CHAPTER IX

THE THEORY OF INTEREST

As space is a relation of extension, so time is a relation of succession. Every individual act follows upon or precedes some other act. If the sequence of one act upon another is immediate we speak of their succeeding each other in a short time; if the sequence is remote we speak of long time. All production consists of a series of acts following upon each other, and all production therefore requires more or less time. The production of bread, for instance, requires the successive accomplishments at different intervals of sowing, reaping, grinding, and baking. Similarly the production of a chair requires the felling of a tree, cutting it into boards, planing them, cutting them into the requisite pieces, turning some of these, fitting all the pieces together, and finishing the rough chair. No two of these acts can be performed simultaneously, they all stand in the relation of sequence to each other, and the series therefore requires considerable time in its accomplishment. In like manner every other productive process requires more or less time. It follows that only those productive processes which require little time for their accomplishment can be directed to the satisfaction of present wants, *i.e.* of wants existing at their initiation. By far the greatest number of productive processes, all those requiring more than a short time for their accomplishment, are necessarily directed to the satisfaction of wants which are expected to arise in the future, *i.e.* after the process is completed. Present wants, therefore, are mostly dependent for their satisfaction upon productive

processes which were initiated in the more or less remote past, and the fruits of which are now maturing or have matured, while present labour is mostly directed to the satisfaction of future wants through the production of goods which will become available at such future date. Every increase in the length of productive processes postpones the time when their fruits will be available for the satisfaction of human wants, while, as has been already shown, it increases the number of wants which can be satisfied.

All but the most primitive processes of production, therefore, imply the capacity of men to anticipate future wants and their desire to provide for them. The world-wide, roundabout, or co-operative system of production implies the possession of a high degree of these faculties. These faculties are part of the imaginative process. In order that men may be able to provide for future wants, they must be able to form a mental picture of the state of their future desires, of the quantity and kind of the goods necessary to satisfy these desires, and of the time when these desires will arise and these goods will become available, *i.e.* they must form some present conception of the value of goods which will only become available at a given future date. The only principle on which such goods can be valued is that of their marginal utility under the mutual action of our wants and the provision for these wants as we anticipate them to be at some future date. Apart from the element of risk, our present valuation of future goods is, therefore, made on the same principle as that of present goods, *i.e.* goods available at the present time. As these two sets of goods, however, become available at different times, under different circumstances, and serve different sets of wants, it is inevitable that a different valuation should be placed upon them at the present time. With few and unimportant exceptions this difference shows itself in a higher present value being placed on goods which are available at present than on goods of like quantity and kind which only become available at some future time. This difference in value is the cause of interest, which therefore arises from the extension of man's labour in time.

The following are the main reasons for the higher value of present than of future like goods :—

All persons who expect or hope that they will be better off in the future than in the present, that is the vast majority of men, will naturally value a given quantity of present goods more highly than an equal quantity of like goods in the future. For while their present wants are pressing upon their means to satisfy them they expect a less pressure in the future. The case of musical students who mortgage a great part of their future earnings in order to obtain present tuition is an extreme case in point.

On the other hand, persons who enjoy a good income in the present, but who anticipate that it may fall off or altogether cease in the future, such as employees with fixed salaries which may cease, will value goods becoming available at this future period more highly than goods available at present. This feeling, however, exerts no influence, because present goods can be preserved for use at such future period, especially in the shape of money, and can thus be used either for the satisfaction of present or of such future wants ; whereas goods which do not become available till such future time cannot be used for the satisfaction of present wants. Hence, even in these cases, present goods are valued more highly or, at least, as highly as future goods of like quantity and kind.

This difference in provision for wants between present and future is sufficient to give a higher subjective, and therefore a higher objective, value to present than to future goods. This tendency is, however, increased by other causes.

The first of these is a tendency towards the undervaluation of future wants inherent in all men. That which lies nearest looms largest. Future wants are underestimated because they are distant and in the measure of their distance, and, therefore, the goods which can satisfy none but such future wants are undervalued. This underestimation of future wants differs in different men. Savages and children scarcely take any thought of distant

wants, and among adult civilised men wide differences also appear. Nearly all men, however, give way to it to some extent.

This second cause is cumulative with the first. Not only the persons who expect to be better off in the future than they are in the present, but all, or nearly all, other men make this underestimate of their future wants, and hence the lower valuations placed on future than on present goods is made more intensive and more extensive.

A third and independent cause for the same phenomenon arises from the technical superiority of present over future goods, *i.e.* from the fact that, as a rule, goods which are available now give, when used as instruments for the production of other goods, a greater return than goods which become available in the future for such use.

As already explained, lengthier methods of production are, on the whole, more productive than shorter methods. Given the same quantity of productive instruments and labour, the lengthier the method of production in which they are employed the greater will be the quantity or the better the quality of the resulting product.

Suppose now that we have available in the year 1898 a quantity of productive instruments equivalent to one month's labour. We can employ this one month's labour in methods of production which will give an immediate return, or in such as will give a more or less remote future return through the application of more labour, — with this difference, however, that as we chose a lengthier method, so the future product of this month's labour, as well as that of every other month's labour successively employed in this particular process, will be increased. Let it be supposed that its product in immediate production will be 100 units of wealth; in a one year's process 200 units; in a two years' process 280; in a three years' process 350; in a four years' process 400; in a five years' process 440; in a six years' process 470; and in a seven years' process 490. Any other figures will do as well, as long as the principle is observed that longer processes give greater return, but that the return increases at a less ratio than the length of process.

The following table will show when these units of wealth, the product of one month's labour, will become available :—

Length of Process.	Units of Product.	Time of Availability.
Immediate . . .	100	1898
One year	200	1899
Two years . . .	280	1900
Three years . . .	350	1901
Four years . . .	400	1902
Five years . . .	440	1903
Six years	470	1904
Seven years . . .	490	1905

Suppose now, that in addition to the production-goods equivalent to one month's labour, which are available to-day, we expect an equal quantity of such goods to become available in each of the years 1899, 1900, and 1901, let us see what will be the relative result at any future time of these four separate months of labour when employed in production :—

ONE MONTH'S LABOUR OF THE YEAR

Yield in units of product for the year :	1898.	1899.	1900.	1901.
1898	100	...	...	...
1899	200	100	...	...
1900	280	200	100	...
1901	350	280	200	100
1902	400	350	280	200
1903	440	400	350	280
1904	470	440	400	350
1905	490	470	440	400

The above table clearly shows that present production-goods yield at any given time a greater return than goods of like quantity and kind which become available at a later period.

It is also obvious that the possibility of engaging in lengthier and, therefore, more profitable processes of production arises from the present possession of consumption-goods. If these were not available in sufficient quantities, labour and capital would be compelled to engage in shorter processes, giving forth their products at earlier periods, though in smaller quantities compared with the exertion employed. The increased result of the lengthier processes, therefore, is in this measure due to the possession of consumption-goods available in the present, not because they are capital, but because they enable capital to be used in processes of greater utility. Therefore, present consumption-goods possess the same technical superiority over future consumption-goods which present production-goods possess over future production-goods.

The three causes enumerated for the higher value of goods available in the present than of goods which will become available at any future time, are :—

(1) The difference in the circumstances of provision for wants between present and future.

(2) The underestimate of future wants and of the importance of future goods.

(3) The greater productiveness of lengthier methods of production and consequent technical superiority of present goods.

While the two first causes are cumulative, the third cause acts independently and largely alternatively. To show this in detail here would lead too far ; suffice it to say, that this alternative action gives to the phenomenon of higher valuation of present goods a varying intensity but universal validity. The varying intensity of subjective valuations enables exchanges of present against future goods to take place. Those who place a relatively high value on future goods are buyers of future goods, *i.e.* lenders ; those who place a relatively low value on future goods are sellers of such goods, *i.e.* borrowers. A market price, resulting from their higgling, once established, exerts a reflex action on all subjective valuations, so that even those few who, from their economic circumstances, would value future goods equally with present goods are influ-

enced by the general position of the market, which assures them also a preference for present goods. The same levelling tendencies of the market bring the lower value of future goods into a regular proportion with their remoteness in time, establishing everywhere a rate of interest which is the general measure for the difference between the value of present goods and that of goods which become available at any future time.

Of the three causes, the combined action of which gives rise to interest, one only, the technical superiority of present goods, is invariable in its action. Of the others, the underestimation of future wants declines in intensity and extensity as men become better adapted to the conditions of social life. The third cause, difference in the provision for wants between present and future, also will be less active when a just system of distributing wealth is adopted. For, in such case, the present needs of all will be more easily met, while a great majority will be able and desirous to retire from productive labour at a comparatively early age. Present needs will, therefore, be less pressing and future needs more pressing, leading to a reduction, from both sides, of the difference of valuation of present and future goods.

The causes which have resulted in a decline of the rate of interest in the past, will therefore continue and may be reinforced in the future, leading to a further, permanent, and large decline of the rate of interest. That interest ever will or can disappear entirely, however, does not seem probable, in view of the persistence of the technical superiority of present goods, and of the improbability of the entire disappearance of the two other causes which gave it existence.

In a former chapter[1] it has been shown that the value of productive instruments is determined by the marginal utility (value) of the sum of the consumption-goods which form their ultimate product. This ultimate product, however, is not contemporaneous with the productive instruments; it appears as these disappear in it. Compared with the productive instruments which give it being,

[1] Part II. chap. ii.

the final product is a group of future commodities; of goods which will become available in the future. The present value of this final product, *i.e.* its value measured in present goods, is therefore lower than its future value, and therefore the value of the productive instruments is also lower than the future value of the consumption-goods into which they become embodied. It is equal to the present, and not to the future, value of these future goods.

The capitalist, therefore, buys productive instruments at the present value of the sum of their ultimate products, and waiting till these latter have arrived at maturity, till what is now the future has in its turn become the present, becomes possessed of their higher value. This increment in value is the interest which he receives.

To illustrate this sequence of events, take the case of a capitalist who purchases productive instruments, material, tools, and labour; and in order to simplify the illustration, let us assume that he purchases them all at one and the same time, *i.e.* at the beginning of the productive process. The circumstance that this is not quite true does not affect the principle but only the amount of interest which he will receive. Let it be further assumed, that the sum of the final products of these productive instruments has a total value, when they are available, of 500 units; and, further, that of these total ultimate products, equal parts become available at the end of each of five successive years, and possess at that time a value of 100 units, so that at the end of five years the whole product has been realised and the productive instruments have disappeared.

All these products are future goods at the time the capitalist purchases his productive instruments. Their present value, therefore, *i.e.* their value measured in present consumption-goods, is less than that which they will possess when they in their turn will be available for the satisfaction of human wants, when they will have become present consumption-goods. That part of the total product which will become available at the end of one year, and which then will have a value of 100 units, possesses now a value of say 95 units only; the second part available at the end of two years has a present value

of 90 units; the third year's product equals 85 units; the fourth year's product equals 80 units; and the fifth year's product equals 75 units. The total present value of these consumption-goods, the future product of the group of productive instruments in question, and having a value of 500 units when they become available, is 425 units only. Therefore, the value of these productive instruments is 425 units, equal to the present value of their ultimate product. Our capitalist purchases them at this price, and the interest which he receives arises from the fact that he has purchased with a smaller quantity of mature goods, possessing a present high value, a larger quantity of immature goods, possessing a present low value, and that he waits until this latter in its turn has ripened into high value.

This interest, therefore, is not taken from any one. It arises, as has here been proved, when the capitalist pays full value for all the productive instruments, labour included, *i.e.* when he pays a price for them equal to the value of the sum of their products. It had no existence before; it came into existence in the hands of the capitalist, because he is a capitalist, *i.e.* because he, possessing more goods at present available for the satisfaction of human desires than he himself needs, exchanges them for goods which, in their turn, will be able to satisfy human wants at some future time. As, in the continuous process of production, those future goods gradually approach usefulness, and the more pressing, because more proximate, human wants, their value increases, until at last this utility and value reach their highest point, that of goods which can satisfy the most urgent wants, *i.e.* wants actually existing. Interest, therefore, is not, as Socialism posits, a robbery of labour, but an increment of value which arises from the natural extension of human labour in time and separately from the exertion of labour.

That interest cannot be regarded as part of the product of labour, and that, therefore, it is not a deduction from the legitimate wages of labour, *i.e.* the full product of the labourer's exertions, will, however, be demonstrated still more fully in the next chapter.