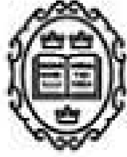

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Keynes and Marx on the Theory of Capital Accumulation, Money and Interest[1]

In the course of his criticism on the "classical" economists, Mr. J. M. Keynes has come, as it were, to occupy much common ground with Marx. It is the purpose of this paper to re-examine Marx's theory of capital accumulation and of the rate of interest contained in volumes II and III of *Capital* in the light of what Mr. Keynes has to say on these subjects.

I. CAPITALIST PRODUCTION AND ACCUMULATION

By the term capitalist production Marx means the process by which property-owners advance their assets in the shape of money with the sole intention of getting back the money form of their assets advanced plus a surplus. Marx described the typical form of capitalist production in the following formula:

$$M \rightarrow C\begin{cases}\frac{m}{1}\end{cases} \ldots p \ldots C' \text{ or } \begin{cases}\frac{c}{\triangle c}\end{cases} \rightarrow M \begin{cases}\frac{M}{\triangle M}\end{cases}$$

This means that capitalist production consists of three stages: (1) $M \rightarrow C$, the transformation of money-capital, M, into the elements of production, C, namely the means of production, m, and labour-power, l; (2) p, the activity of production, i.e. the creation of new utilities by the application of labour-power; (3) $C' \rightarrow M'$, the re-transformation of the newly created utilities into their money form, i.e. the sale of finished goods at a profitable price. Of these three stages the first and last, $M \rightarrow C$ and $C' \rightarrow M'$, belong to the sphere of circulation, while the second, p, belongs to the sphere of production.

Marx intended this formula to indicate the source from which the capitalists' additional income, $\triangle M$, arose. Many economists had suggested that $\triangle M$ was created in the sphere of circulation, $C' \rightarrow M'$, by buying cheap and selling dear. Marx rejected this view on the ground that if one man gets more by $\triangle M$ by selling, another man must get less by $\triangle M$ by purchase, so that, given the value of finished goods as determined in a competitive situation, $\triangle M$ can not be created from M merely by an act of exchange. Hence, it was evident that $\triangle M$, though realised in the sphere of circulation, was firstly created as $\triangle c$ in the sphere of production by the application of labour-power. In other words, for the system as a whole, $\triangle M$ is a function of the expenditure of current labour-power, l, at any given ratio of productivity to wages.

[1] I am very much indebted to Mr. Maurice Dobb for his constant supervision and advice, and also to Dr. Michael Kalecki for his encouragement and constructive criticisms. I have also had much help from Mr. H. S. Furns and, also, from Mr. Brian Tew for reading all and the latter part of this paper respectively. But none of them has any responsibility for errors which remain or for any of the opinions I have expressed. I must add that my research work was undertaken while a research fellow of the China Foundation for the Promotion of Education and Culture.

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Concerning the cost–value relation, it is easy to see that in the process of production C represents the aggregate capital value, M, which is composed of two portions : the one is money–capital which has been invested in the means of production, namely, the value of capital equipment, while the other is money–capital which has been invested in labour–power, namely, wages. Marx called the first portion constant capital, designated as c, and the latter portion variable capital, designated as v, on the grounds, as we have just stated, that $\triangle M$ varies as the expenditure of current labour–power, l, and, therefore, as " wage–capital." The value of $\triangle c$, namely, $\triangle M$, is called by Marx surplus value, designated as s, the only source of the revenue of the capitalist class. Thus the total value of finished goods C', or $c+\triangle c$, namely M', or $M+\triangle M$, or $c+v+s$, is called by Marx the total value of finished goods ready to be sold, designated as V. Since the aggregate of finished goods consists of two kinds, means of production and means of consumption, Marx constructs two equations :

Department I of Means of Production $c_1+v_1+s_1 = V_1$ ......(1)
Department II of Means of Consumption $c_2+v_2+s_2 = V_2$ ......(2)

For the sake of analysis, Marx made use of two models of capitalist production : (1) " simple reproduction," and (2) " enlarged reproduction." In the former the relationship between the two departments is so arranged that at the beginning of every cycle of production the same scale of production is repeated. In the latter the relationship between them is so modified that at the beginning of every cycle of production the scale of production is expanded. " enlarged reproduction " is what Marx describes as capital accumulation.

According to Marx smoothly running " simple reproduction " depends upon three conditions :

(a) The means of production produced by Department I must be as much as is demanded by the two departments for replacement, neither more nor less, namely :

$c_1+c_2 = V_1$ .... (3)

(b) The total value of consumption goods produced by Department II must exactly correspond to the total value of the consumption goods demanded by both departments, namely :

$(v_1+v_2)+(s_1+s_2) = V_2$ .... (4)

(c) From the above two necessary conditions, we derive a third, namely : if each department has purchased that part of its own products for its own use, they must be able to sell to each other the remainder of their products, i.e.

$c_2 = v_1+s_1$ ....(5)

or, more directly :

since $V_1-c_1 = c_2$ ....(3)
and $V_2-(v_2+s_2) = v_1+s_1$ ....(4)
but $V_1-c_1 = v_1+s_1$ ....(1)
hence $c_2 = v_1+s_1$ ....(5)

In the case of accumulation we have three different conditions.

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(a) Since the capitalists increase their investment, they do not consume their income completely. Therefore,

$$V_2 < (v_1 + s_1) + (v_2 + s_2) \qquad (5)$$

(b) The total value of the products of Department I in the form of the means of production will be larger than the sum of the means of production required by the two departments for replacement use; namely,

$$V_1 > c_1 + c_2 \qquad (7)$$

(c) From the above two equations we derive a third:

$$c_2 < v_1 + s_1 \qquad (8)$$

In economic terms this means that the difference between the sum total of the means of production produced by Department I and that part of the means of production reserved for replacement use by the same department must be larger than that part of the means of production required by the second department for replacement use.

Marx is here assuming that when capitalists refrain from spending the whole of their income (s) on consumption goods, the difference is forthwith compensated by an equivalent increase in investment; so that the aggregate demand for and supply of commodities in terms of money will balance. Readers, however, are advised to refer to those numerical illustrations given by Marx in the last two chapters of volume II of *Capital.*

It is easy to see that both of these simple models of reproduction imply two preliminary conditions. One is that all things required for the purpose of maintaining the smooth running of reproduction are being produced in certain definite proportions. For instance, in the case of simple reproduction, $v_1 + s_1 = c_2$ is one of the conditions which a central plan of social production must provide for keeping supply equal to demand. If this condition fails in such a way that $v_1 + s_1 > c_2$ as a result of lack of planning in the sphere of production, then a relative over-production of means of production of Department I must happen and correspondingly a deficiency of effective demand for means of production of Department II. Or, if $v_1 + s_1 < c_2$, the converse will occur. Similarly in the case of enlarged reproduction, production must be so regulated as to make $c_2 + \triangle c_2 = V_1 - (c_1 + \triangle c_1)$. If this condition is not fulfilled a gap between aggregate supply and demand will be inevitable. The second preliminary condition implies that the things that have been produced in these requisite proportions must be able to be exchanged at their values. This implies a co-ordination of the sphere of circulation as well as of production. Or, to put it differently, no portion of money realised by selling must fail to be spent in re-purchase. Suppose that in the case of enlarged production the necessary condition $c_2 < v_1 + s_1$ by $\triangle s_1$ has been fulfilled. If, nevertheless, Department II fails to buy $\triangle s_1$ from Department I, after Department I has bought means of consumption from the second department, it will follow that this act of accumulation of money in the second department must lead to a relative over-production of means of production $\triangle s$ in the first department, no matter how correctly the relationship between the two departments in the sphere of production has been maintained. Under a system of capitalist pro-

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duction, as Marx remarks, " because nothing is undertaken according to social plans, but everything depends on the infinitely different conditions, means, etc., with which the individual capitalist operates "[1] great disturbances will inevitably occur either as a result of relative over-production or as a result of money-hoarding or increase of saving.

It is interesting to note that Mr. Keynes' principle of effective demand has many points in common with the second aspect of Marx's analysis. Mr. Keynes emphasises that the realisation of the entrepreneur's profit depends on the existence of an adequate effective demand. Leaving aside the question of cost due to the deterioration of capital equipment, the aggregate supply price, according to Mr. Keynes, consists of two quantities : one is factor cost, F, while the other is the entrepreneur's profit, P. On the other hand, effective demand, D, also consists of two quantities, namely the amount which the community is expected to spend on consumption, C, and the amount which the community is expected to devote to new investment, I. Symbolically, this means that if $Z = F+P$ and $D = I+C$, then the condition $Z = D$ depends upon $F+P = I+C$. Given I: if $C<(F+P)-I$ then $D<Z$. This means that capitalists will lose money owing to a deficiency of demand for consumption goods. Or, given C: if $I<(F+P)-C$, then $D<Z$, namely, the capitalists will fail to realise their profit owing to a deficiency of effective demand for investment goods.

To return to Marx's analysis of enlarged production : if we abstract the value of replaced capital, i.e. the deterioration of capital equipment, by deducting c from both sides of the equation $c+v+s = V$, then $v+s = V-c$. This equation, then, virtually becomes Mr. Keynes' equation $F+P = Z$. As to the other equation, $D = C+I$, Mr. Keynes and Marx agree to the extent that both of them assume that the realisation of the profit-expectations of capitalists depends upon the condition that (assuming labourers spend all their incomes on consumption goods) the capitalists must *either* consume all their surplus value *or* consume one part of it and directly invest the remainder of it, so that no gap between supply and demand is created by the act of saving. Therefore, the proposition that saving will check effective demand unless there is corresponding investment, as elaborated by Mr. Keynes, is also implied in the theory of Marx.

There is still another aspect of hoarding which reveals common ground on which Mr. Keynes and Marx stand. This concerns the deficiency of effective demand that is caused by a decrease of current expenditure on replacement and renewal. Thus, Mr. Keynes says :

> " All capital investment is destined to result, sooner or later, in capital disinvestment (by which Mr. Keynes means the sale of an old investment). Thus, the problem of providing that the new capital investment shall always outrun capital disinvestment sufficiently to fill the gap between net income and consumption presents a problem which is increasingly difficult as capital increases. New capital investment can only take place

[1] *Capital*, vol. II, chap. VIII, p. 196.

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in excess of capital disinvestment if future expenditure on consumption is expected to increase." [1]

According to Marx's analysis, in the case of enlarged reproduction, if gross investment made by the two departments is not larger than c_1+c_2, other things being equal, there would be no net accumulation of capital at all. If it is smaller than c_1+c_2, other things being equal, there would be even a net decrease of accumulation. Once again, Marx and Mr. Keynes are in agreement. Actually the main equations of Mr. Keynes' " General Theory of Employment " can be deduced from Marx's two main equations of enlarged production. Where Marx speaks of constant capital imparting its value to the product, he is using a conception parallel to Mr. Keynes' deterioration of capital equipment, namely, user cost plus supplementary cost, and, if Mr. Keynes' conception of investment is taken to mean net investment, namely, " the net additions to all kinds of capital equipment," it becomes obvious that Mr. Keynes' aggregate supply price gross of user cost and supplementary cost and Marx's total value of product are the same thing. It may also be of interest to note other similarities in the use that the two theories make of the following concepts:

(1) Mr. Keynes' Aggregate Supply Price and Marx's Total Value of Product. According to Mr. Keynes, aggregate supply price (gross of user cost and supplementary cost) is factor cost plus normal profit plus user cost plus supplementary cost, designated as $A = F+P+U+W$. According to Marx, the total value of the product is constant capital plus variable capital plus surplus value designated as $V = c+v+s$. Since $F+P = v+s = w+r+i+p$ (where w, r, i, and p represent wages, rent, interest, and profit) and $c = u+w$, it follows that Mr. Keynes' A = Marx's V.

(2) Income and Revenue. According to Mr. Keynes, income is aggregate supply price (gross of user cost and supplementary cost) minus user cost minus supplementary cost, designated as $Y = A-U-W$. According to Marx, revenue is the total value of the product minus constant capital, namely, $R = V-c$. Since $A-U-W = F+P = V-c = v+s$, it follows that Mr. Keynes' " income " is Marx's " revenue," i.e. $Y = R$.

(3) Investment and the Purchase of the Means of Production. Mr. Keynes has described investment as total sales between entrepreneurs, i.e. $I = U+W+\triangle I = A_1$. Marx describes the purchase of means of production as consisting of old constant capital plus current additional constant capital and designates this as $c+\triangle c$. The identity of the two is clear. Mr. Keynes' net investment is total sales between entrepreneurs minus user cost minus supplementary cost, i.e. $\triangle I = A_1-U-W$; while Marx's additional purchase of means of production is the difference between total purchase of the means of production and that part of the purchase of the means of production which is used for replacement, i.e. $\triangle c = (c+\triangle c)-c$; so that $\triangle I$ and $\triangle c$ are identical.

(4) Consumption. Mr. Keynes equates consumption to aggregate supply price minus investment, i.e. $C = A-A_1$. Marx equates it to total value of product minus constant capital, old and new, i.e. $C = V-(c+\triangle c)$. As

[1] *General Theory of Employment, Money and Interest*, chap. 8, p. 105.

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$A - A_1 = V - (c + \triangle c)$ it follows that Mr. Keynes' " consumption " is the same as Marx's.

(5) Income and Revenue Reconsidered. Mr. Keynes' " income " equals consumption plus net investment, i.e. $Y = A - A_1 + \triangle I$. Marx's " revenue " is equal to consumption plus net purchase of the means of production, i.e. $R = [(v + \triangle v) + (s + \triangle s)] + \triangle c$. Hence, Mr. Keynes' income $A - A_1 + \triangle I$ equals Marx's revenue $(v + \triangle v) + (s + \triangle s) + \triangle c$.

(6) Net Saving and Net Investment. Mr. Keynes' net saving is income minus consumption and is also net investment, i.e. $S = Y - C = (A - A_1 + \triangle I) - (A - A_1) = \triangle I$. It is obvious that Mr. Keynes' " S " is Marx's " $\triangle c$," the additional purchase of means of production representing the difference between income and consumption.

From the above discussions it will be seen that the deficiency of effective demand, which arises from absence of planning in the sphere of circulation can be explained with equal clarity by means of either Mr. Keynes' analysis or Marx's. Mr. Keynes, however, does not deal with the deficiency of effective demand that arises from the absence of planning in the sphere of production which occupies so prominent a place with Marx. Furthermore, Mr. Keynes' contention that Marx's theory of Capital is based on an acceptance instead of on a refutation of the classical hypothesis [1] and also Mrs. Joan Robinson's assertion that Marx's theory is based on Say's Law [2] that supply creates its own demand, are both of them invalid, since Marx's theory of accumulation, far from following Say's Law, rests on the proposition that supply will correctly correspond to demand *only if* both production and circulation are controlled according to some social plan in which all the necessary conditions that he enunciates are embodied. In Marx's view, however, within a capitalist society, no such social planning of production and circulation is possible ; and he accordingly emphasises that total demand under capitalism is always tending to be smaller than supply. He conceived it to be contrary to their very nature, that the capitalists should consume the whole of their income : their compelling motive was increase of wealth and not enjoyment. Hence the capitalist class was continually under an obligation, not only to " form a reserve fund as protection against fluctuations of value and as a fund enabling them to wait for favourable conditions of the market for sale and purchase, but also accumulate capital," in order to extend production and extend its acquisition of surplus-value in the future.[3] It is quite clear that Marx fully realised that within capitalist production supply never can create its own demand as Say's Law states.

But here we come upon another contradiction that Marx was concerned to emphasize, and it is important to realise that Marx's theory did not hold that the contradictions of capitalist production were confined to maladjustments between various departments of production either in the sphere of production or in the sphere of circulation as some writers have supposed. Marx further

[1] *General Theory of Employment, Money and Interest*, chap. 23, p. 355.

[2] *Essays on the General Theory of Employment*, pp. 246–55.

[3] Marx pointed out that " so long as the formation of a hoard continues, it does not increase the demand of the capitalist " ; while if the worker saves a part of his wages, he converts this part into a hoard and does not perform the function of a purchaser.

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emphasised that as capital accumulation proceeded, this produced a tendency for the rate of profit to fall. For the demonstration of this tendency Marx relied on his main equation, $c+v+s = V$. Let us first abstract rent from s by assuming that production is carried on upon marginal land. s will then represent profit, including interest, while $s/(c+v)$ will represent the rate of profit. Given s as being uniquely determined by v, if the productivity of labour measured in terms of wage-units is constant, it will follow that when, as a result of capital accumulation, c increases faster than v, the *rate* of profit must fall. Mr. Keynes' theory also refers to this tendency to a falling rate of profit in the form of the tendency for the schedule of the marginal efficiency of capital to fall as the stock of capital grows. In Mr. Keynes' view this declining tendency of marginal efficiency of capital develops, partly because the prospective yields fall as the supply of the same type of capital increases, and partly because, as a rule, pressure on the facilities for producing capital goods will cause their supply price to increase. The validity of Mr. Keynes' argument, therefore, depends on two conditions: (1) that the types of capital equipment are fixed in number; and (2) the shape of the supply curve of each type of capital good is increasing.

Yet we must note that Marx's analysis of capitalist accumulation has its own limitations. Concentrating his energy on the analysis of a closed economy in which only two classes have been assumed, Marx has reached the conclusion that in a capitalist society the process of capital accumulation cannot be enlarged beyond the limit set by the total expenditure of both the capitalist class and working class on means of production and means of consumption. Marx only touches incidentally on the possibility of the capitalists raising their average rate of profit by investment in foreign countries and particularly in colonial areas where the productive forces are less developed. It is at this point that Lenin developed Marx's analysis of foreign investment, by showing that a capitalist society surrounded by non-capitalist and undeveloped capitalist countries can expand its profits (and hence, subsequently its accumulation) beyond the limit set by the aggregate demand of the society itself by means of exporting capital. Highly developed capitalist societies, which suffer from a sharp limitation of the home market in the shape of saving or hoarding or of relative over-production of means of production and/or suffer a marked decline in the general rate of profit, are compelled to treat the export of capital as a question of life and death so far as the continuance of capitalism is concerned.[1] Mr. Keynes has come to occupy much the same position as Lenin on this question. He maintains that the " balance of foreign countries' expenditure " may be regarded as an addition to net investment from the point of view of capitalist society. Like Lenin, he holds that the export of capital may be correctly interpreted as the " balance of foreign countries' expenditure "; meaning by this an export of goods in terms of money without any corresponding import. The future of economics, therefore, depends mainly upon the extent to which our knowledge of the export of capital and its significance as elaborated by Marx, Lenin, and also by Mr. Keynes, can be extended, in the direction of

[1] V. I. Lenin, *Imperialism*, chap. 6, pp. 69–75.

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enabling us (I hope) to understand the influence exerted on the feelings, thoughts and actions of different classes of both the capital-exporting and capital-importing countries by the manner in which capital is exported and also by the forms that this capital-export assumes.

II. MONEY AND THE RATE OF INTEREST

So far we have analysed only the pure relation between effective demand and the smooth running of the system of capitalist accumulation. Marx, however, extended the sphere of his research to include a study of money, the rate of interest and financial crises; and one can say that Marx was the first to indicate the antagonistic relation between industrial profit and the rate of interest, which Mr. Keynes has re-examined in his *General Theory*. It is of interest in this connection to note how much Mr. Keynes' criticism of the Bank Act of 1925 has in common with Marx's criticism of the Act of 1844. Mr. Keynes attacked the 1925 Act which provided that " £120 millions must be held in gold against the active Note Circulation of the Bank Notes and Currency Notes amounting to £387 millions " on the grounds that " the £120 millions must be held (in gold) to satisfy the law is absolutely useless for any other purpose; indeed, it intensified depression through the curtailment of credit in conforming with all the rules of the Gold Standard." Similarly, Marx criticised the 1844 Act which divided the Bank of England into an issue department and a banking department, and provided for a stringent control of the note issue in relation to the gold reserve.[1]

According to Marx (as interpreted by Engels), " the separation of the Bank into two departments robbed the management of the possibility of disposing freely of its entire available means in critical moments, so that cases might occur in which the banking department might be confronted with bankruptcy, while the issue department still possessed several millions in gold and its entire £14 millions of securities untouched. And this could take place so much more easily, as there is one period in almost every crisis, when heavy exports of gold flow to foreign countries, which must be covered in the main by the metal reserve of the Bank. But for every five pounds in gold, which then go to foreign countries, the circulation of the home country is deprived of one five pound note, so that the quantity of the currency is reduced precisely at the time when the largest quantity of it is most needed. The Bank Act of 1844 thus directly challenges the commercial world to think betimes of laying up a reserve fund of bank notes on the eve of crisis; by this artificial intensification of the demand for money accommodation, that is for the means of payment and its simultaneous restriction of the supply, which takes place at the decisive moment, this Bank Act drives the rate of interest to a hitherto unknown height; hence, instead of doing away with crises, the Act rather intensifies it to a point where either the entire commercial world must go to pieces, or the Bank Act." For this reason, Marx dismissed the Bank Act of 1844 as the " crazy " policy of Lord Overstone in much the same way as Mr. Keynes stigmatised the Bank Law of 1925 as the " sound " policy of Mr. Churchill.

[1] *Capital*, vol. III, chap. xxxiv, pp. 651–2, English Translation. Also chap. xxxiii, pp. 606–7.

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Let us consider the theoretical foundations of Marx's criticisms. The first problem which arises here is this : Is the rate of interest a reward for saving or abstinence as such ? The answer of Marx is in the negative. He rejects for two reasons the validity of Nassau W. Senior's abstinence theory of capital. One of them is exactly the same as that of Mr. Keynes when he makes an examination of the same abstinence theory of Marshall and his contemporaries, while the other, though not contained in Mr. Keynes' system, yet supplements rather than contradicts it. In Marx's view, the pure act of saving or abstinence, either in the shape of hoarding money or in the shape of hoarding commodities will not create interest at all, because the " exclusion of money from circulation " in consequence of hoarding money in cash " would also exclude absolutely its self-expansion as capital, while accumulation of a hoard in the shape of commodities will be sheer tomfoolery." [1] Therefore, he adds, in the section dealing with interest, " so long as a money capitalist is keeping money capital in his own hands it collects no interest, it does not act in the capacity of capital ; and so long as it gathers interest and serves as capital, it is not in his hand." [2] This form of statement is comparable to what Mr. Keynes has said about the same point : " It should be obvious that the rate of interest cannot be a return to saving or waiting as such. For if a man hoards his savings in cash, he earns no interest, though he saves as much as before." [3] The second reason of Marx is that the abstinence theory is illogical in the sense that " it has never occurred to the vulgar economist to make the single reflection that every human action may be viewed as abstinence from its opposite. Eating is abstinence from fasting, walking is abstinence from standing still, working, abstinence from idling, idling, abstinence from working, etc. These gentlemen would do well to ponder, once in a way, over Spinoza's *Determinatio est Negatio*."

Hence, a second question arises. If Marx's statement is true that the rate of interest is not a return for saving as such, then, from Marx's point of view, for what kind of thing is the rate of interest a reward ? According to Marx, as soon as the social functions of money are understood this question is solved. Admitting that money is a standard of value, Marx points out that it has three other social functions : (1) as a means of purchase ; (2) as a means of payment ; and (3) as a means of hoarding. If in the sphere of circulation $C \rightarrow M \rightarrow C$ (selling followed by purchase), commodity and money must confront each other at the same time. Money then circulates as a means of purchase. But if at the two poles of exchange there is a commodity on the one hand, but on the other hand not money but credit or a bill of exchange, money then functions, not as a means of purchasing, but as a means of payment. In this case money will not appear of itself in the sphere of circulation until such time as the term of contract expires. Thus in the whole market when the transfer of commodity-capitals between capitalists is promoted by bills of exchange, money, then, plays its well-known role as a means of payment. To the above two functions it is necessary to add a third, i.e. money as a means of hoarding or as a store of value. If in the course of circulation $C \rightarrow M \rightarrow C$ (selling to buy

[1] *Capital*, vol. I, pt. II, chap. vii, p. 599, English translation, edited by Dona Torr.
[2] *Capital*, vol. III, chap. xxiii, p. 435, English translation.
[3] *The General Theory of Employment, Interest and Money*, chap. 13, p. 167.

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again), the first phase (selling, $C \rightarrow M$) is not followed immediately by the second phase (purchase, $M \rightarrow C$), but only after an interval of time, then money becomes a means of hoarding. We must, however, note that there are two different kinds of hoarding corresponding to two different historical periods. In ancient society, hoarding occurs generally in the form of a store of wealth for its own sake, the impulse to hoard being greed, or the satisfaction of social aspirations. Those who held wealth in its money form did so neither for enjoyment nor for making profit. With the development of capitalist production, however, this sort of hoarding declined as a source of enrichment and there grew up a new species of hoarding directly required by the productive process as a reserve fund of means of payment. The fact that at times of disturbance the whole commercial world clamours for hard cash essentially expresses the fact that money is being required as a means of payment. On the other hand, at times of expansion money is chiefly required as a reserve fund of means of purchase, for the expenditure of incomes. In view of the fact that the industrial capitalists require to borrow money from money capitalists to employ it either as a means of payment or as a means of purchase in the course of real production, Marx defines the rate of interest mainly as a proportional sum which the industrial capitalists have to pay to the money capitalists for the use of a certain amount of money capital over a given interval of time.[1]

With regard to the determination of the rate of interest, Marx was perfectly clear that it was a *money* rate, and treated it as something distinct from the rate of profit on real capital, already invested in the productive process, and as being determined by the supply and demand for money–capital in contrast to other forms of capital. But one might ask furthermore : How did he regard the demand and supply of money–capital as being determined ? " It is doubtless true," he says, " that a tacit connection exists between the supply of commodity–capital and the supply of money–capital, and also that the demand of the industrial capitalist for money–capital is determined by the actual conditions of real production."[2] It is evident that the total sum of money required by capitalist society in the course of capitalist production consists of two portions : one is required as a means of purchase for the expenditure of revenue between consumers and retail dealers, while the other is required for the transfer of capital between capitalists. Thus the total sum of money in circulation at a given time, given the rapidity of the circulation of money, will depend on the sum of these two portions, subject to the condition that commercial credit, or bills of exchange, can be substituted for money as a means of payment.

We may now turn our attention to the question of the way in which the demand of industrial capitalists for money varies with the conditions of prosperity and crisis.

" In times of prosperity, great expansion, acceleration and intensity of process of reproduction," says Marx, " the labourers are fully employed.

[1] *Capital*, vol. III, chap. 23, p. 435.
[2] *Capital*, vol. III, chap. 23, p. 495.

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Generally there is also a rise of wages which makes up in a slight measure for their fall below the average level in the other periods of the commercial cycle. At the same time the revenue of the capitalists grows considerably. Consumption increases universally. The prices of commodities also rise regularly, at least in various essential lines of business. Consequently the quantity of the circulating money grows, at least within certain limits, since the increasing velocity draws certain barriers around the quantity of the currency. Since that portion of the social revenue, which consists of wages, is originally advanced by the industrial capitalist in the form of variable capital, and always in the form of money, he requires more money in times of prosperity for his circulation." "The final result is that the mass of currency required for the expenditure of revenue increases decidedly in periods of prosperity. As for the currency, which is necessary for the transfer of capital for the exclusive use of the capitalists, a period of brisk business is at the same time a period of most elastic and easy credit." [1] On the one hand, an enlarged proportion of payments is handled by commercial credits in the form of bills of exchange which circulate among the industrial capitalists, as a means of payment, by successive endorsement without the intervention of any money at all; on the other hand, owing to the great fluidity of this process, the same quantities of money have a greater velocity. Thus the mass of currency required for the transfer of capital decreases relatively, although its absolute quantity may increase.

In a period of crisis, however, the position is reversed. Both reinvestment and new investment contract, prices fall, likewise the wages of labour; the number of employed labourers is reduced, the mass of transactions decreases. On the other hand, in consequence of the sudden paralysis of the capitalistic process of production, confidence is shaken, commercial credit becomes scarce and contracted, and the demand for the conversion of bills of exchange into cash will necessarily increase in a similar degree. In other words, the need for money as a means of payment will increase as commercial credit decreases. At the same time, since the demand for money to meet obligations to pay cash for maturing bills increases much more than can be counterbalanced by the contraction of liquid resources required for the expenditure of incomes, the volume of money required for business transactions increases as a whole. Therefore, Marx remarks "that a low rate of interest generally corresponds to periods of prosperity, or of extra profit, a rise of interest to the transition between prosperity and its reverse, and a maximum of interest up to a point of extreme usury to the period of crisis." It is in times of stringency (and only then), as he emphasises, that "the absolute quantity of circulation has a determining influence on the rate of interest."[2]

It is now proper to consider Marx's analysis of the supply of money capital. According to him the supply of money capital depends roughly on three facts: (1) the growth and development of the banking system; (2) imports of gold; and (3) banking legislation and its enforcement.

(1) In countries with a developed banking system a growing proportion of the total money in circulation, which would otherwise slumber as a reserve

[1] *Capital*, vol. III, chap. 28, p. 528.
[2] *Capital*, vol. III, chap. 33, p. 622.

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fund, is absorbed in the hands of bankers, whereby either a greater economy in the use of money or a relaxation in the flow of bank credit is realised. Thus, the more concentrated is the banking system the smaller are the reserve funds which every producer and merchant must keep as a hoard for gradual consumption or for gradual investment or for the purpose of counter-balancing disturbances in the circulation of productive capital, etc. The banks are thus enabled by concentrating all kinds of reserve funds of the commercial world into something like a common treasury, to lend money at a lower rate of interest than would otherwise prevail.

(2) In the second place, the supply of money, as Marx says, depends on " the extraordinary imports of gold such as those of 1852 and 1853 resulting from the output of the new Australian and Californian mines. This gold was deposited in the Bank of England. The depositors took notes instead, which they did not redeposit in banks. By this means the circulating medium was usually increased. The Bank strove then to utilise these deposits by lowering its discount to 1%."[1]

(3) Finally, the supply of money depends on banking legislation and its enforcement. Before the Act of 1844, as Marx remarks, no limit was set to the issue of Bank of England notes. If the exchange rates were in favour of England and unrest, or even panic, reigned in the country, the condition of stringency could be relieved by the issue of notes. But with the Act of 1844, which set a rigid limit to the issue of bank notes, the supply of money became scarce in times of emergency. Thus, during the period of crop failure in 1847, when England had to pay millions of gold to foreign countries for imported corn and potatoes, " there was no rate of interest which the Bank could ask from creditable firms, which they would not have paid willingly in order to continue their payment." [2] Eventually, the Government had to face the fact that the Bank itself was in danger and, yielding to the universal demand, suspended the Bank Act on October 25, 1857, thereby breaking the legal pattern on the Banks policy. The Bank was now enabled to put its supply of banknotes into circulation without any interference, and the Bank Rate fell once more to the normal level. Following this close examination of the Bank Act of 1844, Marx remarks : " All history of modern industry shows that metal would indeed be required only for the balancing of international commerce, whenever its equilibrium is disturbed momentarily, if only national production were properly organised. That the inland market does not need any metal even now is shown by the suspension of cash payments of the so-called national banks, that resort to this expedient whenever extreme cases require it as the sole relief." [3] It is obvious that time has proved the correctness of Marx's prediction.

Three final questions remain : (a) What is the position of Marx in respect to modern controversies on the rate of interest ? (b) What can modern economists learn from Marx's theory of interest ? (c) Is it likely that the smooth running of capitalist production can be attained by reducing the rate of interest to zero ?

[1] *Capital*, vol. III, chap. xxxi, pp. 589–90.
[2] *Capital*, vol. III, chap. xxiv, pp. 656–7.
[3] *Capital*, vol. III, pp. 607–8.

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(a) My answer to the first question is that, in his analysis of the rate of interest in times of crisis, Marx has much in common with Mr. Keynes, to the extent that he regards the rate of interest as being primarily determined by the supply and demand of money. In his analysis of the rate of interest over the whole period of a trade cycle, Marx's work is more akin to that of Professor Robertson, in the sense that he considers the rate of interest as being determined by the supply and demand of loanable money. On the whole, however, Marx's theory can be correctly interpreted as a typical bank-loan theory, since he says, in a certain place, that " the variations of the rate of interest depend upon the supply of loan-capital, that is of the capital loaned in the form of money, hard cash, and notes . . . However, the mass of this loanable capital is different from and independent of the mass of circulating money. If twenty pounds sterling were loaned five times per day, a money capital of 100 pounds sterling would be loaned." [1] Although Marx argues that in times of stringency the rate of interest is primarily determined by the absolute quantity of money in circulation, this must not be taken out of the whole context of his work. Marx seems to assume that during a financial panic, loanable capital decreases in proportion to the increase of hoards, because every one takes good care not to convert money into loanable capital.

Whether Marx's theory of interest belongs to the loanable-funds approach or the cash-balances approach is a question that is probably more important in form than in substance. " For over any short period," as Professor J. R. Hicks has said, " the difference between the value of things an individual acquires (including money) and the value of things he gives up (including money) must, apart from gifts, equal the change in his net debt—his borrowing and lending. The same will apply to a firm. If then, the demand for every commodity and factor equals the supply, and if the demand for money equals the supply of money, it follows by mere arithmetic that the demand for loans must equal the supply of loans. Similarly, if the equations of supply and demand hold for commodities, factors and loans it will follow automatically that the demand for money equals the supply of money." [2] This clearly shows that in equilibrium the rate of interest is determined simultaneously both by the supply and demand of cash and the supply and demand of loanable funds.

However, we must emphasise that the superiority of Marx's theory of interest compared with that of the neo-classical economists is that from the outset he regards the rate of interest as a money rate. The determination of the rate of interest is, therefore, specifically a monetary problem. Marx probably is the first who has been able to distinguish money capital from commodity-capital, and even from short-term bills and other securities. Thus the antagonistic relation between industrial profit and the money rate of interest on the one hand, and also the institutional conflict of interests between industrial capitalists and money capitalists on the other, are greatly clarified.

[1] *Capital*, vol. III, chap. 31, pp. 586–7. (Marx excepts from this statement changes in the rate of interest " occurring in long periods." These he thinks are to be explained in terms of changes in the rate of profit or in general credit facilities.)

[2] J. R. Hicks : " Mr. Keynes' General Theory of Employment," *Economic Journal*, June, 1936.

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(b) The most valuable contribution of Marx's theory of the rate of interest is the way in which it has clarified the relation between " debts " and money. In Marx's view " debts " are themselves only money in so far as they absolutely take the place of actual money to the amount of its normal value as a means of purchase or as a means of payment. He also informs us that " debts " can take the place of actual money both for the transfer of capital between capitalists and for the settlement of mutual claims of indebtedness only at times of prosperity, when the state of confidence is very strong, the sale of commodities at profitable prices being assured. The extent to which " debts " act as money will finally be determined by the smooth inter-relationship of production and circulation. Hence it follows that if the relationship between the various lines of production were so correctly balanced that no interruptions of the kind that we have spoken of above could occur in an exchange-society, money required for business transactions might be entirely replaced by the employment of " debts " either as a means of purchase or as a means of payment. Therefore " debts " like bank-notes, would not be able to earn any interest for their keepers and the rate of interest would be zero. This clearly shows that the realisation of a zero rate of interest will uniquely be determined by the zero rate of deviations between aggregate supply and demand price in the long run, which, however, can only be the result, as we have shown, of a central co-ordination of production and circulation. Under the conditions of capitalist production where no central planning of the economy is possible, and periodic ruptures of confidence are inevitable, cash is normally preferred to " debts," and, therefore, the antagonistic relation between the rate of interest and industrial profit is and remains a question unsolved and insoluble despite any monetary manipulation that may be desired and even occasionally brought into force.

(c) In view of the fact that the result of any money panic is certainly more in favour of the money capitalists than in favour of industrial capitalists, those who are friends of the industrial capitalists naturally hope to see the rate of interest reduced, particularly at the height of a crisis, to an insignificant amount approaching to zero, in order to ensure the convertibility of maturing bills and hence the saleability of commodities at profitable prices. It is impossible to imagine money capitalists accepting a zero rate of interest in direct contradiction to their own interests. Even if they were to do so, periodical crises would still happen, owing to the fact that the causes of capitalist crises are numerous: firstly, the keen competition between industrial capitalists and their financial superiors; secondly, maladjustments between the various departments of production; thirdly, the disproportion of consumption of capitalists and the accumulation of their capitals; and, finally, the poverty and the restricted consumption of the masses in consequence of the relative and progressive growth of capital equipment compared to wages, combined with that grand tragedy of capitalist production, the falling rate of profit.

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