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CRITICAL COMMENTARY

on

MARSHALL'S "PRINCIPLES OF ECONOMICS"

INTRODUCTION

It has been generally admitted by modern economists that science of political economy is still very young and is in the act of rapid development. In fact, political economy has been acknowledged as a branch of science only at recent date. Nevertheless, the practical problems of economy presented themselves to men from the very beginning of human existence. With the increase of population in the world there was the increase of wants and the increase of efforts to satisfy those wants. The development of civilization outside the domestic affairs complicated the economic problems both national and international. There arose the necessity of investigating the social conditions regulating the production, distribution, exchange and the consumption of wealth. But the scope was so large, with so many ramifications of elements both social and ethical that it was doubtful whether political economy could be separated as a distinct science. As an independent scheme of knowledge meriting the title of science, political economy is little more than a century old, but the nucleus of modern economic doctrines is to be traced back to ancient times. In Greece Plato, Xenophon and Aristotle conducted investigations of economics from an ethical point of view. The Romans continued the investigations of the Greeks and found able exponents of agrarian theory in Cicero, Cato and Varro. In mediaeval period some of the ecclesiastical writers especially those of the school of St. Thomas Aquinas paraphrased the doctrines of Aristotle on trade, from the viewpoint of religion and condemned interests on loans of money and usury. Since the middle ages till modern times hosts of other economic writers contributed to or condemned some of the doctrines of their predecessors. There arose various schools of political economy in all civilized countries. The mercantalism in all the European

countries promoted the idea of international trade; the physiocratic school led by Quesney in France in the 18th century emphasized the necessity of following the rules of nature in order to attain the highest well-being of men; later in England Adam Smith's "The Wealth of Nations" revolutionized the conceptions of political principles; to this, new elements were introduced by the population theory of Malthus and the theory of rent enunciated by Ricardo; John Stuart Mill"combined, restated and modified the teaching of Smith, Malthus and Ricardo", and exercised great influence on Professor Alfred Marshall the greatest economist in England today. It is with Marshall that we have to rest in the following pages with regards to his doctrines elaborated in one of his most noted productions the "Principles of Economics".

"PRINCIPLES OF ECONOMICS"

"Marshall's great work has been to take the classical economics at a time when it had fallen into considerable disrepute, and, by interpretation and modification, so to round it out and adjust it as to place it abreast of the best recent thought, and regain for it the respect of the world." (1) No doubt he has achieved his aim. Like John Stuart Mill he is not dogmatic in his teaching, he is very cautious in generalization of his principles, evidently warned by the errors of his predecessors. He carefully considered the opinions of other economists of different countries, since "varieties of mind, of temper, of training and of opportunities led them to work in different ways and to give their chief attention to different parts of the problem." He was not opposed to division of labor on the wide field of political ecomomy. But his aim was to bring this division into harmony of purpose.

The method employed by Marshall was not eccentric. He uses both induction and deduction but in different proportions for different purposes. He is very keen in analytics, and refers to history and statistics as the base for his doctrines. The science of economics is very complex and its laws are inexact; consequently, Marshall claims that "'law' is but statement of tendencies more or less certain more or less definite"; and he is very careful in establishing general laws. "Economic laws are statements with regard to the tendencies of man's action under certain conditions." The course of action which may be expected under certain conditions from the members of an industrious group is the normal action of the members of that group relatively to those conditions."

There is little comment to be made on the truth exponed in his preliminary survey of the "Principles of Economics". He argues that man is just as much a part of economic studies as wealth is. Man's character just as wealth is influenced by his

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(1) "History of Economic Thought" - Haney.

daily work; prosperity of man raises him to a higher level and poverty causes his degradation. Self-reliance, independence, deliberate choice and forethought have been proved to be more fundamental characteristics of modern industrial life than competition. He advocated co-operation in opposition to competition which often assumes a destructive character, although the former may limit to a certain extent the economic freedom.

Economics concerns itself chiefly with those motives which affect most painfully and most steadily man's conduct in the business part of his life. The chief motives are measured indirectly in money which however are of different significance with regard to poor and rich people. These motives are rarely selfish, they embody noble aspirations both spiritual and material.

Economics is the science which is concerned with the production, the distribution, the exchange and the consumption of wealth. Economics is the science of wealth as satisfying wants, which consist of goods either material or non-material; wealth may be personal, collective, national or cosmopolitan; goods have value which is intimately connected with wealth. The labor or efforts of producing wealth, the consumption of it, the capital which aids the production, and finally income, the reward for labour and waiting, are some of the fundamental notions on which Marshall's Principles of Economics are based.

As civilization advances, a variety of new wants and desires are felt; but the theory of wants can claim no supremacy over the theory of efforts. Marshall quoted McCulloch as saying: "The gratification of a want or a desire is merely a step to some new pursuit, In every stage of his progress (man) is destined to contrive and invent, to engage in new undertakings; and when these are accomplished to enter with fresh energy upon others."

However, the ultimate regulator of all demand is consumer's demand. Desires cannot be measured directly but only indirectly by the outward phenomena to which they give rise, i. e. by the price a person is willing to pay for a thing rather than go without it. And therefore Marshall states that utility and

wants are used as correlative terms, having no ethical or prudential connotation.

The total utility of a thing does not increase proportionally with the increase in the stock of it. With every increase in the stock, even at a uniform rate, the utility increases at a diminishing rate. This is the law of satiable wants or, diminishing utility. When a man is in doubt if it is worth his while to purchase a thing and then is just induced to buy it, that purchase may be called the marginal purchase, and the utility of this marginal purchase may be called the marginal utility. All things being equal, the marginal utility of a thing to any one diminishes with every increase in the amount of it he already has. There is also a marginal demand price, i. e. the price which a person is just willing to pay and would decidedly not pay if it were any higher price. And therefore, the larger amount of a thing a person has, the less will be his marginal demand price. It becomes efficient if the seller on the other hand is just induced to sell at that price. If his demand increases, a person would buy more of a thing than before at the same price, and so throughout the whole list of prices at which he is willing to purchase different amounts.

The demand on the part of any individual for something is doscontinuous, that is, it cannot vary continuously with every small change in price. But in the course of action under certain conditions among the members of an industrial group, it shows a fall of demand price for every increase in quantity. From this Marshall deduces a general law of demand: "The greater the amount to be sold, the smaller must be the price at which it is offered in order that it may find purchasers, i. e. the amount demanded increases with a fall in price, and diminishes with a rise in price." As it has been already pointed out Professor Marshall is very careful in establishing general laws; so this one too he enunciates conditionally to be true (if other things are equal), i. e. "during a given time and under a given condition", if for example, there is no competition of a rival commodity which bears a great influence on demand.

Fluctuation of wants Marshall describes as elastic or inelastic. The elasticity of demand in a market is great or small according as the amount demanded increases much or little for a given fall in price and diminishes much or little for a given rise in price." This is the definition of elasticity of demand. "The elasticity of demand is great for high prices and great or at least considerable for medium prices; but it declines as the price falls and gradually fades away if the fall goes so far that satiety level is reached." In this general law Marshall means that if a commodity sells at a high price there will be a great number of those who could not afford to buy it and therefore elasticity of demand great, but if a commodity is at a low price and anybody could afford to have just as much as he wanted and be satiated the elasticity of demand is small; this is illustrated by the demand for green peas in early spring. There is a variation of the elasticity of demand in accordance as the people are rich or poor. With regard to particular commodities such as imported fruit, tobacco, the demand may be elastic on the part of the poor but not on the part of the rich, but an aggregate demand is elastic. But necessaries such as salt or bread for instance would hardly be any more consumed even if the price fall very low. The elasticity of such commodities is small or almost inelastic. The demand for water on the other hand may be very elastic. If the price is high the consumption would shrink a great deal; but the price of it may be very low down to zero, then the consumption would be very profuse indeed; every body would be satiated and the elasticity of demand would come to a minimum. Those things have the most elastic demand, which are capable of being applied to many different uses. But in general the other things which are of absolute necessity are very inelastic; their wants are hardly diminished or increased no matter if the price is high or low. Of course there are many disturbing causes which affect the elasticity of demand, for example change in the purchasing power of money, changes in habits and familiarity with new things and new ways in using them or the competition of rival

commodities or the changes in qualities of commodities.

The satisfaction which a person gets from the purchase of a commodity generally exceeds that which he gives up in paying away its price. This surplus satisfaction Marshall calls a consumer's surplus. It may be great or small and is derived from his opportunities or from his environment. If the price of a commodity falls, a person would be induced to buy more of it, but each additional purchase reacts upon the utility of the purchases which he had previously decided to make; this, if a pound of sugar cost twelve cents and a person is just willing to buy one pound at that price he would probably buy two pounds at ten cents, the utility of the two pounds would be worth to him at least twelve cents plus ten cents, i. e. twenty-two cents, while now he would pay only twenty cents. His surplus satisfaction would be at least two cents and so on for all additional purchases Marshall analyses to a great extent the complexity of these familiar notions and indicates by many examples the real worth of anything with regard to different sensibility of people, to difference in wealth, to persons individually, to groups of persons, and to collective wealth as a whole.

He quotes Harris as saying that things in general are valued not according to their real uses in supplying the necessities of men; but rather in proportion to the land labour and skill that are requisite to produce them. Marshall in addition lays great emphasis on capital and organization as essential for the production of commodities in the present civilized world. The exertion of these are to be taken into account in estimating the supply price.

Land tends to a diminishing return. It may be improved by artificial means with the aid of capital and labour and give an increasing return, but a certain point will be reached where the capital and labour will overbalance the reward for its effort which reward will be diminishing with every additional dose of capital, and labour to the land. The dose which only just remunerates the cultivator may be said to be the <u>marginal dose</u>, and

the return to it, the marginal return and whatever he gets in excess of this is the surplus produce of the land.

Here it may be added that dense population aids greatly in agriculture by its industrial development the neighbourly relations and the convenience of an organized community.

With regard to the supply of oabor Marshall criticizes in a lengthy way the Malthus famous theory of population, and comments on the population in England in the eighteenth and nineteenth centuries and its influence on the industrial activities.

Health and strength of the population, he insists, is most requisite for general happiness and well-being of the country. It is the basis of industrial efficiency. But the form which natural vigour takes depends largely on training. Marshall therefore advocates the education of youth so as to give the rising generation the opportunities for the development of the innate qualities whether industrial, technical or intellectual; for "Education" he says "is a national investment."

Capital is another agent of production and is distinguished from wealth in this sense that is aids production while wealth is the result of production.

Lastly the industrial organization as an agent of production is the most powerful factor in industrial progress. Marshall following Adam Smith gives a great significance to this doctrime. Economists owe much to many profound analogies which have been discovered between industrial organization on the one side and the physical organization of the higher animals on the other. Darwin's theory of the survival of the fittest has been applied in political economy and the conditions under which the faculties could be best developed indicated.

Passing from the primitive stages of industrial development, we come to recognize the necessity of industrial organization. The first condition of an efficient organization of industry is that it should keep every one employed at such work as his abilities and training fit him to do well. Every increase of wealth and every incfease in the numbers and intelligence of the

people increases the facilities for higher industrial development. Unskilled labour tempted by the reward of skilled work aims at specialization; one means of production is substituted by a better means; old machinery gives way to new; one invention suggests and calls forth another invention; individual enterprises unite into companies, companies into trusts or joint stock companies; on the other hand, against these co-operative associations are formed and so the struggle for survival goes on.

The organization of markets is intimately connected with industrial organization. It is by means of markets that distribution and exchange of the produce of all the aforesaid agents takes place. Market according to Cournot says Professor Marshall is "any whole region in which buyers and sellers are in such free intercourse with one another than the prices of the same goods tend to equality easily and quickly." Jevons says: "Originally market was - a public place in town where provisions and other objects were exposed for sale; but the word has been generalized so as to mean any body of persons who are in intimate business relations and carry on extensive transactions in any commodity ..... The trades may be spread over a whole town or region or country and yet make a market, if they are, by means of fairs, meetings, published price lists, the post office or otherwise in close communication with each other.

It is difficult to ascertain the boundaries of a market. A particular commodity which would not bear a long carriage either by being too bulky, as for instance bricks, or things perishable as some vegetables, have a narrow market; their fluctuation may be great. On the other hand things of universal demand as iron, cotton, wheat have a wide market. Highly organized markets such as a stock exchange have an international market. Here telegraphic purchases strengthen the tendency to the same level of the price which generally though low are most reliable. Hence follows the law: "The larger the market for a commodity the smaller generally are the fluctuations in its price and the lower is the percentage on the turn over which dealers charge for doing business in it." But even in markets of retail dealers

local prices are controlled by the neighboring town dealers, especially in the country which is well developed and where good communication is established.

The forces of demand and supply tend to bring themselves into equilibrium and the markets accordingly vary with regard to the period of time in which these forces are allowed to play. If the period is short the supply is limited and the prices are high; if the period is long the prices would depend on the cost of production plus the earnings of management.

Barter and markets for unique things play of course no part in true equilibrium. The rule is only true with regard to ordinary dealings. The price of a commodity such as corn for instance may be tossed hither and thither, the sellers by waiting may bring the price up on the one hand, and the buyer by waiting may bring it down on the other. Finally the equilibrium is established and the price which buyers are willing to pay is just equal to that price for which the sellers are willing to sell. Equilibrium price in nearly all dealings in commodities that are not very perishable is affected by calculations of the future relations of production and consumption. Dealers forecast the harvests, take account of the amount of each kind of grain sown and of things which could be used for substitute, count the expenses of production, the labor cost of the delivery and the capital and waiting. If we eliminate here the dealers' combination, so that each acts for himself and allow free play of the forces of supply and demand, we would thus aim at an equilibrium of normal supply and normal demand. In this case though every one acts for himself his knowledge of what others are doing prevents him from taking a lower or paying a higher price than others. There is always at work an active force which tends to increase the amount of goods brought forward for sale if the demand price is greater than the supply price; and on the other hand to diminish it if the demand price is less than is sufficient to make it worth while to bring goods to market on that sale. But when the demand price is equal to the supply price, the amount produced has

no tendency either to be increased or to be diminished, it is in equilibirum. The amount thus produced is the equilibrium amount and the price at which it sells is the equilibirum price. Such an equilibirum is stable. The oscillation about a position of stable equilibirum is very small and irregular. There may be several positions of equilibirum in the long run.

The element of time in relation to demand and supply is very important . The normal value of a commodity is that which economic forces tend to bring about in the long run, if the general conditions of life were stationary. The term normal however is very elastic with regard to different periods of time. Marshall gives several examples illustrating how at certain periods a very high price and at others a very low price is the normal price. Hence in estimating the normal supply price for a long period, allowance has to be made for any change of conditions in the future such as droughts, trade combinations or others. It is necessary to break up the complex questions of many possible changes which may be affected by the element of time and study them separately so as to solve the whole problem.

In a stationary state (which of course can never exist) i. e. in which the general conditions of production and consumption, of distribution and exchange remain constant the element of time would be little felt, the cost of production would be governed by natural laws, there would be no fundamental difference between the present and the future effects of economic causes; the cost of production would govern value. But in the true world in which we live such rule does not hold good. The interaction of countless economic causes bring to us complexity of problems. Marshall draws this illustration of his doctrine from the fishing trade which may be affected by very quick changes, such as uncertainties of weather, or by changes of moderate length such as the increased demand for fish caused by the scarcity of meat, in the years following the cattle plague, or by changes of long duration great increase of the demand for fish which might result from the rapid growth of population which has a distaste to meat. In

the first case the price oscillates from day to day without affecting perceptibly the short period normal level about which the price fluctuates; in the second case an increase in the amount demanded raises the normal supply price because there would be very few trades yet developed to supply fish on a large scale in such a short period; but in the third case the period of time being long, the trades on large scale develop, and while there is inexhaustible amount of fish in seas, the normal price of fish would decrease with an increase in demand. It follows then that market values are governed by the relation of demand to stocks actually in the market, with more or less reference to "future" supplies, and not without some influence to trade combinations.

By the element of time is also affected the marginal production. That part of production which a person is just induced to produce being on the margin of doubt if it is worth his while to produce may be called marginal production. The causes which determine this margin vary with the length of the period under consideration. For short periods, the stock of appliances of production are practically fixed, but their employment varies with demand. If the demand is great and the prices are high the undertaker may hire additional labor, work over time and exert very great efforts until he is in doubt whether it is worth his while such exertion. Such exertions on the part of all the undertakers naturally may glut the market and its immediate effect is the expectation of the low prices. If the prices are low the undertaker throws out of work many appliances of production, slackens the work, and produces for a time for any price that covers the prime cost and just rewards him for the trouble. But on account of the trade etiquette of not "spoiling the market" they may wait for higher prices. The price which they now are just willing to take in their marginal supply price for short period. But in a trade which uses very expensive plant the prime cost of goods is but a small part of their total cost, prices can fall far below their normal level without reaching the prime cost, and although they could have a large surplus, the fear

of "spoiling the market" prevents them from selling below the marginal supply price of the others; for otherwise such dealers would ruin the smaller undertakers and finally themselves. In the end the consumers would also suffer for the production would cease while the demand would be increasing. Moreover such fall in prices is prevented by supplementary cost which exerts indirect influence on the cost of production in a large plant. For short period then the supply of suitable machinery of skill and ability and of industrial organization has not time to be fully adapted to the demand, but the producers have to adjust their supply to the demand.

In long periods on the other hand the flow of appliances for production have time to be adjusted to the incomes which are expected to be earned by them. The estimates of those incomes govern supply, which is the true long period normal supply price of the commodities produced. There is of course no sharp division between long and short periods, they merge one into the other.

Marshall distinguishes direct demand from the indirect or derived demand. The demand for those things which are ready for immediate consumption, for instance bread, is direct. The demand for raw materials and other means of production, as for instance flour mill and oven, is indirect. Such demand is called a joint demand. Direct demand is called a joint demand. The direct demand for houses gives rise to a joint demand for labor, bricks, stone, wood, plasters, etc. The demand for one of these is indirect or derived demand. A temporary check to the supply of, say, plasterer's labour will cause a proportionate check to the amount of building and although the supply prices of other factors will not be greater than before the demand price of the houses will be higher.

But "the price that will be offered for anything used in producing a commodity is for each separate amount of the commodity limited by the excess of the price at which that amount of the commodity can find purchasers over the sum of the prices at

which the corresponding supplies of the other things needed for making it would be forthcoming.

If the excess if very great the marginal price for the plasterer's labour could be afforded to be high; if the excess is not very high or even low then the commodity in question is not very important, it could be substituted or even done without. There are four conditions under which a check to supply may raise much the price of a requisite of production: (1) the factor should be essential; (2) the demand for it should be stiff and inelastic; (3) it should constitute but a small part in the expenses for the production of the whole commodity; (4) it should be such that even a small check to the amount demanded should cause a considerable fall in the supply prices of other factors of production.

Raw materials and labour could be applied to many branches of industry for producing a variety of commodities; each of these commodities has its own direct demand, and there is a corresponding demand for the things which are used in making those commodities. Such demand is rival or competitive demand. But in relation to the supply of the product they co-operate and there is a composite demand for them by several groups of producers.

Things which cannot easily be produced separately are called joint products. Thus, beef and hides, wheat and straw have a common origin, i. e. a joint supply which could be distributed to a variety of comsumers.

If the proportions of joint products can be modified, their several costs may be discovered. If there is a great demand for wool and hardly any demand for mutton in spite of mutton being very cheap and wool very dear It would pay to save the extra expense for good feeding of sheep but just to cultivate good quality of wool, or vice versa.

A demand can often be satisfied by any one of several routes according to principle of substitution. These routes are rivals with one another; and the corresponding supplies of commodities are rival or competitive supplies relatively to one an-

other. But in relation to the demand they co-operate with one another; their composite supply meets the demand. Joint and composite demand and joint and composite supply have some bearing on the causes that govern the value of almost every commodity. Producers have always to consider how the demand for any raw material in which they are interested is dependent on the demand for the things in making which it is used and how it is influenced by every change that affects them. There are intricate relations between the values of different things. The examples given by Marshall are those of charcoal which sometimes was used in making iron and used in tanning. The influx of foreign iron to England affected the production of oaks and the bark for the purpose of tanning became scarce and dear; on the other hand, an excessive demand for a thing may cause its source of supply to be destroyed, and thus render scarce any joint products that it may have. Again of soda and bleaching materials, cotton and cotton-seed oio, the chance in prices of one affects the prices of the other. (1)

There are comparatively few things, the demand for which is not greatly affected by the demand for other things to the usefulness of which they contribute. But the principles of substitution play a great part. Manual labout they substitute with machinery; from various implements they choose those which are best suited for their purpose. But each application would not be pushed so far that it does not leave any net advantage. Thus, in farm work the use of steam-power may displace the horse power to a certain extent, but there are instances where the application of steam power or horse power comes to the margin of indifference and any farther use of steam power will leave no net benefit, while the use of horse power can still leave some profit.

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(1) There are some difficulties as regards prime and total cost in relation to joint products. Here Marshall is not very clear. But it appears that he means that the difficulty arising when the commodities which form a joint supply differ in bulk and weight, and the means of transportation vary, access to the markets difficult for some and easy for others, the necessity of insurance against risk of certain commodities exacts large premium, and others may go without the insurance, and finally new and uncertain enterprises which may reward or ruin the undertaker present a difficulty as regards prime and total cost in relation to joint products.

On the margin of indifference the efficiency of steam power and horse power must be proportionate to their prices.

The notion of the marginal employment of any agent of production implies a possible tendency to diminishing return. Almost in every branch of industry the diminishing return results from disproportionate use of various agents of production; that is the net product becomes smaller and smaller until it reaches the margin of profitableness. This margin however does not govern value, but is itself governed together with value by the general relation of demand and supply. It may be compared to a pressure of steam on the valve in a cooking boiler.

Net return, profit and interest are often used as synonymous terms in every day life. But Marshall from the viewpoint of political economy distinguishes these terms. Interest and profits are directly applicable to fluid capital, but only indirectly to particular embodiments of capital. If a person invests his purchasing power in material or labor that will soon produce a saleable product, the sale would replenish his fluid capital the net income can be ascertained and represented by a certain ratio to the invested capital. But if he invests his money in land or a durqble building or large machinery the return which he gets from the investment may widely differ from his expectations. It cannot be ascertained; it will be governed by the market for his produce which in the future may change its character through various causes. The income which he thus gets is more akin to rent and Marshall calls it quasi-rent. The interest on free capital and quasi-rent on an old investment of capital shade into one another gradually; there is no sharp line of division between floating capital and that which has been sunk; even the rent of land being not a thing by itself, but the leading species of a large genus.

Pure rent in the strict sense of the term is scarcely ever met with. Even land which has the best title to it owes much of its income from drainage, or irrigation, etc. Nature has blended various elements in problems connected with it. Discuss-

ing the incidents of the tenure of land Marshall accordingly takes imaginary instance so that sharp outlines could be assigned to each stage of problem in relation to value. As a prelude to his famour illustration on meteoric stones, Marshall first takes the incidence of a tax on printing matter which tax would strike hard those engaged in the trade. For if they raise price the demand falls off, machines stand idle, compositors get low prices, employers disperse, paper industry curtailed, the turn over of the booksellers would be diminished, and all would suffer a little; but if the tax were only local, the compositors would migrate beyond its reach; and the owners of printing houses might bear a large and not a smaller proportionate share of the burden than those whose resources were more specialized but more mobile. If the tax was levied on printing presses, it would not immediately affect the output of printing nor its price, it would but intercept some of the earnings and lower the quasi-rents of the presses. But the net profit on the invested capital in presses would not be affected; since the presses would be put to full use and others discarded. As the old presses wore out, the tax would add to marginal expenses, and therefore the supply of printing would be curtailed, and gradually the burden of the tax would be distributed to all classes in that line. New presses would be introduced only up to the margin at which they could yield normal profit. Marshall now proceeds with his main illustration of imaginary meteoric stones which are harder than diamonds. He takes first instance when the stones are limited but could be worn out; next when the stones could be increased slowly, and lastly when the stones could be increased quickly and quickly worn out. This string of hypothesis he connects with the rent proper, quasi-rent and interest or profit. In the first instance the use of such stones would revolutionize many branches of industry, and the owners would get a large producer's surplus which would be governed by the demand for their service and the number of stones, but the value of stones could not exceed much the cost of producing tools of hard steel for the same purpose. The intensive application

of them by working over time and paying therefore high wages would diminish the net return. If any particular manufacturer buys more stones from that fixed number in existence, he would expect that in the long run he will reap fair profit on his outlay just as on the machinery. But the net income would be governed by the value of their services, which may vary through some changes in the process of production or of demand for the things made by those stones. Hence the value of stones just like that of a machine would be reached by capitalizing the income which they would be able to earn. The income earning power and therefore the value of each (no matter what its cost), would be governed by the general demand for its products in relation to the general supply of those products. (In the case of the machine that supply would be controlled by the cost of new machines) Such income is the rent proper.

In the second instance the people would search for the stones only up to that margin at which the probable gain would reward them for their labour and capital involved. The normal value of the stones would be such as to maintain equilibrium between demand and supply. The income derived from these stones is not rent in the strict sense of the term.

But in the last instance, the value of the stones would always correspond closely to the cost of getting them. Hence the income derived here may be classed as interest. A uniform tax on the stones in the first case lowers their net service in each use by the same amount, and in this case a tax remains on the owner; while in the last case a tax would be shifted to consumers; since in this case a business man when making his estimates of the cost of any undertaking may enter interest and a tax as part of the prime special or direct expenses of his undertaking for the time during which those stones will be used (together with wear and tear.)

But there is more difficulty with regard to intermediate stages. Here the demand for stones may rise or fall according to changes in urgency and volume of the uses and consequently their values rise or fall a great deal. The income thus yielded

may vary and is more akin to rent than to interest on the cost of producing the stones. A tax upon stones would check the supply, and the rental of stones would in time gradually increase to the height of cost of producing them, and in the interval a great part of the tax would fall upon the owners. If the life of the stones was long relatively to the process of production, some of them may be in excess at certain periods and lay idle. The owner may make up his estimate of the marginal price for which he was just willing to work without entering in that estimate interest on the value of the stones. That is some cost which would be classed as prime cost over a long period would be classed as supplementary cost in relation to a short period.

With the reference to these illustrations Marshall distinguishes true rent, quasi-rent and interest or profit on any investment of capital, "even the rent of land being not a thing by itself but the leading specie of large genus."

He also distinguishes differential rents and scarcity rents. For if all the meteoric stones in existence were in the hands of a single undertaker who would work them to the full extent profitably possible without using monopolistic power in raising prices, then the prices of their services would be governed by natural scarcity of the aggregate output of their services in relation to the demand for those services. The surplus is the excess of this scarcity price over the aggregate expenses. It is a scarcity rent. On the other hand it could have been reckoned as the differential excess of the aggregate value of the net services of the stones over that which would have been reached if all their uses had been as unproductive as their marginal uses.

Land involves many complicated problems. The cultivation of land may be extensive or intensive. In England the land is scarce and the intensive cultivation is more practical.

If a war happens to come, extra application of capital and labor would be needed to produce more at home. Now the more favourable the results, the less will be the rise in prices of produce. But there might have been improvements already made which are or permanent duration; the income derived from these

improvements gives a surplus above the special costs needed for raising extra produce, but it is not surplus above the total cost of the produce. It is that surplus which is needed to cover the general expenses of the business. Now if such surplus is estimated to be favorable the investment might be made and in the long run afford a tolerable net income. This income would be but the price required to be paid for the efforts and sacrifices of those who make them. The expenses of making them thus directly enter into marginal expenses of production, and take a direct part in governing long period supply price. But in short periods relatively to the time required to make and bring into full bearing of those improvements , no such direct influence on supply price is exercised, by the necessity that such improvements should in the long run yield net incomes sufficient to give normal profits on their cost. These incomes may be regarded as quasi-rent which depend on the price of the produce.

From this Marshall concludes: (1) The amount of produce raised and therefore the margin of cultivation are both governed by demand and supply; (2) The general conditions of demand and supply or their relation to one another are not affected by the division of the produce into the share of rent and the share for expenditures - amount of that rent being governed by the fertility of land, the price of the produce and the position of the margin. (3) If the cost of production were estimated for parts of the produce which do not come from the margin a charge on account of rent would need to be entered in this estimate; and if this estimate were used in an account of the causes which govern the price of the produce then the reasoning would be circular. (4) The cost of production on the margin is that to which the price of the whole produce tends; it focusses the causes which govern the price, and therefore could be ascertained without reasoning in a circle. The cost of production of other parts of the produce cannot. So much for the old land.

When a new country is first settled and land is free, immigration proceeds up to the margin at which the pioneer's en-

durance is just rewarded. He is engaged in a risky business and expects a high reward. This reward or income is the discounted value on his capital and his own labour. But for his pioneer hardships he will be rewarded by the value of the land in addition to high aggregate gains for his produce. The margin up to which the free land is peopled is measured by just adequate gains. But when a charge is made such margin will be measured by the surplus of the gains in the nature of rent which will cover such charges and just rewards the pioneer's endurance.

Just as there is likeness amid unlikeness between land and appliances made by man, there is likeness amid unlikeness between true rent and quasi-rent. Sand is permanent fixed stock but it may be improved or not. Machinery, etc. may increase or diminish but there may be practically a fixed stock of it for short periods; and for those periods the incomes derived from them stand in the same relation to the value of the products raised by them as to the true rents. A tax on the produce of the land discourages the cultivation of the land and tends to be shifted to the coneumers; on the other hand a tax on the value of the land is borne by the farmer. A tax on the public value of land (therefore land which was not made valuable by individual efforts) does not diminish much the supply of produce, and is not shifted; the excess of net return above normal profits of such land belongs properly to true rent. A farmer always tries to get the maximum rewards which his outlay can be made to yield. He makes competition of crops for the possession of particular soils. He accordingly distributes the cultivation of his crops by increasing growth of one or diminishing growth of the other, or by substituting one for the other and he will put the investment of capital and labor in each direction until the margin of profitableness is reached.

Referring again to the illustrations of a tax on printing, Marshall compares a tax assessed on a single crop in a particular locality on the one hand and on the other hand a tax on the

crop in general. The effect of a local tax is in strong contrast to that of a general tax. For unless the local tax covered most of such ground in the country on which that crop thrives, local farmers would suffer and it would drive them beyond its boundary, i. e. they would produce something else, very little revenue would be got from it, the public would pay higher prices for that particular crop. If the tax were general the supply would be checked but the price may rise even by the amount of the tax and the production, the production would go up again, the farmers would not suffer. This illustrates quasi-rents with relation to a single crop. Similarly if the buildings or machinery used in producing one commodity were diverted to producing another on account of better profit, the supply of the first commodity for the time would be less and consequently the price higher, therefore the marginal cost will be affected by the extent to which these appliances are called off for work in other branches. The remaining appliances would be put to more intensive work on account of the external demand thus increasing their earning power, this earning power is apparently due to the increased value of the commodity. There will be no direct or numerical relation between the increase in the price of the first commodity, and the income derived from the appliances transferred to another industry.

General progress of society exerts an important influence on the value of land. The growtn of a non-agricultural population in the neighborhood raises the value of the land and consequently the value of the produce. The extra income which can be earned on the more favored site gives rise to what may be called a special situation rent. It may be agricultural or business site.

The greater part of situation value is "public value", but sometimes advantageous situation may be created by the effort of an individual person or company who may, for example, build a railroad, or plan a new town. These individuals deriving income from such land may regard it as profit rather than rent, because they undertook great risk in which they could expect great gain or

great losses. But as a rule site value owes little to the owner of the site. For instance, in a developing town the amount and character of the building put upon each plot of land is in the main that from which the most profitable results are anticipated, with little or no reference to its reaction on the situation value of the neighborhood. Site values are governed by the causes which are mostly beyond the control of the owner.

The capitalized value of any plot of land is the actuarial "discounted" value of all the net incomes which is is likely to afford with certain allowance for incidental expenses and its incidental advantages. The ground rents for long leases are based on the estimates of future true site values, that is the present discounted value of all the fixed money payments under the lease tends to be equal to the present capital value of the land, after deducting several obligations or inconveniences and accounting for the rise in annual site value as the population progresses.

The law of diminishing return applies to the trade in building as well as to agriculture. The capital per square foot which would give the maximum return if the site had no scarcity value, varies with the prupose for which the building is wanted just as in the case of agriculture it varies with the crop; but when the site has a scarcity value it is worth while to apply the capital to the building until the margin is reached, i. e. until there is a doubt if farther addition is more profitable than extending the building on a wider space, so that if the building was the factory, the expenses of production of manufactures may then be reckoned as those of the goods which are made on the margin of building, so as to pay no rent for land, that is to say the rent of the land does not enter into that set of expenses at the margin at which the action of the forces of demand and supply in governing value may be most clearly seen.

The competition of factories, warehouses, etc. for the same land will cause building in each locality to be carried up to that margin at which it is no longer profitable to apply more capital to the same site; some would find more profitable to move

to other places, where the lower rental value of the land would diminish their expenses of production. But the general relations of demand and supply cause production to be carried up to a margin at which the expenses of production are so high that people are willing to pay a high value for additional land in order to avoid the inconvenience and expense of crowding their work on to a narrow site. These causes govern site value and site value is not governing marginal costs. The costs at the margin indicate the action of the forces of demand and supply.

The equilibrium of normal demand and supply has a peculiar relation with regard to the law of increasing return. The tendency to increasing return acts slowly. It seldom shows itself immediately on an increase of demand. For example, the supply of a certain new kind of commodity for a time would be of high price, for it incurs great cost of production. But after some time the producing of it would be facilitated and the use popularized, the price would be lowered gradually.

There is an important difference between demand and supply in regard to elasticity. The amount of the commodity demanded may increase much or little according as the demand is elastic or inelastic; and a long or short time may be required for developing the uses of the commodity if the price falls. Those demands which show high elasticity in the long run, show a high elasticity almost at once. But an increase in the price offered by purchasers does not always increase supply. There is great or small elasticity of supply for short period according as the dealers have large or small reserves in the background and according to their estimate of the next market.

With regard to long period, the ultimate output corresponding to an unconditional demand would be theoretically infinite and therefore the elasticity of supply is theoretically infinite.

Marshall distinguishes the economics of the whole industry from that of an individual firm. The first is like a tree that grows stronger and stronger as time creeps on until it finally begins to decay, the latter is like the leaves that grow

to maturity, reach equilibrium and decay, the the new leaves come on and so on. Again the relation between the individual firm and his special market differs in important respects from those between the whole body of producers and the general market. The increase of production in the first lowers the demand price while in the latter case as regards the whole body of producers the price is controlled by the fear of spoiling the market. But the individual firms collectively make the industry. Hence the aggregate production for a general market is the outcome of the motives which induce individual producers to expand or contract their production.

The size of an individual firm while partly dependent on circumstantial conditions, is governed (other things being equal) by the general expansion of the industry. New appliances may be introduced if it is worth while. We thus come at the marginal cost by weighing the cost of the whole output against the expected cost. This is the true long period marginal cost, which may fall with gradual increase of demand as time goes.

We set down a diminished supply price against the increased amount of the flow of goods where the profit could still be nade at a lower price. There may come new economies in producing goods but there may also come inconveniences. Hence the equilibrium stands between the forces of progress and decay.

Changes in fashion, new investion, depopulation or the exhaustion of a source of supply or a new source of supply may cause the prices set against any estimated consumption and production of the commodity to cease to be its normal demand and supply prices for that volume of consumption and production.

The increase of normal demand means an increase of quantity which can find purchasers at any price. Similarly an increase in normal supply means an increase of the amounts that can be supplied at each several price.

The effect of an increase of normal demand may be considered from three points of view, according as the commodity in question obeys the law of constant or of diminishing or of increasing returns.

In the first case an increase of demand simply increases the amount produced without altering its price. In the second case the increase raises the price and causes more to be produced, but not so much more as in constant return. In the third case an increase causes much more of the commodity to be produced, and lowers the price. If the normal demand remains unchanged increased facilities for supply will always lower the normal price at the same time that it leads to an increase in the amount produced. But fall in prices will be small, great or very great according as the commodity obeys the law of a diminishing, of a constant or of an increasing return.

Changes that raise or lower the supply schedule may be represented by a tax or bounty. In case of a tax, if the commodity is one the production of which obeys the law of constant return, the consumer's surplus will be diminished by more than the tax; for the consumption becomes smaller and the consumer loses that surplus which the state receives in taxes and in addition he loses the surplus of that consumption which is destroyed by high prices. Conversely, the gain of sonsumer's surplus caused by a bounty in this case is less than a bounty, for the new consumption which is caused by a bounty does not share the surplus caused by a bounty on the previous consumption.

A tax on the commodity which obeys the law of diminishing return will raise the price and diminish the supply, but other expenses of production will be lowered, and therefore the rise of the price will be less than the tax. In this case the gross receipts from the tax may be greater than the loss of consumer's surplus and they will be greater if the law of diminishing return acts sharply. A bounty in this case will lead to increased production and may extend to great expenses at the margin than before will lower the price and increase consumer's surplus less than in the case of constant return, i. e. much less than the bounty.

Similarly a tax in the case of increasing return is more injurious to the consumer than if levied on the one which obeys the law of constant return. And a bounty in this case

will increase the consumer's surplus more than the bounty. It follows then that a position of stable equilibrium of demand and su ply is a position also of maximum satisfaction.

But this doctrine is true only in this limited sense that the aggregate satisfaction of the two parties concerned increases until that position of equilibrium is reached; otherwise there are many exceptions. Such things as difference in wealth and a fall in price due to improvements cause the exceptions to the rule.

The doctrine of maximum satisfaction has never been applied to the demand for and supply of monopolized commodities. The prima facie interest of the owner of a monopoly is clearly to adjust the supply to the demand in such a way as to afford him the greatest possible total net revenue. The monopoly revenue is the amount by which the dividends are in excess of interest and insurance against risks. A monopoly revenue schedule may be constructed thus: Having set against each several mount its demand price, and its supply price (comprising interest on all the capital invested and salaries of all directors and officials) subtract each supply price from the corresponding demand price and set the residue in the monopoly revenue column against the corresponding amount of the commodity. The aim of the company having regard only to their own immediate dividend will be to fix the price of their commodity at such a level as to make the aggregate net revenue the largest possible.

In case of a change in the conditions of supply such as new expenses, a tax or a bounty bearing on the total mount of a monopoly, whatever be the price charge and the amount of the commodity sold, the monopoly revenue will be increased or diminished, by the sum of the bounty or a tax or other expenses, as the case may be. The change will not alter the monopolistic course of action with regard to selling prices and it will still afford him the maximum satisfaction. For if he raised the prices to cover these expenses the consumption would be diminished and in spite of the rise in prices his total revenue would diminish; if in case of a bounty he lowered the prices and produced a little more, total

revenue would still be less on account of low net returns. The same is true ot a tax or a bounty proportioned to the monopoly revenue. But it will have its effect if it is proportional to the quantity produced. A tax in such case would cause the diminution of production and thus diminish the expenses and the prices would be raised to make up for the tax. On the other hand a bounty would cause the production to be increased and for this account the prices will be lowered. (1)

The monopolist may sometimes lower his price with a view to the future development of his business, his aim may be to familiarize the people with a new commodity, and then raise the prices and this action may after recuperate his loss. Sometimes a monopolist may have his interest closely connected with that of the people, or there may be some philanthropic motives on the part of the monopolists to lower the prices.

The total benefit of the sale of a commodity is the sum of the monopoly revenue and consumer's surplus, and if the monopolist regards the comsumer's surplus equally desirable he will produce just that amount of the commodity which will make this total benefit a maximum. But if the consumer's surplus be counted at only a fraction of its actual value, the sum of the two may be called a compromise benefit. Marshall deduces the law that the greater be the desire of the monopolist to promote the interests of somsumers, the greater amount will be produced and offered for sale and the prices will be less. The importance of the interest of the comsumers has been under-estimated, because direct personal experience seldom helps much towards forming correct estimates of them, andour public statistics are not yet properly organized.

There is a difficulty connected when two monopoliss depended on each other's aid; as for example, the monopoly in copper and the monopoly in zinc trades. Both are complementary. There is no means of determining where the price of the ultimate product of brass will be fixed without some agreement between the two monopolists on the prices of each complementary commodity, i. e

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(1) It has happened often that the monopoly can be worked more economically than competition; since there are more expenses involved in aggregate production of competitors.

on a common policy.

Speaking on the distribution of National Income Marshall starts by surveying the doctrine on wages of earlier economists such as the physiocrats, Adam Smith, Ricardo, Malthus and Mill; and concludes that highly paid labour is generally efficient labour, and therefore not a dear labour. So as to simplify the analysis of difficult and complex economical problems Marshall often makes use of imaginary examples. In studying the influence of demand on the earnings of labor he first supposes that all people are industrially equal and interchangeable and that population is stationary. In this case the problem of value is very simple, the demand is then the main regulator of distribution. Things exchange for one another in proportion to the labour spent in producing them.

If a new invention doubles the efficiency of work, of a thing, that thing will fall to half its price. The effective demand for everyone's labour will be little increased, and the share of each will be a little larger. And if there be an increase in efficiency in many trades the national dividend will be considerably larger. The commodities produced by these trades will constitute a considerably larger demand for those produced by others. If each has his own trade where specialized skill is required the position would not be greatly changed. The current value of everything will fluctuate about its normal value which will depend on the amount of labour spent on the thing; and the earning of everyone will be governed simply by the bounty of nature and by the progress of the arts of production.

Again if population increases but not under the influence of economic causes and labour being of the same grade, and national dividend equally divided, every new victory over nature will increase equally the comforts of each; or if the tendency comes to diminishing return, equal distribution will still be maintained. If there are many grades but the numbers in each grade are not governed by economic causes, the aggregate national dividend will be governed by the abundance of nature's return to man's work; but the distribution will be unequal, it will be

governed by the demand of the people themselves.

Now in our own condition of life the relation of labour and capital play a great part in the problem of distribution.

With regard to the distribution of the national dividend among the various agents of production a business man looks to the margin at which the farther application of an agent of production ceases to be profitable; whether he has the right number for his work. He seeks the marginal employee supposing him to be of normal efficiency. This however is the doctrine of theory of wages, since in order to estimate net product of the worker we must take into consideration all the expenses of production.

Similarly in demand for capital the margin of application plays just as important part. The capital in any industry shall be pushed until the net profit of the produce of any agent of production is just a little more than the rate of interest on the capital invested in it. And this margin is a boundary line cutting one after another every possible line of investment.

Every agent of production, land, machinery, skilled labor, unskilled labour, etc., tends to be applied in production as far as it possibly can. The uses of each agent of production are governed by the general condition of demand in relation to supply. And equality is maintained between its values for each use by the constant tendency to shift it from uses of less value to uses of greater value according to the principle of substitution.

When we inquire what is it that governs the marginal efficiency of a factor of production, we must first see what is the supply of that factor and the causes that determine that supply. The nominal value of everything rests like the keystone of an arch; the forces of demand press on the one side, and those of supply on the other. The amounts and prices of the several agents of production mutually govern one another.

The effective supply of any agents depends on the stock of it in existence, on its application to production, and on the remuneration for the work. Good remuneration causes the supply of efficient lavour, and raises the comfort of the lower classes. It causes the population to increase, and the death-rate to diminish.

A rise in the demand price for labour increases the supply of it, and a fall in the demand price diminishes the supply. There is no incentive to marriage for poverty causes discomforts, illness and death.

Thus the demand and supply exert co-ordinate influence on wages. The marginal productivity of labour rules the demand price; wages are not governed by demand price nor by supply price, but by the whole set of causes which govern demand and supply.

Wages of any worker tend to be equal to the net product of his labour, i. e. every worker will be able with the earnings of a hundred days' labour to buy the net products of a hundred days' labour of other workers in the same grade with himself. But if the earnings of workers in another grade are higher there will be not such equality of a lower grade with a higher grade. The equilibrium level of the real wages in any trade depends directly on and varies directly with the average efficiency of the trades which produce those things on which workers spend wages to produce things in their own trades. If any trade rejects an improvement by which its efficiency could be increased, it inflicts an injury to the trades which buys the former trade's product, for its own use. A trade may gain by anything that changes the relative positions of different grades in such a way as to raise his grade relatively to the others. Thus the shoemaker will gain by increase of medical men, for his expenses will be now smaller.

There is a real if restricted competition for the field of employment between capital and labour.

The competition is really between some kinds of labour aided by a good deal of waiting and other kinds of labour added by less waiting. As for example, one shoemaker who uses an awl and the other who uses a costly sewing-machine which will compensate him in the long run and add to the increase the national dividend. The increase of the national dividend owing to the growth of capital and invention is certain to affect all the classes of commodities and increase the real wages of the workers.

Capital in general and labour in general co-operate in the production of the national dividend, and draw from it their earning in the neasure of their respective marginal efficiencies. One without the other cannot long live. Again competition tends to make weekly wages in similar employments not equal but proportionate to the efficiency of the workers. Here Marshall disproves Leslie's principle that there is very little mobility among the working classes and that the competition among them is ineffective, for it is found that local variations of weekly wages and of efficiency generally correspond.

Economic freedom and enterprise cause everyone's earnings to find their own level; and therefore there is a tendency to equality of efficiency earnings in the same district. This tendency will be the stronger the greater is the mobility of labour, and the less specialized it is, for it is not a matter of indifference to the employer especially when costly machinery is used, to employ a skilled or an unskilled worker, one dear the other cheap. For he can find for himself shortly that the cheap labourer is a dear one and vice versa.

With regard to kinds of wages, they may be classed as time wages, i. e. working by hours, days, week, months or years; or piece work wages, these again may be real wages or nominal wages. Real wages of labour consists of the quantity of the necessaries and conveniences of life that are given for it, i. e. the money quantity and the advantages which are attached to the occupation. Nominal wages on the other hand, exclude all such advantages or disadvantages, so that real wages may be greater or snaller than nominal wages according to circumstances. Allowance must also be made for variations in the purchasing power of money, with special reference to the consumption of the grade of labour concerned, and to the trade expenses. When wages are partly paid in kind, the allowance must be taken at their value to those, who receive them, not at their cost to those who give them, e. g. expensive food for the servants does not be worth so much to them as to the master. There are also uncertainties of success in

labour and the inconstancy of employment which have to be taken into consideration in estimating the real wages.

With regard to difficulties of ascertaining the real as opposed to nominal price of labour, there are many peculiarities in the action of demand and supply that are cumulative. High earnings and strong character led to greater strength and higher earnings and so on. On the other hand, if the progress is checked in one generation, the next generation starts from a lower level than it otherwise would have done; and the retardation is accumulated and may be passed from generation to generation. The first peculiarity is that the worker sells his work but retains property in himself. Thus the low paid uneducated labourers are apt to perpetuate by lack of means to educate their children or by unwillingness to sacrifice themselves for the sake of their children. This evil is cumulative. This evil is comparatively small in the higher ranks of society. The son of the artisan has a better start in life than the son of the unskilled labourer. He is brought up in a more refined home and with more of a mother's tender care, while the child of an unskilled labourer and of a poor mother who attends to rough work, runs about filthy, uncontrolled, uneducated, until it is able to work at a rough job like his parents, and moreover perpetuates with him the effects of his surroundings. (1)

An employer may help cumulatively to alleviate the position of a workman. He can progressively adjust the workman to various branches of his undertaking thus developing his ability to skilled occupation.

Second peculiarity is that the seller of the labour must deliver it himself. It matters a great deal to the labourer whether his task to be pefformed is a wholesome and pleasant one. Since the more disagreeable the incidents of an occupation, the higher are the wages to attract people into it. (2)

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(1) There is some exaggeration in Professor Marshall's statement with regard to the situation of low grade labourers. The workman is not so helpless after all!

(2) But Marshall in another place (p. 558) draws a paradosical result "that the dirtiness of some occupations is a cause of the lowness of the wages earned in them."

Again the inseparability of the worker from his work hinders the adjustment of the supply of labour to the demand for it.

Third: Labourers are commonly poor and have no reserve fund and cannot easily withhold it from the market, i. e. their labour is perishable. And fourth - the sellers of labour are often at a disadvantage in bargaining. Perishableness and disadvantages in bargaining are common to the labour of all grades. But they are greatest among the lower grades; but hardly among the domestic servants and the professional men.

The disadvantage is cumulative for anything that lowers wages tends to lower the efficiency of the labourer's work, and lowers the normal value of his labour, and also diminishes his efficiency as bargainer and makes him sell his labour for less than it s normal value.

The fifth peculiarity of labour consists in the length of time that is required to prepare and train labour for its work and especially to work which requires extraordinary dexterity and skill. The great expenses involved in education and the interest on capital expended are to be considered as regards the remuneration for specialized skill, which would recompense the worker in reasonable time. This time must not be long, considering the uncertainty of human life. Besides the forecasts of the future are very liable to error. There may be unforeseen changes in trades which would require other skill than that which a worker acquired for the purpose of that trade. Hence may come the movements from trade to trade and from one grade to another grade, or from place to place; and this may reduce within a very short compass the period which is required to enable the supply of labour to adjust itself to the demand. The term long period when we are considering the relation of normal demand and supply for labour implies a greater duration than when we are considering them for ordinary commodities. It takes longer to adjust the supply of labour to the demand than it takes to adjust the supply of a commodity.

The average earnings of labour during such period would not be certain to give about a normal return to the seller of the labour, but would rather have to be regarded as determined by the available stock of and the demand for it. Fluctuation in earnings depends on demand. When the trade is good the employers desire to extend their business, consent to pay higher wages to their employees in order to obtain their services to increase the supply of the produce which has a great demand price. The gains are thus distributed among the employers and the employees, and then their earnings remain above the normal level as long as the prosperity lasts. Thus fluctuations in wages follow and do not precede fluctuations in prices of goods.

There is a constant tendency towards a position of normal equilibrium of demand and supply as to give a sufficient reward for those who demand labour and those who supply it.

In estimating the return for the labourer's skill, account must be taken not only of his wear and tear, but also of his fatigue and other inconveniences of his work. But the extra income earned by rare natural abilities may be regarded as a surplus when analyzing the incomes of individuals.

Treating on interest of capital Marshall states that the vasis of the theory of capital and interest is the fact that great masses of humanity have a preference for present over deferred gratifications, i. e. they are unwilling to "wait". Hence to lend the money is to deprive oneself of certain gratification for the time the capital is in a borrower's use. The remuneration for this waiting constitutes the interest.

Many openings have been made for the use of capital by the new progress of discovery andopening up of new countries, so that the supply of accumulated wealth becomes small relatively t the demand for its use, so that, that use is on the balance a source of gain and can therefore require a payment when loaned. There are however many difficulties as to what constitutes properly called interest; therefore the analysis is required.

The interest spoken as reward of waiting or earnings of capital simply is net interest. But interest which includes other

elementw besides this as for instance insurance against risk, earnings of management, trade risks and personal risks may be called gross interest. Such interests may be regarded as profits.

The gross interest on account of variations of risks and the task of management does not tend to equality. The net interest on capital on the other hand does tend to equality except incidentally with regard to transation between individuals.

The owners of capital distinguish two kinds of investments: the old investment, the value of which is governed by its earnings and the new investment which is added to the old investment in the form of new material to be consumed, as fuel, etc. or by replacement of the appliances of production. The rate of interest applies strictly to the new investment, but only in a limited sense to the old investment which has a discounted value of its esimated future incomesor quasi-rents. It is also to be noted that the changes in the purchasing power of money exert great influence on the rate of interest. A rise in the value of money makes the true rate of interest higher than the nominal rate.

With regard to the profit on the invested capital, the earning of management has to be taken accouht of, for the whole success of a business depends on the management which depends on immediate rather than ultimate efficiency.

A chief function of business enterprise is to facilitate the free action of the principle of substitution. Here, too, a business man compares the services of one machine with the other, of skilled and unskilled labour, the services of the marginal workman and the marginal foreman and selects those most profitable for himself.

This principle of substitution is constantly in operation in every struggle between large business and small; the large employer substituting a little of his own work and a good deal of that of salaried managers and foremen for that of a small employer.

The gross earning of management can only be found after making up a careful account of the true profits of business and

deducting interest on the capital.

Modern methods of business exercise in the aggregate a powerful tendency to adjust earnings of management to the difficulty of the work done; and this on account of the ability of management which is not always possessed by those who supply the capital, but often by those who lack the capital. Thus in the joint stock companies or other large businesses most of the work of management is divided between salaried directors and salaried managers. On the other hand in small business much of the wages of labour is classed as profits. Thus there is a distinction to be made between the profits in large and the profits in small businesses in the same trade. A large business possessing a large capital can always buy at a cheaper rate and can avail itself of many economies in the specialization of skill and machinery, and can sell more and at a smaller rate of profit. A small business on the other hand has greater facilities for getting near its customers and consulting their individual wants, it can sell less but at a higher rate of profit so that on the whole the inequalities are not great.

Again, the rate of profit is low in nearly all those trades which require very little ability to manage the business on a large scale, while the rate of profit must be higher in those trades where great risks are involved and specialized ability is required to manage the business.

If the capital in circulation is relatively great to the wages bill the rate of profits is generally low; but rate of profit is high if the circulating capital is relatively small to the wages bill. The rate of profit will also be high in trades which handle costly materials and in which the changes of fashion affect the prices and therefore speculative element necessary. In trades in which speculative element is not important profits often vary with the wages bill. As a rule the normal rate of profits in an industry may be lowered by a great gradual increase in production. Here the advantage may be taken from the specialization of both labor and the plant; for thus the in-

creasing return may be obtained. But if there be a general increase of production the prices of the products to a level which yields but a normal rate of profit. The rate of profits on the turn over varies much more widely than the annual rate of profits on capital. Some goods may be bought and sold at a low rate of profit many times a year, thus yielding a large profit on the capital circulating, while other costly goods may be bought nad kept in stock for a very long time and in the end sold perhaps at a loss on account of change in fashion.

There are some differences in fluctuation of profits and wages. The causes which govern the normal levels of wages and the various elements of profits however resemble one another more nearly than those which govern fluctuations in their values. Thus the sum invested in education and the sum invested in a plant may bring a large profit. But there are some disturbing causes which may as well affect the failure. These disturbing causes exert a predominating influence with regard to the incomes earned by particular individuals at particular times.

The first different is that, the fluctuation of profits always precedes the fluctuation in wages, and that the profits fluctuate with prices and even in greater ration while the wages fluctuate in a smaller ration. On the other hand when the trade is bad the employee is out of work but the employer's outgoings often exceed his incomings, so that his earnings of management is a negative quantity. The second difference is that the profits of individuals differ more widely than the ordinary earnings, for those whom we consider as successful in business are but a small percentage of the whole most of whom failed. So that the average profits of business men are overestimated. The third difference is that the earnings of effort are nearly always a considerable part of the income of artisan or professional men, the rest being a quasi-rent on the invested capital in his education, while the profit of a business man is liable to such a violent fluctuation from a positive to a negative quantity that he hardly considers his own efforts. The fourth difference is that a

large share of the income of successful businessmen is a surplus due to rare natural faculties. Again the fluctuation of profits and wages are affected by changes in industrial environment and opportunity or conjuncture, but they affect in far greater measure the profits than they do the wages.

On the whole the income derived from the specialized capital and the specializied skill depend very much on the general prosperity of the trade. The share of each clsss tends to rise when the aggregate or composite incomes increase. But when an aggregate income is stationary and one class gets a better share then before it must be at the expense of the others. The earnings of a business man are the aggregate earnings of his own ability, his plant, his opportunities and the business organization or the good will of those who work for him. Therefore a business organization with some element of profit sharing is on a good way way to progress. The relation of various agents of production stand close to one another. On the one hand they are often rivals for employment, on the other hand they constitute the field of employment for each other. Thus, the machinery may compete with manual labour, but it also affords work to many people. Again the various needs of people cause to induce many new agents of production to activities. The national dividend which is the joint product of all and which increases with the supply of each of them is also the sole source of demand for each of them. The increase of capital causes it to put its way into new uses and enriches the field for the employment of a new labour which increases the joint product of land and increaseing the shares of each individual. If any group of workers becomes more efficient its wages rise and the wages of those who are inefficient rise also, but if the number of efficient workers is very great their wages fall comparatively to their efficiency while wages of less numerous inefficient workers rise in comparison to the unskilled work. And so Marshall infers that this dependence of the wages of each group of workers on the number and efficiency of others is a special case of the general rule that the

environment plays a part at least co-ordinate with a man's energy and ability in governing that net product of the worker of normal efficiency to which his wages ever approximate under the influence of competition. This net product must be estimated on the assumption that production has been pushed to that limit at which the output can be just marketed with normal profits, at the time of normal prosperity of the trade in question.

The field of employment of capital and labour depends on natural resources, on the power of turning those resources into good account and on the access to the markets. The new countries which have no good access to markets, though they have have rich resources they will offer but small field for employment of capital and labour. But the chief cause of modern prosperity of the new countries lies in the markets that the old countries offer for mortgages at very high rate of the future income of new countries. Consequently a vast stream of capital for developing the resources flows to the new country and the wages rise very high. As the population increases and nature responds less to the demand for its resources, the wages fall, and this is especially true when immigration is rapidly increasing and the influx of capital lingers.

Marshall returning to the economic condition of England attributes to its production on a large scale and wholesale dealing in labour the present great industrial development; and he states that the keynotes of the modern movement are the reduction of a great number of tasks to one pattern; the diminution of friction of every kind which might hinder powerful agencies from combining their action and spreading their influence over a vast area; and the development of transports by new methods and new forces. But the improvement of manufacture in other countries hampered the gains of the manufacturers in England by whom these countries were supplied with goods. The cheapening of transportation of various kinds and the cheap manufacturing for home consumption are now the highest gains of England.

The age on account of the facilities of communication with the new countries also brought great changes in the relative value of labour, and the chief requisites of life. A day's labour can purchase now more wheat, more clothing, more meat, and can even afford luxuries besides other necessaries of subsistence; The progress made great influence on the value of many agents of production. The value of English agricultural land is lowered, machinery is multiplied and is applied cheaply to different kinds of uses, and in all kinds of undertakings. Capital has also been increased with the general progress and interest fell to a very low rate. Education took a parallel step and promoted the welfare of the community as a whole. There are now many professional men, many artisans, and skilled labourers; and although with the increase of ability the wages proportionally fall, still the national dividend increases and gives a fair share to each individual. There is a general rise in the standard of life, which raises the comfort, the intelligence, the efficiency and the happiness of all.