

HUMAN ACTION

by Ludwig von Mises, 4th edition (1996)

PART FOUR

CATALLACTICS OR ECONOMICS OF THE MARKET SOCIETY

XIX. INTEREST

1. The Phenomenon of Interest

It has been shown that time preference is a category inherent in every human action. Time preference manifests itself in the phenomenon of ordinary interest, i.e., the discount of future goods as against present goods.

Interest is not merely interest on capital. Interest is not the specific income derived from the utilization of capital goods. The correspondence between three factors of production--labor, capital, and land--and three classes of income--wages, profit, and rent--as taught by the classical economists is untenable. Rent is not the specific revenue from land. Rent is a general catallactic phenomenon; it plays in the yield of labor and capital goods the same role it plays in the yield of land. Furthermore there is no homogeneous source of income that could be called profit in the sense in which the classical economists applied this term. Profit (in the sense of entrepreneurial profit) and interest are no more characteristic of capital than they are of land.

The prices of consumers' goods are by the interplay of the forces operation on the market apportioned to the various complementary factors cooperating in their production. As the consumers' goods are present goods, while the factors of production are means for the production of future goods, and as present goods are valued higher than future goods of the same kind and quantity, the sum thus apportioned, even in the imaginary construction of the evenly rotating economy, falls behind the present price of the consumers' goods concerned. This difference is the ordinary interest. It is not specifically connected with any of the three classes of factors of production which the classical economists distinguished. Entrepreneurial profit and loss are produced by changes in the data and the resulting price changes which occur in the passing of the period of production.

Naive reasoning does not see any problem in the current revenue derived from hunting, fishing, cattle breeding, forestry, and agriculture. Nature generates deer, fish, and cattle and makes them grow, causes the cows to give milk and the chickens to lay eggs, the trees to put on wood and to bear fruit, and the seeds to shoot into ears. He who has a title to appropriate for himself this recurring wealth enjoys a steady income. Like a stream which continually carries new water, the "stream of income" flows continually and conveys again and again new wealth. The whole process appears as a natural phenomenon. But for the economist a problem is presented in the determination of prices for land, cattle, and all the rest. If future goods were not bought and sold at a discount as against present goods, the buyer of land would have

to pay a price which equals the sum of all future net revenues and which would leave nothing for a current reiterated income.

The yearly recurring proceeds of the owners of land and cattle are not marked by any characteristic which would catallactically distinguish them from the proceeds stemming from produced factors of production which are used up sooner or later in the processes of production. The power of disposal over a piece of land is the control of this field's cooperation in the production of all the fruit which can ever be grown on it, and the power of disposal over a mine is the control of its cooperation in the extraction of all the minerals which can ever be brought to the surface from it. In the same way the ownership of a machine or a bale of cotton is the control of its cooperation in the manufacture of all goods which are produced with its cooperation. The fundamental fallacy implied in all the productivity and use approaches to the problem of interest was that they traced back the phenomenon of interest to these productive services rendered by the factors of production. However, the serviceableness of the factors of production determines the prices paid for them, not interest. These prices exhaust the whole difference between the productivity of a process aided by a definite factor's cooperation and that of a process lacking this cooperation. The difference between the sum of the prices of the complementary factors of production and the products which emerges even in the absence of changes in the market data concerned, is an outcome of the higher valuation of present goods as compared with future goods. As production goes on, the factors of production are transformed or ripen into present goods of a higher value. This increment is the source of specific proceeds flowing into the hands of the owners of the factors of production, of originary interest.

The owners of the material factors of production--as distinct from the pure entrepreneurs of the imaginary construction of an integration of catallactic functions--harvest two catallactically different items: the prices paid for the productive cooperation of the factors they control on the one hand and interest on the other hand. These two things must not be confused. It is not permissible to refer, in the explanation of interest, to the services rendered by the factors of production in the turning out of products.

Interest is a homogeneous phenomenon. There are no different sources of interest. Interest on durable goods and interest on consumption-credit are like other kinds of interest an outgrowth of the higher valuation of present goods as against future goods.

2. Originary Interest

Originary interest is the ratio of the value assigned to want-satisfaction in the immediate future and the value assigned to want-satisfaction in remote periods of the future. It manifests itself in the market economy in the discount of future goods as against present goods. It is a ratio of commodity prices, not a price in itself. There prevails a tendency toward the equalization of this ratio for all commodities. In the imaginary construction of the evenly rotating economy the rate of originary interest is the same for all commodities.

Originary interest is not "the price paid for the services of capital."¹ The higher productivity of more time-consuming roundabout methods of production which is referred to by Bohm-Bawerk and by some later economists in the explanation of interest, does not explain the phenomenon. It is, on the contrary, the phenomenon of originary interest that explains why less time-consuming methods of production are resorted to in spite of the fact that more time-consuming methods would render a higher output per unit of input. Moreover, the phenomenon of originary interest explains why pieces of usable land can be sold and bought at finite prices. If the future services which a piece of land can render were to be valued in the same way in which its present services are valued, no finite price would be high enough to impel its owner to sell it. Land could neither be bought nor sold against definite amounts of money, nor bartered against goods which can render only a finite number of services. Pieces of land would be bartered only against other pieces of land. A superstructure that can yield during a period of ten years an annual revenue of one hundred dollars would be priced (apart from the soil on which it is built) at the beginning of the second year at none hundred dollars, and so on.

Originary interest is not a price determined on the market by the interplay of the demand for and the supply of capital or capital goods. Its height does not depend on the extent of this demand and supply. It is rather the rate of originary interest that determines both the demand for and the supply of capital and capital goods. It determines how much of the available supply of goods is to be devoted to consumption in the immediate future and how much to provision for remoter periods of the future.

People do not save and accumulate capital because there is interest. Interest is neither the impetus to saving nor the reward or the compensation granted for abstaining from immediate consumption. It is the ratio in the mutual valuation of present goods as against future goods.

The loan market does not determine the rate of interest. It adjusts the rate of interest on loans to the rate of originary interest as manifested in the discount of future goods.

Originary interest is a category of human action. It is operative in any valuation of external things and can never disappear. If one day the state of affairs were to return which was actual at the close of the first millennium of the Christian era when some people believed that the ultimate end of all earthly things was impending, men would stop providing for future secular wants. The factors of production would in their eyes become useless and worthless. The discount of future goods as against present goods would not vanish. It would, on the contrary, increase beyond all measure. On the other hand, the fading away of originary interest would mean that people do not care at all for want-satisfaction in nearer periods of the future. It would mean that they prefer to an apple available today, tomorrow, in one year or in ten years, two apples available in a thousand or ten thousand years.

We cannot even think of a world in which originary interest would not exist as an inexorable element in every kind of action. Whether there is or is not division of labor

¹ This is the popular definition of interest as, for instance, given by Ely, Adams, Lorenz, and Young, *Outlines of Economics* (3d ed. New York, 1920), p. 493.

and social cooperation and whether there is or is not division of labor and social cooperation and whether society is organized on the basis of private or of public control of the means of production, originary interest is always present. In a socialist commonwealth its role would not differ from that in the market economy.

Bohm-Bawerk has once for all unmasked the fallacies of the naive productivity explanations of interest, i.e., of the idea that interest is the expression of the physical productivity of factors of production. However, Bohm-Bawerk has himself based his own theory to some extent on the productivity approach. In referring in his explanation to the technological superiority of more time-consuming, roundabout processes of production, he avoids the crudity of the naive productivity fallacies. But in fact he returns, although in a subtler form, to the productivity approach. Those later economists who, neglecting the time-preference idea, have stressed exclusively the productivity idea contained in Bohm-Bawerk's theory cannot help concluding that originary interest must disappear if men were one day to reach a state of affairs in which no further lengthening of the period of production could bring about a further increase in productivity.² This is, however, utterly wrong. Originary interest cannot disappear as long as there is scarcity and therefore action.

As long as the world is not transformed into a land of Cockaigne, men are faced with scarcity and must act and economize; they are forced to choose between satisfaction in nearer and in remoter periods of the future because neither for the former nor for the latter can full contentment be attained. Then a change in the employment of factors of production which withdraws such factors from their employment for want-satisfaction in the remoter future must necessarily impair the state of satisfaction in the nearer future and improve it in the remoter future. If we were to assume that this is not the case, we should become embroiled in insoluble contradictions. We may at best think of a state of affairs in which technological knowledge and skill have reached a point beyond which no further progress is possible for mortal men. No new processes increasing the output per unit of input can henceforth be invented. But if we suppose that some factors of production are scarce, we must not assume that all processes which--apart from the time they absorb--are the most productive ones are fully utilized, and that no process rendering a smaller output per unit of input is resorted to merely because of the fact that it produces its final result sooner than other, physically more productive processes. Scarcity of factors of production means that we are in a position to draft plans for the improvement of our well-being the realization of which is unfeasible because of the insufficient quantity of the means available. It is precisely the unfeasibility of such desirable improvements that constitutes the element of scarcity. The reasoning of the modern supporters of the productivity approach is misled by the connotations of Bohm-Bawerk's term *roundabout methods of production* and the idea of technological improvement which it suggests. However, if there is scarcity, there must always be an unused technological opportunity to improve the state of well-being by a lengthening of the period of production in some branches of industry, regardless of whether or not the state of technological knowledge has changed. If the means are scarce, if the praxeological correlation of ends and means still exists, there are by logical necessity unsatisfied wants with regard both to nearer

² Cf. Hayek, "The Mythology of Capital," *The Quarterly Journal of Economics*, L (1936), 223 ff. However Professor Hayek has since partly changed his point of view. (Cf. his article "Time-Preference and Productivity, a Reconsideration," *Economica*, XII [1945], 22-25.) But the idea criticized in the text is still widely held by economists.

and to remoter periods of the future. There are always goods the procurement of which we must forego because the way that leads to their production is too long and would prevent us from satisfying more urgent needs. The fact that we do not provide more amply for the future is the outcome of a weighing of satisfaction in nearer periods of the future against satisfaction in remoter periods of the future. The ratio which is the outcome of this valuation is originary interest.

In such a world of perfect technological knowledge a promoter drafts a plan *A* according to which a hotel in picturesque, but not easily accessible, mountain districts and the roads leading to it should be built. In examining the practicability of this plan he discovers that the means available are not sufficient for its execution. Calculating the prospects of the profitability of the investment, he comes to the conclusion that the expected proceeds are not great enough to cover the costs of material and labor to be expended and interest on the capital to be invested. He renounces the execution of project *A* and embarks instead upon the realization of another plan, *B*. According to plan *B* the hotel is to be erected in a more easily accessible location which does not offer all the advantages of the picturesque landscape which plan *A* had selected, but in which it can be built either with lower costs of construction or finished in a shorter time. If no interest on the capital invested were to enter into the calculation, the illusion could arise that the state of the market data--supply of capital goods and the valuations of the public--allows for the execution of plan *A*. However, the realization of plan *A* would withdraw scarce factors of production from employments in which they could satisfy wants considered more urgent by the consumers. It would mean a manifest malinvestment, a squandering of the means available.

A lengthening of the period of production can increase the quantity of output per unit of input or produce goods which cannot be produced at all within a shorter period of production. But it is not true that the imputation of the value of this additional wealth to the capital goods required for the lengthening of the period of production generates interest. If one were to assume this, one would relapse into the crassest errors of the productivity approach, irrefutably exploded by Bohm-Bawerk. The contribution of the complementary factors of production to the result of the process is the reason for their being considered as valuable; it explains the prices paid for them and is fully taken into account in the determination of these prices. No residuum is left that is not accounted for and could explain interest.

It has been asserted that in the imaginary construction of the evenly rotating economy no interest would appear.³ However, it can be shown that this assertion is incompatible with the assumptions on which the construction of the evenly rotating economy is based.

We begin with the distinction between two classes of saving: plain saving and capitalist saving. Plain saving is merely the piling up of consumers' goods for later consumption. Capitalist saving is the accumulation of goods which are designed for an improvement of production processes. The aim of plain saving is later consumption; it is merely postponement of consumption. Sooner or later the goods accumulated will be consumed and nothing will be left. The aim of capitalist saving is

³ Cf. J. Schumpeter, *The Theory of Economic Development*, trans. by R. Opie (Cambridge, 1934), pp. 34-46, 54.

first an improvement in the productivity of effort. It accumulates capital goods which are employed for further production and are not merely reserves for later consumption. The boom derived from capitalist saving is the increase of the quantity of goods produced or the production of goods which could not be produced at all without its aid. In constructing the image of an evenly rotating (static) economy, economists disregard the process of capital accumulation; the capital goods are given and remain, as, according to the underlying assumptions, no changes occur in the data. There is neither accumulation of new capital through saving, nor consumption of capital available through a surplus of consumption over income, i.e., current production minus the funds required for the maintenance of capital. It is now our task to demonstrate that these assumptions are incompatible with the idea that there is no interest.

There is no need to dwell, in this reasoning, upon plain saving. The objective of plain saving is to provide for a future in which the saver could possibly be less amply supplied than in the present. Yet, one of the fundamental assumptions characterizing the imaginary construction of the evenly rotating economy is that the future does not differ at all from the present, that the actors are fully aware of this fact and act accordingly. Hence, in the frame of this construction, no room is left for the phenomenon of plain saving.

It is different with the fruit of capitalist saving, the accumulated stock of capital goods. There is in the evenly rotating economy neither saving and accumulation of additional capital goods nor eating up of already existing capital goods. Both phenomena would amount to a change in the data and would thus disturb the even rotation of such an imaginary system. Now, the magnitude of saving and capital accumulation in the past--i.e., in the period preceding the establishment of the evenly rotating economy--was adjusted to the height of the rate of interest. If--with the establishment of the conditions of the evenly rotating economy--the owners of the capital goods were no longer to receive any interest, the conditions which were operative in the allocation of the available stocks of goods to the satisfaction of wants in the various periods of the future would be upset. The altered state of affairs requires a new allocation. Also in the evenly rotating economy the difference in the valuation of want-satisfaction in various periods of the future cannot disappear. Also in the frame of this imaginary construction, people will assign a higher value to an apple available today as against an apple available in ten or a hundred years. If the capitalist no longer receives interest, the balance between satisfaction in nearer and remoter periods of the future is disarranged. The fact that a capitalist has maintained his capital at just 100,000 dollars was conditioned by the fact that 100,000 present dollars were equal to 105,000 dollars available twelve months later. These 5,000 dollars were in his eyes sufficient to outweigh the advantages to be expected from an instantaneous consumption of a part of this sum. If interest payments are eliminated, capital consumption ensues.

This is the essential deficiency of the static system as Schumpeter depicts it. It is not sufficient to assume that the capital equipment of such a system has been accumulated in the past, that it is now available to the extent of this previous accumulation and is henceforth unalterably maintained at this level. We must also assign in the frame of this imaginary system a role to the operation of forces which bring about such a maintenance. If one eliminates the capitalist's role as receiver of interest, one replaces

it by the capitalist's role as consumer of capital. There is no longer any reason why the owner of capital goods should abstain from employing them for consumption. Under the assumptions implied in the imaginary construction of static conditions (the evenly rotating economy) there is no need to keep them in reserve for rainy days. But even if, inconsistently enough, we were to assume that a part of them is devoted to this purpose and therefore withheld from current consumption, at least that part of capital will be consumed which corresponds to the amount that capitalist saving exceeds plain saving.⁴

If there were no originary interest, capital goods would not be devoted to immediate consumption and capital would not be consumed. On the contrary, under such an unthinkable and unimaginable state of affairs there would be no consumption at all, but only saving, accumulation of capital, and investment. Not the impossible disappearance of originary interest, but the abolition of payment of interest to the owners of capital, would result in capital consumption. The capitalists would consume their capital goods and their capital precisely because there is originary interest and present want-satisfaction is preferred to later satisfaction.

Therefore there cannot be any question of abolishing interest by any institutions, laws, or devices of bank manipulation. He who wants to "abolish" interest will have to induce people to value an apple available in a hundred years no less than a present apple. What can be abolished by laws and decrees is merely the right of the capitalists to receive interest. But such decrees would bring about capital consumption and would very soon throw mankind back into the original state of natural poverty.

3. The Height of Interest Rates

In plain saving and in the capitalist saving of isolated economic actors the difference in the valuation of want-satisfaction in various periods of the future manifests itself in the extent to which people provide in a more ample way for nearer than for remoter periods of the future. Under the conditions of a market economy the rate of originary interest is, provided the assumptions involved in the imaginary construction of the evenly rotating economy are present, equal to the ratio of a definite amount of money available today and the amount available at a later date which is considered as its equivalent.

The rate of originary interest directs the investment activities of the entrepreneurs. It determines the length of waiting time and of the period of production in every branch of industry.

People often raise the question of which rate of interest, a "high" or a "low," stimulates saving and capital accumulation more and which less. The question makes no sense. The lower the discount attached to future goods is, the lower is the rate of originary interest. People do not save more because the rate of originary interest rises, and the rate of originary interest does not drop on account of an increase in the amount of saving. Changes in the originary rates of interest and in the amount of saving are--other things, especially the institutional conditions, being equal--two

⁴ Cf. Robbins, "On a Certain Ambiguity in the Conception of Stationary Equilibrium," *The Economic Journal*, XL (1930), 211 ff.

aspects of the same phenomenon. The disappearance of originary interest would be tantamount to the disappearance of consumption. The increase of originary interest beyond all measure would be tantamount to the disappearance of saving and any provision for the future.

The quantity of the available supply of capital goods influences neither the rate of originary interest nor the amount of further saving. Even the most plentiful supply of capital need not necessarily bring about either a lowering of the rate of originary interest or a drop in the propensity to save. The increase in capital accumulation and the per capita quota of capital invested which is a characteristic mark of economically advanced nations does not necessarily either lower the rate of originary interest or weaken the propensity of individuals to make additional savings. People are, in dealing with these problems, for the most part misled by comparing merely the market rates of interest as they are determined on the loan market. However, these gross rates are not merely expressive of the height of originary interest. They contain, as will be shown later, other elements besides, the effect of which accounts for the fact that the gross rates are as a rule higher in poorer countries than in richer ones.

It is generally asserted that, other things being equal, the better individuals are supplied for the immediate future, the better they provide for wants for the remoter future. Consequently, it is said, the amount of total saving and capital accumulation within an economic system depends on the arrangement of the population into groups of different income levels. In a society with approximate income equality there is, it is said, less saving than in a society in which there is more inequality. There is a grain of truth in such observations. However, they are statements about psychological facts and as such lack the universal validity and necessity inherent in praxeological statements. Moreover, the other things the equality of which they presuppose comprehend the various individuals' valuations, their subjective value judgment in weighing the pros and cons of immediate consumption and of postponement of consumption. There are certainly many individuals whose behavior they describe correctly, but there also are other individuals who act in a different way. The French peasants, although for the most part people of moderate wealth and income, were in the nineteenth century widely known for their parsimonious habits, while wealthy members of the aristocracy and heirs of huge fortunes amassed in commerce and industry were no less renowned for their profligacy.

It is therefore impossible to formulate any praxeological theorem concerning the relation of the amount of capital available in the whole nation or to individual people on the one hand and the amount of saving or capital consumption and the height of the originary rate of interest on the other hand. The allocation of scarce resources to want-satisfaction in various periods of the future is determined by value judgments and indirectly by all those factors which constitute the individuality of the acting man.

4. Originary Interest in the Changing Economy

So far we have dealt with the problem of originary interest under certain assumptions: that the turnover of goods is effected by the employment of neutral money; that saving, capital accumulation, and the determination of interest rates are not hampered by institutional obstacles; and that the whole economic process goes on in the frame of an evenly rotating economy. We shall drop the first two of these assumptions in the

following chapter. Now we want to deal with originary interest in a changing economy.

He who wants to provide for the satisfaction of future needs must correctly anticipate these needs. If he fails in this understanding of the future, his provision will prove less satisfactory or totally futile. There is no such thing as an abstract saving that could provide for all classes of want-satisfaction and would be neutral with regard to changes occurring in conditions and valuations. Originary interest can therefore in the changing economy never appear in a pure unalloyed form. It is only in the imaginary construction of the evenly rotating economy that the mere passing of time matures originary interest; in the passage of time and with the progress of the process of production more and more value accrues, as it were, to the complementary factors of production; with the termination of the process of production the lapse of time has generated in the price of the product the full quota of originary interest. In the changing economy during the period of production there also arise synchronously other changes in valuations. Some goods are valued higher than previously, some lower. These alterations are the source from which entrepreneurial profits and losses stem. Only those entrepreneurs who in their planning have correctly anticipated the future state of the market are in a position to reap, in selling the products, an excess over the costs of production (inclusive of net originary interest) expended. An entrepreneur who has failed in his speculative understanding of the future can sell his products, if at all, only at prices which do not cover completely his expenditures plus originary interest on the capital invested.

Like entrepreneurial profit and loss, interest is not a price, but a magnitude which is to be disengaged by a particular mode of computation from the price of the products of successful business operations. The gross difference between the price at which a commodity is sold and the costs expended in its production (exclusive of interest on the capital invested) was called profit in the terminology of British classical economics.⁵ Modern economics conceives this magnitude as a complex of catallactically disparate items. The excess of gross receipts over expenditures which the classical economists called profit includes the price for the entrepreneur's own labor employed in the process of production, interest on the capital invested, and finally entrepreneurial profit proper. If such an excess has not been reaped at all in the sale of the products, the entrepreneur not only fails to get profit proper, he receives neither an equivalent for the market value of the labor he has contributed nor interest on the capital invested.

The breaking down of gross profit (in the classical sense of the term) into managerial wages, interest, and entrepreneurial profit is not merely a device of economic theory. It developed, with progressing perfection in business practices of accountancy and calculation, in the field of commercial routine independently of the reasoning of the economists. The judicious and sensible businessman does not attach practical significance to the confused and garbled concept of profit as employed by the classical economists. His notion of costs of production includes the potential market price of his own services contributed, the interest paid on capital borrowed, and the potential interest he could earn, according to the conditions of the market, on his own

⁵ Cf. R. Whatley, *Elements of Logic* (9th ed. London, 1848), pp. 354 ff.; E. Cannan, *A History of the Theories of Production and Distribution in English Political Economy from 1776 to 1848* (3d ed. London, 1924), pp. 189 ff.

capital invested in the enterprise by lending it to other people. Only the excess of proceeds over the costs so calculated is in his eyes entrepreneurial profit.⁶

The precipitation of entrepreneurial wages from the complex of all the other items included in the profit concept of classical economics presents no particular problem. It is more difficult to sunder entrepreneurial profit from ordinary interest. In the changing economy interest stipulated in loan contracts is always a gross magnitude out of which the pure rate of ordinary interest must be computed by a particular process of computation and analytical repartition. It has been shown already that in every act of lending, even apart from the problem of changes in the monetary unit's purchasing power, there is an element of entrepreneurial venture. The granting of credit is necessarily always an entrepreneurial speculation which can possibly result in failure and the loss of a part or of the total amount lent. Every interest stipulated and paid in loans includes not only ordinary interest but also entrepreneurial profit.

This fact for a long time misled the attempts to construct a satisfactory theory of interest. It was only the elaboration of the imaginary construction of the evenly rotating economy that made it possible to distinguish precisely between ordinary interest and entrepreneurial profit and loss.

5. The Computation of Interest

Ordinary interest is the outgrowth of valuations unceasingly fluctuating and changing. It fluctuates and changes with them. The custom of computing interest pro anno is merely commercial usage and a convenient rule of reckoning. It does not affect the height of the interest rates as determined by the market.

The activities of the entrepreneurs tend toward the establishment of a uniform rate of ordinary interest in the whole market economy. If there turns up in one sector of the market a margin between the prices of present goods and those of future goods which deviates from the margin prevailing in other sectors, a trend toward equalization is brought about by the striving of businessmen to enter those sectors in which this margin is higher and to avoid those in which it is lower. The final rate of ordinary interest is the same in all parts of the market of the evenly rotating economy.

The valuations resulting in the emergence of ordinary interest prefer satisfaction in a nearer period of the future to satisfaction of the same kind and extent in a remoter period of the future. Nothing would justify the assumption that this discounting of satisfaction in remoter periods progresses continuously and evenly. If we were to assume this, we would imply that the period of provision is infinite. However, the mere fact that individuals differ in their provision for future needs and that even to the most provident actor provision beyond a definite period appears supererogatory, forbids us to think of the period of provision as infinite.

The usages of the loan market must not mislead us. It is customary to stipulate a uniform rate of interest for the whole duration of a loan contract⁷ and to apply a

⁶ But, of course, the present-day intentional confusion of all economic concepts is conducive to obscuring this distinction. Thus, in the United States, in dealing with the dividends paid by corporations people speak of "profits."

⁷ There are, of course, also deviations from this usage.

uniform rate in computing compound interest. The real determination of interest rates is independent of these and other arithmetical devices of interest computation. If the rate of interest is unalterably fixed by contract for a period of time, intervening changes in the market rate of interest are reflected in corresponding changes in the prices paid for the principal, due allowance being made for the fact that the amount of principal to be paid back at the maturity of the loan is unalterably stipulated. It does not affect the result whether one calculates with an unchanging rate of interest and changing prices of the principal or with changing interest rates and an unchanging amount of the principal, or with changes in both magnitudes.

The terms of a loan contract are not independent of the stipulated duration of the loan. Not only because those components of the gross rate of market interest which made it deviate from the rate of ordinary interest are affected by differences in the duration of the loan, but also on account of factors which bring about changes in the rate of ordinary interest, loan contracts are valued and appraised differently according to the duration of the loan stipulated.