion into useful work for the US, UK, Austria and Japan revealing dramatic improvements in model accuracy. With useful work as a factor of production they are able to reproduce historical rates of economic growth with considerable precision and without recourse to exogenous and unexplained technological progress, thereby overcoming the major flaw of the Solow Theory of economic growth. [4]

## 2. THE MAIN THREE FACTORS OF PRODUCTION

Factors of production are resources used by firms as inputs for a good or service to be produced. Factors of production are as follows: capital, labour, and natural resources. In economic theory, the term «capital» refers to goods and money used to produce more goods and money. Classifications of capital vary with the purpose of the classification. The most general distinction is the one made between physical, financial, and human capital.[1]

Physical capital is land, buildings, equipment, raw materials; bonds, stocks, available bank balances are included in the financial capital. They both make great contribution to production.[2]

To group capital into fixed capital and circulating capital is common practice. The former refers to means of production such as land, buildings, machinery and various equipment. They are durable, that is, they participate in the production process over several years. Circulating capital includes both non-renewable goods, such as raw materials and fuel, and the funds required to pay wages and other claims against the enterprise. Non-renewable goods are used up in one production cycle and their value is fully transferred to the final product.[1]

Human capital is knowledge that contributes «know-how» to production. It is increased by research and disseminated through education. Investment in human capital results in new, technically improved, products and production processes which improve economic efficiency. Like physical capital, human capital is important enough to be an indicator of economic development of a nation.

It is common, in economics, to understand labour as an effort needed to satisfy human needs. It is one of the three leading elements of production. Labour has a variety of functions: production of raw materials, manufacturing of final products, transferring things from one place to another, management of production, and services like the ones rendered by physicians and teachers.

One can classify labour into productive and unproductive. The former produces physical objects having utility. The latter is useful but does not produce

material wealth. Labour of the musician is an example.[6]

Unlike other factors of production, for example capital, once workers are employed, their efficiency can vary greatly with organization of work and their motivation.

Demand for labour is influenced by the demand for goods produced by workers, the proportion of wages in total production costs, etc. The supply of labour depends upon the size of population, geographic mobility, skills, education level (human capital), etc. Workers supply labour either individually or through trade unions. If demand for and supply of labour are not in equilibrium, there is unemployment. The rate of unemployment is a percentage of the total labour force without a job. It is desirable for an economy to have the lowest possible unemployment rate and to achieve higher employment as neither full use of resources nor maximum level of output can be achieved in an economy having unemployment.

Factors of production are combined together in different proportions in order to produce output. It is assumed in economics that one should choose the combination of factors which minimizes the cost of production and increases profits.

Economists consider natural resources to be the third factor of production. They are a contribution to productive activity made by land (for example, a factory site or farm location), raw materials such as iron ore, timber, oil, water for crops and power production, forests and animals.[5]

Some natural resources, wheat, for example, are renewable; others such as iron ore are non-renewable and will eventually be used up. Economists know reduced supplies of non-renewable resources to result in their higher prices, which provide an incentive to look for natural or synthetic substitutes for them. The supply of land, an essential natural resource, is limited and it cannot be easily increased to meet an increase in demand except in certain cases. For example, the Dutch have been able to reclaim from the sea some areas of low-lying land.

Another essential characteristic of land is that it is durable, that is, land is not

used up in the production process, although it may be depleted by use.

Land is, in some respects, close to physical capital, though the former is supplied by nature and man produces the latter. Nevertheless, applying labour to kill weeds or fertilizer to improve the soil, farmers can «produce» better land and raise its price.

Price of or income from land, as well as from other natural resources, is called rent. Land itself has no cost of production, so rent depends on the degree of scarcity and on the demand for it.[4]

The purposes for which land is used are due to its characteristics. Land can be used for housing or offices, for mining, or for building roads. Besides, it contributes to the production of crops, providing an environment that supplies water, air, and nutrients for plant growth.

Land as a unique agricultural resource poses management problems for the farmer. In the first place, the farmer has to make a choice between buying and leasing it. The advantages and disadvantages depend on the farmer's financial position, on the availability of land for lease and purchase and some other factors.

Because purchasing land usually requires a larger capital, farmers with limited capital lease land and use their capital for machinery and other resources.

Economists consider a satisfactory lease to be the one that is profitable both for the landowner and for the tenant. A fair lease compensates both parties in proportion to their contributions to the farm business.

Other management problems may arise due to differences in land profitability in various farming branches and other industries. Economists know different crops and classes of animals to vary in profitability. The farmer has to study thoroughly the conditions on his farm to make a correct choice between alternative uses.

Land was sometimes defined in classical and neoclassical economics as the «original and indestructible powers of the soil». Georgists hold that this implies a perfectly inelastic supply curve (i.e., zero elasticity), suggesting that a land value tax that recovers the rent of land for public purposes would not affect the

opportunity cost of using land, but would instead only decrease the value of owning it. This view is supported by evidence that although land can come on and off the market, market inventories of land show if anything an inverse relationship to price (i.e., negative elasticity). [3]

Land, particularly geographic locations and mineral deposits, has historically been the cause of much conflict and dispute; land reform programs, which are designed to redistribute possession and/or use of geographic land, are often the cause of much controversy, and conflicts over the economic rent of mineral deposits have contributed to many civil wars, particularly in Africa. [4]

Although the total supply of land is limited, its allocation between industries is not. If a government wants to stimulate, for example, either housing or afforestation, it offers a subsidy raising the rent received by owners of housing land or forests. This may create incentives for farmers to transfer land from farming to other industries.[4]

## 2.1 CRITICISM OF THE FREE FACTORS OF PRODUCTION

Several economists have criticisms for the above factors of production economist Benham has objected to a broader meaning of land as a factor of production. As per him, it is convenient to consider only land as factor of production, rather than such elements as sunshine, climate etc. which does not enter directly into costs. Likewise, it is incorrect to group together the services of an untalented worker with that of professionals. Yet again, there is tiny tip in syndicating mutually as capital, as assorted as canals, diesel, seeds and machinery. It would consequently, be more appropriate to chunk collectively all standardized units, whether hectares of land, workers or capital goods and to regard each group as an individual factor of production. This method gives us a hefty integer of factors of production and each group is regarded as a separate factor. [7]

Over and again, the distinction amidst land, labour and capital are not apparent. To take land and capital, it is said that land is a gift of nature whose

supply cannot be amplified while capital is human made whose supply is amendable. This is not correct for the reason that the supply of land can also be greater than before by cleaning it, draining and irrigating it and fertilizing it by the pains of human and capital. The supply of land does not consign to its area alone, but to its productivity. [3]

We might regard each unit of a factor as discrete from other units of that factor, but one factor can be substituted for some other factor. For instance, land can be used intensively by employing more labour or more capital in the form of fertilizers, better seeds and superior techniques. By doing so, we substitute labour or capital for land. Likewise labour can be substituted for capital and capital for labour in a factor. In the former case, labour intensive techniques are used. The level of swap of one factor for another will, nevertheless depend on the most competent scheme of production to be used relatively to the cost of the factor to be substituted. [9]

Moreover, we find that land, labour and capital frequently get mingled into one another and it is tricky to specify the involvement of each individually. For example, when land is vacant canals are dug and fences are erected, the efficiency of land enhances. But all these development on land are feasible by making capital investments and through labour. In such a condition, it is feasible to stipulate the involvement of land, labour and capital escalating efficiency. Likewise, the sum of money spent on cultivating and exercising workers is integrated under capital. So when such workers produce articles by functioning machines in a factory, they put in their labour as well as ability by using raw materials which are also the product of labour and machines used on land. Thus it is hard to unravel the contribution of land, labour and capital in such cases. The complexity begins as to whether the contribution of land, labour and capital should be taken as such, or of their services. If the community is to plan for the prospect or find out the production possibilities open to it, then the contribution of the factors of production should be measured. Keeping the outlook in view, land may be put to more fruitful uses, labour may be trained for diverse occupations requiring higher skills and capital

may be used for producing more roundabout means of production and machinery. Thus «the central economic problem for any community is how to make the best use of its labour and other resources and for this purpose the community must consider the various alternatives. It must consider what the men and the land and the capital might contribute towards output if they were used in different ways and not merely what in fact they are contributing now».[3]

Finally, it is habitual not to treat organization as discrete from labour. This is ambiguous and misjudges the role of the entrepreneur as a factor of production. As a substance of statement, labour and entrepreneur are quite dissimilar from each other. An entrepreneur is a man of special managerial aptitude who controls, organizes and manages the entire business of a firm. It is he who utilizes all types of workers and puts them at the places where they are the most appropriate by quality of their education and training. [8]

## 2.2 SIGNIFICANCE OF THE FREE FACTORS OF PRODUCTION

- The concept of the factor of production is of great significance in modern economic study. It is used in the theory of production in which the a range of combinations of factors of production help in generating output when a firm functions under rising or declining costs in the short-run and when the proceeds to scale boosts or shrinks in the long run. Moreover, we can also know how the least cost combination of factors can be attained by a firm.

- The theory of cost of production also depends upon the combination of factors engaged in business and the prices that are paid to them. From the point of view of the theory of costs of production, factors of production are divided as fixed factors are variable factors.

- Fixed factors are those whose costs do not vary with the variation in output, such as machinery, tube well etc. Variable factors are those whose quantities and costs vary with the variation in output. Larger outputs entail larger quantities of labour, raw materials power etc. So long as a firm covers the costs of

production of the variable factors it employs, it will persist to produce even if it fails to cover the costs of production of the hired factors and sustains loss. But this is only feasible in the short-run; in the long-run it must cover the costs of production of both the fixed and variable factors. Thus the distinction amidst fixed and variable factors is of much value for the theory of the firm.

- Finally the concept of factor of production is used in elucidating the theory of factor-pricing. For this idea, factors of production are divided into specific and non-specific. A factor of production which is specific in use earns a higher reward than a non-specific factor. This also solves the problem of distribution of earnings to the various resource owners. [10]

### 3. THE FOURTH FACTOR OF PRODUCTION

Some economists also include entrepreneurship as a factor of production. Like labour, entrepreneurship is a human input factor but it refers to more than just work; it refers to the creativity and initiative needed to start a business, develop new goods and services, or improve on the development and distribution of existing products. [12]

Consider entrepreneurship as a factor of production, leaving debate aside. In markets, entrepreneurs combine the other factors of production, land, labour, and capital in order to make a profit. Often these entrepreneurs are seen as innovators, developing new ways to produce and new products. In a planned economy, central planners decide how land, labour, and capital should be used to provide for maximum benefit for all citizens. Of course, just as with market entrepreneurs, the benefits may mostly accrue to the entrepreneurs themselves. [11]

The word has been used in other ways. The sociologist C. Wright Mills refers to «new entrepreneurs» who work within and between corporate and government bureaucracies in new and different ways. Others (such as those practicing public choice theory) refer to «political entrepreneurs», i.e., politicians and other actors.

Much controversy rages about the benefits produced by entrepreneurship. But the real issue is about how well institutions they operate in (markets, planning, bureaucracies, and government) serve the public. This concerns such issues as the relative importance of failure and government failure. [8]

Many definitions of entrepreneurship can be found in the literature describing business processes. The earliest definition of entrepreneurship, dating from the eighteenth century, used it as an economic term describing the process of bearing the risk of buying at certain prices and selling at uncertain prices. Other, later commentators broadened the definition to include the concept of bringing together the factors of production. This definition led others to question whether there was any unique entrepreneurial function or whether it was simply a form of

management. Early this century, the concept of innovation was added to the definition of entrepreneur-ship. This innovation could be process innovation, market innovation, product innovation, factor innovation, and even organisational innovation. Later definitions described entrepreneurship as involving the creation of new enterprises and that the entrepreneur is the founder. [11]

Nowdays there is no standart definition of entrepreneur in economic theory, but are identified by three possible elements of the entrepreneurial function:

- 1) The organisation of production
- 2)Risk
- 3)Inovation[11]

The entrepreneur is the factor of production which brings together the other factors in the production process. Land and capital are inert objects. Entrepreneur buys land, hires labour and organizes all three factors to produce goods and services for sale, so is seen as the key to production in economy. It could be argued that if there were no entrepreneurs, there would be no production. Production is a risky process. In many industries, land, labour and capital have to be purchased before there is any certainty that the finished product will be sold. For instance, a car manufacturer is likely to make cars without there being any firm orders for their sale. If it makes too many cars, they will have to be stockpiled for sale at a later date. Too big a stockpile and too few orders could result in the bankruptcy of the firm. So firms face uncertainties and have to take risks. Some risks are quantifiable and can be insured against. A firm can insure itself against the risk of fire damage or theft. However, other risks such as whether a new production technique will lead to a reduction in costs, are unquantifiable and therefore cannot be insured against. [12]

Entrepreneurs are those who take unquantifiable risks and suffer the consequences if they get it wrong. Entrepreneur is someone who innovates within an organization. New products are being launched all the time but evidence suggest that only a few will be successful. New productin techniques are also being constantly pioneered with varying degrees of success. [11]

a) The most likely classified as entrepreneurs are owner managers of small firms because they combine all these three entrepreneurial functions. He organize production because he is a manager of the company. He takes risks because he has put money into the firm to start it and is producing innovative products which could well fail. This person is likely to have sufficient capital to be able to finance the setting up to the firm, have total control over the organization of production and be exposed to considerable risk if the enterprise fails.

b) Managers, if they take risks on behalf of their companies and if they are responsible for innovation. A manager of a company may have no shares in the company for which he works, so he does not risk own capital. He takes decisions which involves an uncertain outcome. For example if a firm start to produce a new flavour of yoghurt. The flavour might be very successful or not, so the outcome of a decision is uncertain. Managers of large companies can be as entrepreneurial as owner-managers of small companies if they are responsible for pushing their companies into new areas. If managers work together as a team and innovate or take risks, then the group is entrepreneurial.

c) Shareholders because risk their capital. They are backing change and may give advice to the person setting up the company. If the company fails, shareholders lose their money. On the other hand, they are unlikely to be involved in organizing production or innovation in the firm. So some economists argue that capitalists are in some senses entrepreneurs, others disagree. [11]

Profit is the revenue left over after the other factors of production have been paid. If the entrepreneur is successful, there will be a large residue after wages, interest and rents have been paid. If the entrepreneur is unsuccessful, profits will be negative and the firm could go bankrupt. But not all profit is the reward for entrepreneurship. Only abnormal or pure profit can be seen as the payment which entrepreneurs receive. In normal profit is opportunity cost of factors such as labour and capital which receive no money payment for their use.

Welfare - practical or financial help that is provided, often by the government, for people. The role of entrepreneurship and an entrepreneurial

culture in economic and social development has often been underestimated. Over the years, however, it has become increasingly apparent that entrepreneurship does indeed contribute to economic. A number of arguments have been put forward as to why entrepreneurs play such an important role in the economy:

**Innovation:** Without innovation, the economy would stagnate. There would be no improvements in living standards. Innovation is therefore vital if economic welfare is to increase. **Job creation:** successful entrepreneurs create jobs. Also small firms can help ease the unemployment problems.

**Wealth creation:** Entrepreneurs create wealth by their activities. The small firms of today will become the large successful firms tomorrow. But innovation can lead to failure as well as success. For example in UK and USA, small firms entrepreneurs has been seen as a folk hero, have had lower economic growth rates than economies such as Japan and Germany where greater stress is placed on team work and co-operation.

Entrepreneur is the owner manager of a small company. So government can best support the creation of an enterprise culture by measures which will support the creation and expansion of small firms in the economy. Economic theory, however, need have nothing to do with small firms. Both innovation and risk taking can be as much if not more the concern of large firms as small firms.

In recent years, there has been a move towards paying managers by results. Some managing directors, for instance, are paid a basic salary but can earn far more if their company achieves a range of objectives. These include increases in sales, increases in profits, increases in the share price of the company or reductions in the form of cash or shares in the company. The idea is to make managers who are employees of the firm accept more risk. If the firm does well, the managers will do well. If the firm does badly, so too do the managers.

## CONCLUSION

Land, labour, capital, and entrepreneurship: these are four generally recognized factors of production. Of course, in a literal sense anything contributing to the productive process is a factor of production. However, economists seek to classify all inputs into a few broad categories, so standard usage refers to the categories themselves as factors. Before the twentieth century, only three factors making up the classical triad were recognized: land, labour, and capital. Entrepreneurship is a fairly recent addition. [1]

The factor concept is used to construct models illustrating general features of the economic process without getting caught up in inessential details. These include models purporting to explain growth, value, choice of production method, income distribution, and social classes. A major conceptual application is in the theory of production functions. One intuitive basis for the classification of the factors of production is the manner of payment for their services: rent for land, wages for labour, interest for capital, and profit for entrepreneurship. [2]

The myriad of possible inputs are usually grouped into six categories. These factors are:

- \* Raw materials;
- \* Machinery;
- \* Labour services;
- \* Capital goods;
- \* Land;
- \* Entrepreneur. [6]

In the «long run», all of these factors of production can be adjusted by management. The «short run», however, is defined as a period in which at least one of the factors of production is fixed. A fixed factor of production is one whose quantity cannot readily be changed. Examples include major pieces of equipment, suitable factory space, and key managerial personnel. [10]

A variable factor of production is one whose usage rate can be changed

easily. Examples include electrical power consumption, transportation services, and most raw material inputs. In the short run, a firm's «scale of operations» determines the maximum number of outputs that can be produced. In the «long run», there are no scale limitations. [3]

So nowadays we can't mention only four main factors of production. To work effectively is to include and not to forget about each item of expenditure. And after the calculation of the products' expenses we will get the right prime costs.

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## LIST OF TERMS

a number of	некоторое количество, ряд
a variety of (factors)	ряд, множество (факторов)
account	расчет, подсчет; счет
actual	фактический
actually	фактически, на самом деле
additional	дополнительный, добавочный
advantage	преимущество; превосходство
alongside	на ряду с, вместе с
alternative	альтернативный; другой
amount	количество; величина; сумма; объем
area	площадь, пространство, участок, зона
as follows	как следует ниже; следующий
assumption	предположение, допущение
at a certain level	на определенном уровне
at high/low prices	по высоким/низким ценам
availability	наличие
available	наличный, имеющийся в наличии
barter	бартер
budget	бюджет
budget constraint	бюджетное ограничение
business	предприятие, фирма; бизнес
buyer	покупатель
capital	капитал
capital stock	основной капитал
choice	выбор, отбор
claims against	требования против
command economy	нерыночная экономика
commodity	товар; продукт, предмет потребления

complement good	товар-дополнение
condition	состояние; обстоятельства
constant	постоянный; непрерывный
consumer	потребитель
consumer demand	потребительский спрос
consumption	потребление
contribute (to smth)	способствует
contribution	вклад
convenient	удобный
corresponding	соответственный; соответствующий
cost	стоимость; расходы, издержки
crop	сельскохозяйственное растение
currency	валюта
decision	решение
decrease (in smth)	уменьшение, понижение, снижение
deferred payment	отложенный, отсроченный платеж
degree	ступень; степень
demand	спрос, требование
demand for smth	спрос на что-либо
disadvantage	недостаток; невыгодное положение
disincentive	снижение побуждений (стремлений)
durable	длительного пользования
durable goods	товары длительного пользования
durables	товары длительного пользования
economic	экономический; рентабельный
economical	экономичный; бережливый
economics	экономическая наука; экономика
economist	экономист
economy	хозяйство, экономика
efficiency	эффективность; продуктивность

efficiency of labour	производительность труда
efficient	эффективный, действенный
employed	имеющий работу
employed workers	занятые рабочие
employment	работа; занятость
enterprise	предприятие
environment	окружающая среда
equilibrium	равновесие
equilibrium price	равновесная цена
equipment	оборудование
essential	обязательный, необходимый
exception	исключение
excess supply	избыточная поставка
exchange	обмен
exchange rate	обменный курс
expenditure	расходы
expenses	затраты, издержки
expensive	дорогой
farming	занятие сельским хозяйством
fertilizer	удобрение
final product	конечный продукт
finally	в конце концов, в заключение
financial capital	финансовый капитал
fixed capital	основные средства
following	следующий; нижеперечисленный
for this purpose	с этой целью
free market economy	свободная рыночная экономика
fuel	топливо, горючее
good	товар, изделие
government	правительство

government intervention	государственное регулирование
government regulation	государственное регулирование
housing	жилищное строительство
human capital	человеческий капитал
importance	важность, значение
improvement	усовершенствование
in exchange for smth	в обмен на что-либо
in particular	в особенности, в частности
in terms of	в смысле; в отношении; в переводе на
in terms of money	в денежном выражении
incentive	стимул
income	доходы, поступления, прибыль
increase (in smth)	увеличение, рост, прирост
inefficiency	неэффективность
inefficient	неэффективный
inferior good	товар низкого качества
influence	влияние
input	вложение, затраты, инвестиции
input price	цена ресурсов
intervention	вмешательство
investment (in smth)	капиталовложение; инвестиция
iron ore	железная руда
is common practice	в обычной практике
job	работа, место работы
labour	труд
labour force	рабочая сила
lease	аренда, наем; сдача в наем
level	уровень
loan	заем, ссуда
machinery	аппарат, машинное оборудование

management	управление
manager	управляющий; директор
manufacturer	изготовитель; поставщик
manufacturing	производство
marginal costs	предельные, маржинальные издержки
marginal revenue	предельный, маржинальный доход
marginal utility	предельная полезность
market	рынок
market demand	рыночный спрос
maximization	максимизация
maximum	максимум, высшая степень
means	средство, средства
means of production	средства производства
medium	средство, способ
medium of exchange	средство обмена; средство обращения
mining	горная промышленность
mixed economy	смешанная экономика
natural	натуральный
natural resources	природные ресурсы
nature	природа
non-renewable	невозобновляемый
non-renewable resources	невозобновляемые ресурсы
normal good	товар стандартного качества
nowadays	в настоящее время, в наши дни,
number	теперь
oil	количество, число
opportunity costs	нефть; нефтепродукт
ore	продукция; объем производства
own	руда
owner	собственный, свой собственный

particular	собственник; владелец
per capita	конкретный, частный, отдельный
per head	на человека
physical capital	на душу населения
planning	физический капитал
population	планирование
price	население
price for/of a good	цена
private	цена товара, цена на товар
producer	частный; собственный; личный
production	производитель, изготовитель
production cost	производство
production costs	себестоимость
production cycle	издержки производства
production process	производственный цикл
profit	производственный процесс
profitability	прибыль, доход
profitable	прибыльность, доходность
provided that	прибыльный, выгодный
purchase	при условии что; в том случае, если
purpose	закупка, покупка
quantity	цель
rapid	количество; размер; величина
raw	быстрый, скорый
raw material(s)	сырье
reduction (in smth)	сырьевые материалы
regulation	снижение, уменьшение, сокращение
relationship	регулирование
renewable	отношение; связь
rent	возобновляемый

require (smth)	рента, арендная плата
required	требуемый что-либо
requirement	необходимый
resource(s)	требование
restriction	ресурс(ы), средства
result in (smth)	ограничение
revenue	приводить к (чему-л.)
seller	доход
service	продавец
shortage	услуга
size	дефицит, недостаточность предл-ния
society	величина, размер(ы); объем
soil	общество, общественный строй
store	почва
store of value	запас, резерв
substitute (for smth)	средство сбережения
substitute good	заменитель (чего-л.)
supply	товар-заменитель
surplus	предложение (товара)
swap	перенасыщение рынка; излишек
technology	обмен
temporary	техника, технология
tenant	временный
the exchange rate of rouble against US dollar	наниматель, арендатор, съемщик обм. курс рубля по отношению к\$
the same goes for	тоже самое идет для
thoroughly	тщательно, как следует
to a great degree	в большой степени
to accept	принять
to affect (smth)	воздействовать, влиять

to allocate (smth to/in smth, smb)	размещать, распределять;
to apply	ассигновать
to assume	использовать, применять
to be at a disadvantage	предполагать, допускать
to be in high demand	быть в невыгодном положении
to be included in smth	пользоваться большим спросом
to be of importance	включаться во что-либо
to buy	быть важным, иметь значение
to choose	покупать, приобретать
to consume	выбирать, предпочитать
to cost	потреблять
to decrease	стоить, иметь стоимость
to defer	уменьшаться, убывать, снижаться
to demand (smth)	откладывать, отсрочивать
to depend (on, upon)	требовать, нуждаться в
to distinguish (between things)	зависеть от, обуславливаться
to distinguish (smth from smth)	проводить различие
to earn	отличать, различать
to economize	зарабатывать; быть рентабельным
to exchange (smth for smth)	сэкономить
to fall	обменять
to follow	падать; опускаться; понижаться
to get/have an advantage over/of smb	следовать, соблюдать добиться/иметь преимущество
to impose (on, upon)	облагать, налагать, навязывать
to improve	улучшаться, усовершенствоваться
to include (smth in smth)	включать (что-л. в состав чего-л.)
to increase	увеличиваться; расти, усиливаться
to influence (smth)	оказывать влияние
to keep an account	вести счет

to lease	брать в аренду, внаем
to lease (out)	сдавать в аренду
to look for (smth)	искать что-либо
to maintain	поддерживать, сохранять
to manufacture	производить
to make a contribution to science	сделать вклад в науку
to make a decision	принимать решение
to make a swap	произвести обмен
to maximize	увеличиваться до предела
to meet	удовлетворять; отвечать
to meet the demand	удовлетворять спрос
to meet the requirement	удовлетворять требованию
to obtain	получать, добиваться
to offer (smth to smb)	предлагать (что-л. кому-л.)
to own	владеть, обладать, иметь
to pose problems	изложить проблемы
to prefer (smth to smth)	предпочитать (что-л. чему-л.)
to produce	производить, вырабатывать
to provide	снабжать; предоставлять
to provide industry with resources	обеспечивать пром-сть ресурсами
to provide resources for/to industry	поставлять ресурсы для пром-сти
to purchase	купить
to quote	указывать
to raise	повышать; поднимать
to run (smth)	руководить; употреблять; вести(дело)
to receive	получать
to reduce	понижать; сокращать; уменьшать
to rely (on smb, smth)	полагаться
to repay	возвращать (долг)
	поднимать, повышать

to rise	продавать(ся)
to sell	снабжать; поставлять
to supply	снабжать фабрику сырьем
to supply a factory with raw materials	снабжать кого-л. чем-л.
to supply smb with smth	снабжать чем-л. кого-л.
to supply smth to smb	менять (что-либо на что-либо)
to swap (smth for smth)	торговать (чем-либо с кем-либо)
to trade (in smth with smb)	обменивать (что-либо на что-либо)
to trade (smth for smth)	пользоваться; употреблять
to use	израсходовать
to use up	меняться, варьировать
to vary	варьировать от ... к ...
to vary from ... to ...	различаться по
to vary in	меняться
to vary with	расточать, попусту тратить, терять
to waste	полный, общий
total	торговля
trade	профсоюз
trade union	передача
transfer	при хороших/плохих условиях
under good/bad condition(s)	безработица
unemployment	уровень безработицы
unemployment rate	единица
unit	расчетная единица
unit of account	употребление, польза
use	полезность
utility	стоимость; ценность
value	разнообразие
variety	различный
	заработная плата

various wage(s) wasteful with the exception of this bank	неэкономный, расточительный за исключением этого банка
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## APPENDIX

### Factors of production

In economics, factors of production means inputs and finished goods means output. Input determines the quantity of output i.e. output depends upon input. Input is the starting point and output is the end point of production process and such input-output relationship is called a production function. All factors of production like land, labour, capital and entrepreneur are required in combination at a time to produce a commodity. In economics, production means creation or an addition of utility factors of production (or productive inputs or resources) are any commodities or services used to produce goods and services. 'Factors of production' may also refer specifically to the primary factors, which are stocks including land, labor (the ability to work), and capital goods applied to production. The primary factors facilitate production but neither become part of the product (as with raw materials) nor become significantly transformed by the production process (as with fuel used to power machinery). 'Land' includes not only the site of production but natural resources above or below the soil. Recent usage has distinguished human capital (the stock of knowledge in the labor force) from labor.[1] Entrepreneurship is also sometimes considered a factor of production.[2] Sometimes the overall state of technology is described as a factor of production.[3] The number and definition of factors varies, depending on theoretical purpose, empirical emphasis, or school of economics.

### Historical schools and factors

In the interpretation of the currently dominant view of classical economic theory developed by neoclassical economists, the term "factors" did not exist until after the classical period and is not to be found in any of the literature of that time. Differences are most stark when it comes to deciding which factor is the most important. For example, in the Austrian view—often shared by neoclassical and other "free market" economists—the primary factor of production is the time of the entrepreneur, which, when combined with other factors, determines the amount of

output of a particular good or service. However, other authors argue that "entrepreneurship" is nothing but a specific kind of labor or human capital and should not be treated separately. The Marxian school goes further, seeing labor (in general, including entrepreneurship) as the primary factor of production, since it is required to produce capital goods and to utilize the gifts of nature. But this debate is more about basic economic theory (the role of the factors in the economy) than it is about the definition of the factors of production.

### Physiocracy

In French Physiocracy, the main European school of economics before Adam Smith, the productive process is explained as the interaction between participating classes of the population. These classes are therefore the factors of production within physiocracy: capital, entrepreneurship, land, and labor.

- The farmer labors on land (sometimes using "crafts") to produce food, fiber, and the like.
- The artisan labors to produce important capital goods (crafts) to be used by the other economic actors.
- The landlord is only a consumer of food and crafts and produces nothing at all.
- The merchant labors to export food in exchange for foreign imports.

### Classical



Picture 1 - An advertisement for labour from Sabah and Sarawak, seen in Jalan Petaling, Kuala Lumpur

The classical economics of Adam Smith, David Ricardo, and their followers focuses on physical resources in defining its factors of production, and discusses the distribution of cost and value among these factors. Adam Smith and David Ricardo referred to the "component parts of price" as the costs of using:

- Land or natural resource — naturally-occurring goods such as water, air, soil, minerals, flora and fauna that are used in the creation of products. The payment for use and the received income of a land owner is rent.
- Labor — human effort used in production which also includes technical and marketing expertise. The payment for someone else's labor and all income received from one's own labor is wages. Labor can also be classified as the physical and mental contribution of an employee to the production of the good(s).
- The capital stock — human-made goods (or means of production), which are used in the production of other goods. These include machinery, tools, and buildings.

The classical economists also employed the word "capital" in reference to money. Money, however, was not considered to be a factor of production in the sense of capital stock since it is not used to directly produce any good. The return to loaned money or to loaned stock was styled as interest while the return to the

actual proprietor of capital stock (tools, etc.) was styled as profit. See also returns.

#### Marxian

Marx considered the "elementary factors of the labor-process" or "productive forces" to be:

- Labor ("work itself")
- The subject of labor (objects transformed by labor)
- The instruments of labor (or means of labor).

The "subject of labor" refers to natural resources and raw materials, including land. The "instruments of labor" are tools, in the broadest sense. They include factory buildings, infrastructure, and other human-made objects that facilitate labor's production of goods and services.

This view seems similar to the classical perspective described above. But unlike the classical school and many economists today, Marx made a clear distinction between labor actually done and an individual's "labor power" or ability to work. Labor done is often referred to nowadays as "effort" or "labor services." Labor-power might be seen as a stock which can produce a flow of labor.

Labor, not labor power, is the key factor of production for Marx and the basis for Marx's labor theory of value. The hiring of labor power only results in the production of goods or services ("use-values") when organized and regulated (often by the "management"). How much labor is actually done depends on the importance of conflict or tensions within the labor process.

#### Neoclassical economics

Neoclassical economics, one of the branches of mainstream economics, started with the classical factors of production of land, labor, and capital. However, it developed an alternative theory of value and distribution. Many of its practitioners have added various further factors of production (see below).

#### Further distinctions

Further distinctions from classical and neoclassical microeconomics include the following:

- Capital — This has many meanings, including the financial capital

raised to operate and expand a business. In much of economics, however, "capital" (without any qualification) means goods that can help produce other goods in the future, the result of investment. It refers to machines, roads, factories, schools, infrastructure, and office buildings which humans have produced in order to produce goods and services.

- Fixed capital — This includes machinery, factories, equipment, new technology, factories, buildings, computers, and other goods that are designed to increase the productive potential of the economy for future years. Nowadays, many consider computer software to be a form of fixed capital and it is counted as such in the National Income and Product Accounts of the United States and other countries. This type of capital does not change due to the production of the good.

- Working capital — This includes the stocks of finished and semi-finished goods that will be economically consumed in the near future or will be made into a finished consumer good in the near future. These are often called inventories. The phrase "working capital" has also been used to refer to liquid assets (money) needed for immediate expenses linked to the production process (to pay salaries, invoices, taxes, interests...) Either way, the amount or nature of this type of capital usually changed during the production process.

- Financial capital — This is simply the amount of money the initiator of the business has invested in it. "Financial capital" often refers to his or her net worth tied up in the business (assets minus liabilities) but the phrase often includes money borrowed from others.

- Technological progress — For over a century, economists have known that capital and labor do not account for all of economic growth. This is reflected in total factor productivity and the Solow residual used in economic models called production functions that account for the contributions of capital and labor, yet have some unexplained contributor which is commonly called technological progress. Ayres and Warr (2009) present time series of the efficiency of primary energy (exergy) conversion into useful work for the US, UK, Austria and Japan revealing dramatic improvements in model accuracy. With useful work as a factor

of production they are able to reproduce historical rates of economic growth with considerable precision and without recourse to exogenous and unexplained technological progress, thereby overcoming the major flaw of the Solow Theory of economic growth.

A fourth factor?

As mentioned, recent authors have added to the classical list. For example, J.B. Clark saw the coordinating function in production and distribution as being served by entrepreneurs; Frank Knight introduced managers who co-ordinate using their own money (financial capital) and the financial capital of others. In contrast, many economists today consider "human capital" (skills and education) as the fourth factor of production, with entrepreneurship as a form of human capital. Yet others refer to intellectual capital. More recently, many have begun to see "social capital" as a factor, as contributing to production of goods and services.

Entrepreneurship

Consider entrepreneurship as a factor of production, leaving debate aside. In markets, entrepreneurs combine the other factors of production, land, labor, and capital in order to make a profit. Often these entrepreneurs are seen as innovators, developing new ways to produce and new products. In a planned economy, central planners decide how land, labor, and capital should be used to provide for maximum benefit for all citizens. Of course, just as with market entrepreneurs, the benefits may mostly accrue to the entrepreneurs themselves.

The word has been used in other ways. The sociologist C. Wright Mills refers to "new entrepreneurs" who work within and between corporate and government bureaucracies in new and different ways. Others (such as those practicing public choice theory) refer to "political entrepreneurs," i.e., politicians and other actors.

Much controversy rages about the benefits produced by entrepreneurship. But the real issue is about how well institutions they operate in (markets, planning, bureaucracies, government) serve the public. This concerns such issues as the relative importance of market failure and government failure.

Non tangible forms of capital

Human capital

Contemporary analysis distinguishes tangible, physical, or nonhuman capital goods from other forms of capital such as human capital. Human capital is embodied in a human being and is acquired through education and training, whether formal or on the job.

Human capital is important in modern economic theory. Education is a key element in explaining economic growth over time (see growth accounting). It is also often seen as the solution to the "Leontief paradox" in international trade.

Intellectual capital

A more recent coinage is intellectual capital, used especially as to information technology, recorded music, written material. This intellectual property is protected by copyrights, patents, and trademarks.

This view posits a new Information Age, which changes the roles and nature of land, labour, and capital. During the Information Age (circa 1971–1991), the Knowledge Age (circa 1991 to 2002), and the Intangible Economy (2002–present) many see the primary factors of production as having become less concrete. These factors of production are now seen as knowledge, collaboration, process-engagement, and time quality.

According to economic theory, a "factor of production" is used to create value and allow economic performance. As the four "modern-day" factors are all essentially abstract, the current economic age has been called the Intangible Economy. Intangible factors of production are subject to network effects and the contrary economic laws such as the law of increasing returns.

Social capital

Social capital is often hard to define, but to one textbook it is:

the stock of trust, mutual understanding, shared values, and socially held knowledge that facilitates the social coordination of economic activity.

Knowledge, ideas, and values, and human relationships are transmitted as part of the culture. This type of capital cannot be owned by individuals and is

instead part of the common stock owned by humanity. But they are often crucial to maintaining a peaceful society in which normal economic transactions and production can occur.

Another kind of social capital can be owned individually. This kind of individual asset involves reputation, what accountants call "goodwill", and/or what others call "street cred," along with fame, honor, and prestige. It fits with Pierre Bourdieu's definition of "social capital" as:

an attribute of an individual in a social context. One can acquire social capital through purposeful actions and can transform social capital into conventional economic gains. The ability to do so, however, depends on the nature of the social obligations, connections, and networks, available to you.

This means that the value of individual social assets that Bourdieu points to depend on the current "social capital" as defined above.

Natural resources

Ayres and Warr (2009) are among the economists who criticize orthodox economics for overlooking the role of natural resources and the effects of declining resource capital. See also: Natural resource economics

Energy

Energy can be seen as individual factor of production, with an elasticity larger than labor. A cointegration analysis support results derived from linear exponential (LINEX) production functions.

Chapter 7: The Labour-Process and the Process of Producing Surplus Value

Section 1: The Labour-Process or the Production of Use-Values

The capitalist buys labour-power in order to use it; and labour-power in use is labour itself. The purchaser of labour-power consumes it by setting the seller of it to work. By working, the latter becomes actually, what before he only was potentially, labour-power in action, a labourer. In order that his labour may re-appear in a commodity, he must, before all things, expend it on something useful, on something capable of satisfying a want of some sort. Hence, what the capitalist sets the labourer to produce, is a particular use-value, a specified article. The fact

that the production of use-values, or goods, is carried on under the control of a capitalist and on his behalf, does not alter the general character of that production. We shall, therefore, in the first place, have to consider the labour-process independently of the particular form it assumes under given social conditions.

Labour is, in the first place, a process in which both man and Nature participate, and in which man of his own accord starts, regulates, and controls the material re-actions between himself and Nature. He opposes himself to Nature as one of her own forces, setting in motion arms and legs, head and hands, the natural forces of his body, in order to appropriate Nature's productions in a form adapted to his own wants. By thus acting on the external world and changing it, he at the same time changes his own nature. He develops his slumbering powers and compels them to act in obedience to his sway. We are not now dealing with those primitive instinctive forms of labour that remind us of the mere animal. An immeasurable interval of time separates the state of things in which a man brings his labour-power to market for sale as a commodity, from that state in which human labour was still in its first instinctive stage. We pre-suppose labour in a form that stamps it as exclusively human. A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. At the end of every labour-process, we get a result that already existed in the imagination of the labourer at its commencement. He not only effects a change of form in the material on which he works, but he also realises a purpose of his own that gives the law to his *modus operandi*, and to which he must subordinate his will. And this subordination is no mere momentary act. Besides the exertion of the bodily organs, the process demands that, during the whole operation, the workman's will be steadily in consonance with his purpose. This means close attention. The less he is attracted by the nature of the work, and the mode in which it is carried on, and the less, therefore, he enjoys it as something which gives play to his bodily and mental powers, the more close his attention is

forced to be.

The elementary factors of the labour-process are 1, the personal activity of man, i.e., work itself, 2, the subject of that work, and 3, its instruments.

The soil (and this, economically speaking, includes water) in the virgin state in which it supplies man with necessaries or the means of subsistence ready to hand, exists independently of him, and is the universal subject of human labour. All those things which labour merely separates from immediate connexion with their environment, are subjects of labour spontaneously provided by Nature. Such are fish which we catch and take from their element, water, timber which we fell in the virgin forest, and ores which we extract from their veins. If, on the other hand, the subject of labour has, so to say, been filtered through previous labour, we call it raw material; such is ore already extracted and ready for washing. All raw material is the subject of labour, but not every subject of labour is raw material: it can only become so, after it has undergone some alteration by means of labour.

An instrument of labour is a thing, or a complex of things, which the labourer interposes between himself and the subject of his labour, and which serves as the conductor of his activity. He makes use of the mechanical, physical, and chemical properties of some substances in order to make other substances subservient to his aims. Leaving out of consideration such ready-made means of subsistence as fruits, in gathering which a man's own limbs serve as the instruments of his labour, the first thing of which the labourer possesses himself is not the subject of labour but its instrument. Thus Nature becomes one of the organs of his activity, one that he annexes to his own bodily organs, adding stature to himself in spite of the Bible. As the earth is his original larder, so too it is his original tool house. It supplies him, for instance, with stones for throwing, grinding, pressing, cutting, &c. The earth itself is an instrument of labour, but when used as such in agriculture implies a whole series of other instruments and a comparatively high development of labour. No sooner does labour undergo the least development, than it requires specially prepared instruments. Thus in the oldest caves we find stone implements and weapons. In the earliest period of

human history domesticated animals, i.e., animals which have been bred for the purpose, and have undergone modifications by means of labour, play the chief part as instruments of labour along with specially prepared stones, wood, bones, and shells. The use and fabrication of instruments of labour, although existing in the germ among certain species of animals, is specifically characteristic of the human labour-process, and Franklin therefore defines man as a tool-making animal. Relics of bygone instruments of labour possess the same importance for the investigation of extinct economic forms of society, as do fossil bones for the determination of extinct species of animals. It is not the articles made, but how they are made, and by what instruments, that enables us to distinguish different economic epochs. Instruments of labour not only supply a standard of the degree of development to which human labour has attained, but they are also indicators of the social conditions under which that labour is carried on. Among the instruments of labour, those of a mechanical nature, which, taken as a whole, we may call the bone and muscles of production, offer much more decided characteristics of a given epoch of production, than those which, like pipes, tubs, baskets, jars, &c., serve only to hold the materials for labour, which latter class, we may in a general way, call the vascular system of production. The latter first begins to play an important part in the chemical industries.

In a wider sense we may include among the instruments of labour, in addition to those things that are used for directly transferring labour to its subject, and which therefore, in one way or another, serve as conductors of activity, all such objects as are necessary for carrying on the labour-process. These do not enter directly into the process, but without them it is either impossible for it to take place at all, or possible only to a partial extent. Once more we find the earth to be a universal instrument of this sort, for it furnishes a locus standi to the labourer and a field of employment for his activity. Among instruments that are the result of previous labour and also belong to this class, we find workshops, canals, roads, and so forth.

In the labour-process, therefore, man's activity, with the help of the

instruments of labour, effects an alteration, designed from the commencement, in the material worked upon. The process disappears in the product, the latter is a use-value, Nature's material adapted by a change of form to the wants of man. Labour has incorporated itself with its subject: the former is materialised, the latter transformed. That which in the labourer appeared as movement, now appears in the product as a fixed quality without motion. The blacksmith forges and the product is a forging.

If we examine the whole process from the point of view of its result, the product, it is plain that both the instruments and the subject of labour, are means of production, and that the labour itself is productive labour.

Though a use-value, in the form of a product, issues from the labour-process, yet other use-values, products of previous labour, enter into it as means of production. The same-use-value is both the product of a previous process, and a means of production in a later process. Products are therefore not only results, but also essential conditions of labour.

With the exception of the extractive industries, in which the material for labour is provided immediately by Nature, such as mining, hunting, fishing, and agriculture (so far as the latter is confined to breaking up virgin soil), all branches of industry manipulate raw material, objects already filtered through labour, already products of labour. Such is seed in agriculture. Animals and plants, which we are accustomed to consider as products of Nature, are in their present form, not only products of, say last year's labour, but the result of a gradual transformation, continued through many generations, under man's superintendence, and by means of his labour. But in the great majority of cases, instruments of labour show even to the most superficial observer, traces of the labour of past ages.

Raw material may either form the principal substance of a product, or it may enter into its formation only as an accessory. An accessory may be consumed by the instruments of labour, as coal under a boiler, oil by a wheel, hay by draft-horses, or it may be mixed with the raw material in order to produce some modification thereof, as chlorine into unbleached linen, coal with iron, dye-stuff

with wool, or again, it may help to carry on the work itself, as in the case of the materials used for heating and lighting workshops. The distinction between principal substance and accessory vanishes in the true chemical industries, because there none of the raw material re-appears, in its original composition, in the substance of the product.

Every object possesses various properties, and is thus capable of being applied to different uses. One and the same product may therefore serve as raw material in very different processes. Corn, for example, is a raw material for millers, starch-manufacturers, distillers, and cattlebreeders. It also enters as raw material into its own production in the shape of seed; coal, too, is at the same time the product of, and a means of production in, coal-mining.

Again, a particular product may be used in one and the same process, both as an instrument of labour and as raw material. Take, for instance, the fattening of cattle, where the animal is the raw material, and at the same time an instrument for the production of manure.

A product, though ready for immediate consumption, may yet serve as raw material for a further product, as grapes when they become the raw material for wine. On the other hand, labour may give us its product in such a form, that we can use it only as raw material, as is the case with cotton, thread, and yarn. Such a raw material, though itself a product, may have to go through a whole series of different processes: in each of these in turn, it serves, with constantly varying form, as raw material, until the last process of the series leaves it a perfect product, ready for individual consumption, or for use as an instrument of labour.

Hence we see, that whether a use-value is to be regarded as raw material, as instrument of labour, or as product, this is determined entirely by its function in the labour-process, by the position it there occupies: as this varies, so does its character.

Whenever therefore a product enters as a means of production into a new labour-process, it thereby loses its character of product, and becomes a mere factor in the process. A spinner treats spindles only as implements for spinning, and flax

only as the material that he spins. Of course it is impossible to spin without material and spindles; and therefore the existence of these things as products, at the commencement of the spinning operation, must be presumed: but in the process itself, the fact that they are products of previous labour, is a matter of utter indifference; just as in the digestive process, it is of no importance whatever, that bread is the produce of the previous labour of the farmer, the miller, and the baker. On the contrary, it is generally by their imperfections as products, that the means of production in any process assert themselves in their character of products. A blunt knife or weak thread forcibly remind us of Mr. A., the cutler, or Mr. B., the spinner. In the finished product the labour by means of which it has acquired its useful qualities is not palpable, has apparently vanished.

A machine which does not serve the purposes of labour, is useless. In addition, it falls a prey to the destructive influence of natural forces. Iron rusts and wood rots. Yarn with which we neither weave nor knit, is cotton wasted. Living labour must seize upon these things and rouse them from their death-sleep, change them from mere possible use-values into real and effective ones. Bathed in the fire of labour, appropriated as part and parcel of labour's organism, and, as it were, made alive for the performance of their functions in the process, they are in truth consumed, but consumed with a purpose, as elementary constituents of new use-values, of new products, ever ready as means of subsistence for individual consumption, or as means of production for some new labour-process.

If then, on the one hand, finished products are not only results, but also necessary conditions, of the labour-process, on the other hand, their assumption into that process, their contact with living labour, is the sole means by which they can be made to retain their character of use-values, and be utilised.

Labour uses up its material factors, its subject and its instruments, consumes them, and is therefore a process of consumption. Such productive consumption is distinguished from individual consumption by this, that the latter uses up products, as means of subsistence for the living individual; the former, as means whereby alone, labour, the labour-power of the living individual, is enabled to act. The

product, therefore, of individual consumption, is the consumer himself; the result of productive consumption, is a product distinct from the consumer.

In so far then, as its instruments and subjects are themselves products, labour consumes products in order to create products, or in other words, consumes one set of products by turning them into means of production for another set. But, just as in the beginning, the only participators in the labour-process were man and the earth, which latter exists independently of man, so even now we still employ in the process many means of production, provided directly by Nature, that do not represent any combination of natural substances with human labour.

The labour-process, resolved as above into its simple elementary factors, is human action with a view to the production of use-values, appropriation of natural substances to human requirements; it is the necessary condition for effecting exchange of matter between man and Nature; it is the everlasting Nature-imposed condition of human existence, and therefore is independent of every social phase of that existence, or rather, is common to every such phase. It was, therefore, not necessary to represent our labourer in connexion with other labourers; man and his labour on one side, Nature and its materials on the other, sufficed. As the taste of the porridge does not tell you who grew the oats, no more does this simple process tell you of itself what are the social conditions under which it is taking place, whether under the slave-owner's brutal lash, or the anxious eye of the capitalist, whether Cincinnatus carries it on in tilling his modest farm or a savage in killing wild animals with stones.

Let us now return to our would-be capitalist. We left him just after he had purchased, in the open market, all the necessary factors of the labour process; its objective factors, the means of production, as well as its subjective factor, labour-power. With the keen eye of an expert, he has selected the means of production and the kind of labour-power best adapted to his particular trade, be it spinning, bootmaking, or any other kind. He then proceeds to consume the commodity, the labour-power that he has just bought, by causing the labourer, the impersonation of that labour-power, to consume the means of production by his labour. The general

character of the labour-process is evidently not changed by the fact, that the labourer works for the capitalist instead of for himself; moreover, the particular methods and operations employed in bootmaking or spinning are not immediately changed by the intervention of the capitalist. He must begin by taking the labour-power as he finds it in the market, and consequently be satisfied with labour of such a kind as would be found in the period immediately preceding the rise of capitalists. Changes in the methods of production by the subordination of labour to capital, can take place only at a later period, and therefore will have to be treated of in a later chapter.

The labour-process, turned into the process by which the capitalist consumes labour-power, exhibits two characteristic phenomena. First, the labourer works under the control of the capitalist to whom his labour belongs; the capitalist taking good care that the work is done in a proper manner, and that the means of production are used with intelligence, so that there is no unnecessary waste of raw material, and no wear and tear of the implements beyond what is necessarily caused by the work.

Secondly, the product is the property of the capitalist and not that of the labourer, its immediate producer. Suppose that a capitalist pays for a day's labour-power at its value; then the right to use that power for a day belongs to him, just as much as the right to use any other commodity, such as a horse that he has hired for the day. To the purchaser of a commodity belongs its use, and the seller of labour-power, by giving his labour, does no more, in reality, than part with the use-value that he has sold. From the instant he steps into the workshop, the use-value of his labour-power, and therefore also its use, which is labour, belongs to the capitalist. By the purchase of labour-power, the capitalist incorporates labour, as a living ferment, with the lifeless constituents of the product. From his point of view, the labour-process is nothing more than the consumption of the commodity purchased, i. e., of labour-power; but this consumption cannot be effected except by supplying the labour-power with the means of production. The labour-process is a process between things that the capitalist has purchased, things that have become his

property. The product of this process belongs, therefore, to him, just as much as does the wine which is the product of a process of fermentation completed in his cellar.