Marxian Economics and Modern Economic Theory

1. In a recent issue of the *Kyoto University Economic Review*[1] Professor Shibata brought up the question of the relative merits of Marxian economics and the modern theory of economic equilibrium. He contends that the theory of general economic equilibrium, which has received its most precise and complete formulation in the works of the School of Lausanne, " is ineffectual in making clear systematically either the organisation of present-day capitalistic society or the laws of its development "[2], while the Marxian political economy, " though it is now shown to contain many defects, sets forth theories which are either intended to enunciate systematically the organisation of present-day capitalistic society and the laws governing its development, or have inseparable and necessary bearings on them."[3] And Professor Shibata asks what it is that makes Marxian economics so powerful a tool for understanding the basic phenomena of Capitalism while the mathematical theory of economic equilibrium is quite powerless.

This superiority of Marxian economics seems strange, indeed, in view of the fact that it works with concepts which are long since outdated and which ignore the whole development of economic theory since the time of Ricardo. Professor Shibata thinks that the sterility of the theory of general economic equilibrium is due to its complexity and the high degree of abstraction which make its application to actual problems impossible. Marxian economics instead, being concerned rather with aggregates and averages than with the mental structure of the individuals taking part in the organisation of capitalist production, is more amenable to direct practical application. Professor Shibata tries, therefore, to restate and simplify the Lausanne system of equations so as to make it possible to apply them practically. In this Professor Shibata has performed an exceedingly fine piece of analysis for which any serious economist should be grateful. It seems to me, however, that Professor Shibata has not touched the very essential point which accounts for the (real or alleged) superiority of Marxian over " bourgeois " economics. It is, therefore, my purpose to discuss: (1) in what the real or alleged superiority of Marxian economics consists, and (2) whether this superiority is due to the economic concepts used by Marx, or to an exact specification of the institutional (or, if the reader prefers the expression, sociological) data which form the framework in which the economic process works in Capitalist society.[4]

[1] Kei Shibata, Marx's Analysis of Capitalism and the General Equilibrium Theory of the Lausanne School, *The Kyoto University Economic Review*, July 1933.

[2] *loco cit.* p. 107. [3] *Ibidem* p. 108.

[4] As the word Capitalism is used frequently very ambiguously it should be mentioned here that it is used in this paper in its Marxian sense, i.e. Capitalism means an exchange-economy with private ownership of the means of production, to which the further sociological datum is added that the population is divided into two parts, one of which owns the means of production while the other part, owning no means of production, is compelled to work as wage-earners with the means of production belonging to the other part. Only because of this sociological datum do profit and interest appear as personal income separate from wages.

2. The Marxist's claim to superiority for his economics is that "bourgeois" economics has utterly failed to explain the fundamental tendencies of the development of the Capitalist system. These tendencies are: the constant increase of the scale of production which by substituting large-scale for small-scale production has led to the transition from the free-competitive Capitalism of the nineteenth century to the present monopolistic (or rather oligopolistic) Capitalism; the substitution of interventionism and "planning" for *laisser-faire*; the transition from free trade to high protectionism and economic nationalism in international relations; the constant expansion of the capitalist method of production in non-capitalist countries, which as long as competition was free led to a relatively peaceful permeation of capitalist economy and Western civilisation through the whole world, but which with oligopolistic and interventionist Capitalism leads to imperialist rivalry among the principal capitalist powers; the increase of economic instability in the capitalist system, which by destroying the economic and social security of the population of capitalist countries, causes them to rebel against the existing economic system, whatever the ideology and programme underlying this rebellion (Socialism or Fascism).

The claim that "bourgeois" economists have failed to explain these tendencies in the development of Capitalism, and to formulate them into a theory of economic evolution seems to be justified indeed. How utterly they failed to do so is conspicuous from the fact that many of them denied this development until the phenomena apparently became so overwhelming as to be familiar to anybody but the professional economist who was always the last to recognise their existence. Thus the tendency towards the concentration of production was denied, or, if admitted, was regarded as of minor significance for the nature of the economic system, until the monopolistic (or oligopolistic) character of the basic industries became so obvious that a special theory of limited competition had to be developed to supplement orthodox economic theory. The transition from free trade to protectionism was mainly interpreted as an act of economic folly; its close connection with the transition from free competition to monopolistic control has as yet scarcely been realised by "bourgeois" economists. The imperialist rivalry of capitalist powers has mainly been explained in purely political terms, the connection between imperialist rivalry and the fight for monopolistic control scarcely being realised. It was very generally held among "bourgeois" economists both at the beginning of the twentieth century and in the years preceding 1929, that the economic stability of Capitalism was increasing and that business fluctuations were becoming less and less intense. Thus the Marxian claim that "bourgeois" economists failed to grasp the fundamental tendencies of the evolution of the Capitalist system proves to be true. They either denied the existence of these tendencies or if they took account of them they never succeeded in explaining them by a consistent theory of economic evolution, but effectively offered no more than a historical description. On the other hand, Marxian economics must be admitted to have anticipated these tendencies correctly, and to have developed a theory which investigates the causal mechanism of this evolution and thus shows its inevitability.

It may be contended, however, that the lack of understanding of the basic phenomena of the evolution of Capitalism by the professional economists was not a failure of their science, but rather a personal failure due to their middle-class social allegiance. They certainly could not be expected to look with favour on a theory of evolution which draws the conclusion that the middle-class will be wiped out in the process of evolution. If this were the case, it would have been an "error artificis" rather than an "error artis", the psychological grounds of which are easily explained. There are, however, reasons which seem to suggest that the failure is more than a purely personal one and that some "error artis" is involved. In order to display this let us imagine two persons: one who has learned his economics only from the Austrian School, Pareto and Marshall, without ever having seen or even heard a sentence of Marx or his disciples; the other one who, on the contrary, knows his economics exclusively from Marx and the Marxists and does not even suspect that there may have been economists outside the Marxist School. Which of the two will be able to account better for the fundamental tendencies of the evolution of Capitalism? To put the question is to answer it.

But this superiority of Marxian economics is only a partial one. There are some problems before which Marxian economics is quite powerless, while "bourgeois" economics solves them easily. What can Marxian economics say about monopoly prices? What has it to say on the fundamental problems of monetary and credit theory? What apparatus has it to offer for analysing the incidence of a tax, or the effect of a certain technical innovation on wages? And (irony of Fate!) what can Marxian economics contribute to the problem of the optimum distribution of productive resources in a socialist economy?

Clearly the relative merits of Marxian economics and of modern "bourgeois" economic theory belong to different "ranges". Marxian economics can work the economic evolution of capitalist society into a consistent theory from which its necessity is deduced, while "bourgeois" economists get no further than mere historical description. On the other hand, "bourgeois" economics is able to grasp the phenomena of the every-day life of a capitalist economy in a manner that is far superior to anything the Marxists can produce.[1] Further, the anticipations which can be deduced from the two types of economic theory refer to a different range of time. If people want to anticipate the development of Capitalism over a long period a knowledge of Marx is a much more effective starting point than a knowledge of Wieser, Boehm-Bawerk, Pareto or even Marshall (though the last-named is in this respect much superior).

[1] This difference is connected, of course, with the respective social functions of "bourgeois" and Marxian economics. The first has to provide a scientific basis for rational measures to be taken in the current administration of the capitalist economy (monetary and credit policy, tariffs, localisation, monopoly prices, etc.), the social function of the latter has been to provide a scientific basis for long range anticipations guiding the rational activity of a revolutionary movement directed against the very institutional foundations of the capitalist system. But in providing a scientific basis for the current administration of the capitalist economy "bourgeois" economics has developed a theory of equilibrium which can also serve as a basis for the current administration of a socialist economy. It is obvious that Marshallian economics offers more for the current administration of the economic system of Soviet Russia than Marxian economics does, though the latter is surely the more effective basis for anticipating the future of Capitalism. In so far, modern economic theory, in spite of its undoubted "bourgeois" origin, has a universal significance.

But Marxian economics would be a poor basis for running a central bank or anticipating the effects of a change in the rate of discount.

3. The difference between the explanatory value of Marxian and " bourgeois " economics respectively is easily accounted for if the essential features of modern economic theory are recalled. Economic theory as developed by the Austrian, Marshallian and Lausanne schools is essentially a *static* theory of economic equilibrium analysing the economic process under a system of constant *data* and the mechanism by which prices and quantities produced adjust themselves to changes in these data. The data themselves, which are psychological (the preference scales of the consumers), technical (the production functions), and institutional (the forms and distribution of property of the factors of production, the monetary and banking system, etc.) are regarded as outside the scope of economic theory. The study of the data is a matter of descriptive and statistical investigation, the study of changes in the data is the province of economic history. If there are any " laws " discoverable in the change of data, their study is outside the range of economic theory. Further, the institutional data of the theory are not specified. In so far as the theory of economic equilibrium is merely a theory of distribution of scarce resources between different uses it does not need any institutional data at all, for the relevant considerations can be deduced from the example of Robinson Crusoe. In so far economics is not even a social science. When economic theory is concerned with the pricing process, the specification of institutional data is very general. All that is assumed is the existence of the institutions necessary for the functioning of an exchange economy. But the consequences of the additional institutional[1] datum which distinguishes Capitalism from other forms of exchange economy, i.e. the existence of a class of people who do not possess any means of production, is scarcely examined.

Now, Marxian economics is distinguished by making the specification of this additional institutional datum the very corner-stone of its analysis, thus discovering the clue to the peculiarity of the Capitalist system by which it differs from other forms of exchange-economy. Another characteristic feature of Marxian economics (which will be shown to be closely connected with the former one), is that it provides not only a theory of economic equilibrium, but also a theory of economic evolution. For modern "bourgeois" economics the problem of economic evolution belongs not to economic theory but to economic history. The study of changes in the data of the economic system is regarded as being beyond the scope of economic theory: for these changes are considered to be from the economists' point of view accidental, not results of the economic process.[2] In opposition to this point

[1] By calling the fact of division of society into proletarians and owners of means of production an institutional datum I do not mean to imply that it is imposed by law. It might be better, perhaps, to distinguish between institutional data, resulting from legal institutions, and other types of sociological data which are not expressed in the form of legal institutions, but as the term " institutional " is used generally in a very broad sense there is no need to make such distinction for the purpose of this paper.

[2] Also H. L. Moore's theory of moving equilibrium explains only the reaction of the economic system to a given continuous change of data. The change of data itself is determined statistically but is not an object of theoretical analysis. The same is true of the " dynamic " theories which deduce the necessity of fluctuations from time lags in adjusting supply to changes in price.

of view, Marxian economics provides further a *theory* of economic evolution.[1]

The Marxian theory of economic evolution is based on the contention that it is possible, in certain circumstances, to deduce the necessity for, and also the direction of a certain change of economic data, and that such a change follows, in a particular sense, from the very mechanism of the economic process in capitalist society. What this mechanism is and what the term " necessity " means in this connection will be seen later ; here it is sufficient to mention that the fundamental change in data occurs in production (a change of the production function) and that the " necessity " of such change can be deduced only under the institutional set-up specific to Capitalism. Thus a " law of development " of the Capitalist system is established. Hence the anticipation of the future course of events deduced from the Marxian theory is not a mechanical extrapolation of a purely empirical trend, but an anticipation based on the recognition of a law of development and is, with certain reservations, not less stringent than an anticipation based on the static theory of economic equilibrium such as, for instance, the anticipation that a rise in price leads, under certain circumstances, to a decline of the amount of a commodity demanded.

4. The economist whose horizon does not extend beyond the limits of a purely static theory of equilibrium usually denies the possibility of a theory of economic evolution. He is too much accustomed to see in the evolution of what he regards as the pure data of his science a certain kind of " accident " which may be described by the historian and statistician but which cannot be accounted for causally, at any rate not by economic theory. His argument is in general that the phenomena are too complicated to be capable of theoretical formulation, i.e. to be accounted for by one single principle (or a few principles). He contends that in the study of economic evolution so many factors must be taken into account that economic evolution can virtually only be described historically and cannot be forced into the pattern of an oversimplified (and therefore wrong) theory.[2] However, this argument is scarcely convincing, it is too much like that put forward by the historical school against the possibility of even static economic theory. The pricing problem, so the historical and purely institutionalist economist argues, is much too complicated to be explained by one single principle (marginal utility), but should rather be described historically and statistically so as to take due account of all the factors infuencing the price of a commodity. And such factors are, besides utility, the cost of production, relative scarcity, the cost of transportation, the extent to which the commodity is imported or exported, its quality, the climate if the commodity is an article of clothing, etc., etc.[3] How crazy, one

These theories deduce the impossibility of an equilibrium in certain cases from the very nature of the adjustment mechanism, but they cannot deduce theoretically the changes of data responsible for the trend on which the fluctuations due to the process of adjustment are superimposed.

[1] The difference between a *theory* of economic evolution and a mere historical account of it is excellently explained in Chapter II of Schumpeter's *Theory of Economic Development* (English translation. Cambridge, Mass., 1934). Schumpeter is the only economist outside the Marxist camp who has formulated a theory of economic evolution. However, the close connection of his theory with Marxian ideas is obvious.

[2] The same type of argument is generally raised against the theory of historical materialism which explains social evolution in terms of a few definite principles.

[3] I know, for instance, of an institutionalist economist who actually maintained that the price level depends on exactly 12 factors. From his enumeration of these factors I happen

might conclude on this type of argument, to explain the complicated result of so many causes by one single principle such as marginal utility.

Another argument is that even if a theory of economic evolution is in principle possible it does not belong to the field of economics. If by this it is meant that the theory of economic evolution requires *additional* assumptions beyond those contained in the theory of economic equilibrium this is obvious, for if the theory of economic equilibrium already contained these assumptions it would deduce a process of evolution instead of a state of equilibrium. Whether, however, the deduction of the necessity for a change of certain data from certain principles is called *economic* theory or not is merely a matter of terminology. It should be noted, however, that in Marxian theory this change of data is deduced from the principle of profit maximisation which is at the basis of the theory of economic equilibrium and that the phenomena connected with it were regarded by the classical economists as belonging to the traditionally established body of economic theory. Hence a theory of economic evolution explaining certain changes of data as resulting from " within " the economic process in capitalist society may duly be included in the science of economics.

5. I have pointed out that the real source of the superiority of Marxian economics is in the field of explaining and anticipating a process of economic evolution. It is not the specific economic concepts used by Marx, but the definite specification of the institutional framework in which the economic process goes on in capitalist society that makes it possible to establish a theory of economic evolution different from mere historical description. Most orthodox Marxists, however, believe that their superiority in understanding the evolution of Capitalism is due to the economic concepts with which Marx worked, i.e. to his using the labour theory of value. They think that the abandonment of the classical labour theory of value in favour of the theory of marginal utility is responsible for the failure of " bourgeois " economics to explain the fundamental phenomena of capitalist evolution. That they are wrong can be easily shown by considering the economic meaning of the labour theory of value. It is nothing but a static theory of general economic equilibrium. In an individualistic exhange economy, based on division of labour, in which there is no central authority to direct which commodities, and in what quantities, are to be produced, the problem is solved automatically by the fact that competition enforces such a distribution of productive resources between the various industries that prices are proportional to the amount of labour necessary for producing the respective commodities (these being the " natural prices " of classical economics). In essence this is as static as the modern theory of economic equilibrium, for it explains price and production equilibrium only under the assumption of certain data (i.e. a given amount of labour such as is necessary to produce a commodity—an amount determined by the technique of production). Nor is this theory based on more specialised institutional

to remember : the confidence people have in the national currency, whether the national budget is balanced or not, the balance of foreign trade, the size of agricultural crops (and thus indirectly rainfall). The ratio of the volume of monetary and credit circulation to the volume of trade he recognised as *one* of the factors, of course, but how wrong, he argued, to think of it as *the* principle explaining the price level.

assumptions than the modern theory of economic equilibrium ; it holds not only in a capitalist economy, but in any exchange economy in which there is free competition.[1] To be exact, however, it really holds precisely only in a non-capitalistic exchange-economy of small producers each of whom owns his own means of production (an exchange economy composed of small self-working artisans and peasant farmers, for instance ; Marx calls it " einfache Warenproduktion ").[2] In a capitalist economy it requires, as Marx has shown himself in the third volume of *Das Kapital,* certain modifications due to differences in the organic composition of capital (i.e. the ratio of the capital invested in capital *goods* to the capital invested in payment of wages) in different industries. Thus the labour theory of value has no qualities which would make it, from the Marxist point of view, superior to the modern more elaborate theory of economic equilibrium.[3] It is only a more primitive form of the latter, restricted to the narrow field of pure competition and even not without its limitations in this field.[4] Further, its most relevant statement (i.e. the equality of price to average cost plus " normal " profit) is included in the modern theory of economic equilibrium. Thus the labour theory of value cannot possibly be the source of the superiority of Marxian over " bourgeois " economics in explaining the phenomena of economic *evolution.* In fact, the

[1] Cf. for instance, *Das Kapital,* vol. I, p. 132 (7th ed. Hamburg, Meissner, 1914).

[2] Cf. *Das Kapital,* vol. III, 1, p. 154 *seq.* (4th ed. Hamburg, Meissner, 1919).

[3] In the Marxian system the labour theory of values serves also to demonstrate the exploitation of the working class under Capitalism, i.e. the difference between the personal distribution of income in a capitalist economy and in an " einfache Warenproduktion " It is this deduction from the labour theory of value which makes the orthodox Marxist stick to it. But the same fact of exploitation can also be deduced without the help of the labour theory of value. Also without it, it is obvious that the personal distribution of income in a capitalist economy is different from that in an " einfache Warenproduktion " (or in a socialist economy based on equalitarian principles, in which the distribution of income would be substantially the same as in an " einfache Warenduktion "), for profit, interest and rent can obviously be the personal income of a separate class of people only in a capitalist economy. If interest is explained by the marginal productivity of capital, it is only because the workers do not own the capital they work with that interest is the personal income of a separate class of people. If interest is regarded as due to a higher valuation of present than future goods it is only because the workers do not possess the subsistence fund enabling them to wait until the commodities they produce are ready that the capitalist advancing it to the workers gets the interest as his personal income. Just as in Marx's case it is because the workers do not possess the means of production that the surplus value is pocketed by the capitalist. To make the Marxian concept of exploitation clearer by contrast it may be noticed that Pigou (*The Economics of Welfare,* 3rd ed., 1929, p. 556) and Mrs. Robinson (*The Economics of Imperfect Competition,* p. 281 *seq.*) define exploitation of the worker as occurring when he gets less than the value of the marginal physical product of his labour. This means that exploitation is defined by contrasting the distribution of income in monopolistic Capitalism and in competitive Capitalism. The middle-class character of this idea of social justice is obvious. For the Socialist the worker is exploited even if he gets the full value of the marginal product of his labour, for from the fact that interest or rent is determined by the marginal productivity of capital or land it does not follow, from the socialist point of view, that the capital- or land-owner ought to get it as his personal income. The Marxian definition of exploitation is derived from contrasting the personal distribution of income in a capitalist economy (irrespective of whether monopolistic or competitive) with that in an " einfache Warenproduktion " in which the worker owns his means of production.

[4] It is limited to the assumption that the ratio of capital goods to labour in each industry is determined by technical considerations alone, i.e. is a datum and not a variable depending on wages and the prices of capital goods. The very moment substitution between capital goods and labour is assumed to be possible the theory of marginal productivity must be introduced to determine the organic composition of capital, the knowledge of which is necessary in the Marxian system to determine the deviation of " production prices " from the respective labour values.

adherence to an antiquated form of the theory of economic equilibrium is the cause of the inferiority of Marxian economics in many fields. The superiority of Marxian economics on the problem of the evolution of Capitalism is due to the exact specification of the institutional datum which distinguishes Capitalism from "einfache Warenproduktion". It was thus that Marx was able to discover the peculiarities of the capitalist system and to establish a theory of economic evolution.

6. The shortcomings of Marxian economics due to its antiquated theory of economic equilibrium and its merits due to its possession of a theory of economic evolution both become conspicuous if the contribution of Marxian and of "bourgeois" economics to the theory of the business cycle are considered. Neither of them can give a complete solution of the problem.

That Marxian economics fails is due to the labour theory of value, which can explain prices only as equilibrium prices (i.e. "natural prices" in the terminology of Ricardo). Deviations of actual from "natural prices" are more or less accidental and the labour theory has nothing definite to say about them. But the central problem of business cycle theory is one of deviation from equilibrium—of the causes, the course and the effect of such deviation. Here the labour theory of value inevitably fails. The inability of Marxian economics to solve the problem of the business cycle is demonstrated by the considerable Marxist literature concerned with the famous reproduction schemes of the second volume of *Das Kapital*. This whole literature tries to solve the fundamental problems of economic equilibrium and disequilibrium without even attempting to make use of the mathematical concept of functional relationship.

But on the other hand, "bourgeois" economics has also failed to establish a consistent theory of business cycles. It has done an exceedingly good job in working out a number of details of the greatest importance for a theory of business cycles, such as studying the effects of the different elasticities of the legamina in our economic system. And it has elucidated in a manner hitherto unprecedented the rôle of money and credit in the business cycle. But it has not been able to formulate a complete theory of business cycles. This inability is a direct consequence of its being only a static theory of equilibrium and of adjustment processes. Such a theory can analyse why, if a disturbance of equilibrium has occurred, certain adjustment processes necessarily follow. It can also analyse the nature of the adjustment processes following a given change of data. But it cannot explain why such disturbances recur regularly, for this is only possible with a theory of economic evolution. Thus the modern theory of economic equilibrium can show that a boom started by an inflationary credit expansion must lead to a breakdown and a process of liquidation. But the real problem is to explain why such credit inflations occur again and again, being inherent in the very nature of the capitalist system. Similarly with the case of technical innovations as a cause of the business cycle. In a theory of economic evolution the business cycle would prove to be the form in which economic evolution takes place in capitalist society.[1]

[1] This character of the business cycle as the specific form of economic development under Capitalism has been stated very clearly by Schumpeter.

Only by a theory of economic evolution can the "necessary" recurrence of a constellation of data leading to a constantly recurring business cycle be explained. A mere theory of economic equilibrium which considers the problem of change of data to be outside its scope can tackle the problem of the business cycle only in two ways: (1) either by seeking the regularity of the recurrence of business cycles in a regularity of changes of data resulting from forces outside the economic process as, for instance, meteorological cycles or successive waves of optimism or pessimism, or (2) by denying the existence of a regularly recurrent business cycle and regarding business fluctuations as due to changes of data which are, from the economic theorist's point of view, "accidental" and hence the concern rather of the economic historian. In the latter case the scope of economic theory would be limited to explaining each business fluctuation separately, as a unique historical phenomenon, by applying the principles of the theory of economic equilibrium to the factual material collected by the economic historian.[1]

7. I have stressed the point that the distinguishing feature of Marxian economics is the precise specification of an institutional datum by which Marx defines Capitalism as opposed to an "einfache Warenproduktion", i.e. an exchange economy consisting of small independent producers each of whom possesses his own means of production. The institutional datum, which is the corner-stone of the Marxian analysis of Capitalism, is the division of the population into two parts, one of which owns the means of production while the other owns only labour power. It is obvious that only through this institutional datum can profit and interest appear as a form of income separate from wages. I believe that nobody denies the important sociological bearing of this institutional datum. However, the question arises whether this institutional datum which is the basis of the Marxian definition of Capitalism has any bearing on economic theory. Most of modern economic theory is based on the tacit assumption or even flat denial that any such bearing exists. It is generally assumed that, however important the concept of Capitalism (as distinct from a mere exchange economy), may be for sociology and economic history, it is unnecessary for economic theory, because the nature of the economic process in the capitalist system is not substantially different from the nature of the economic process in any type of exchange economy.

This argument is perfectly right in so far as the theory of economic equilibrium is concerned. The formal principles of the theory of economic equilibrium are the same for any type of exchange economy. The system of Walrasian equations is applicable indiscriminately to a capitalist economy or to an "einfache Warenproduktion". Whether the persons who own the productive services of labour and capital (labour power and the means of production in the Marxian terminology) are the same or not affects, of course, the concrete results of the economic equilibrium process, but not its formal theoretical aspect. But the same is true of the formulation of the theory of economic equilibrium which was used by Marx, i.e. of the labour theory of value. This theory, too, applies indiscriminately to any type of exchange

[1] This point of view has been argued very ably by Friedrich Lutz, *Das Konjunkturproblem in der Nationaloekonomie*, Jena 1932.

economy, provided only that there is pure competition. It was argued repeatedly by Marx himself that the " law of value " by which equilibrium asserts itself in an exchange economy based on the division of labour holds for any type of exchange economy, whether capitalistic or an " einfache Warenproduktion ". Even more, Marx develops his theory of value first for an " einfache Warenproduktion " later showing the (unessential from his point of view) slight modification it must undergo if applied to a capitalist economy. Thus the institutional basis of capitalist society has no essential significance for the general theory of economic equilibrium. In so far, the prevailing opinion of economists is right. The whole significance of this datum is in terms of a sociological interpretation of the economic equilibrium process.

However, the institutional datum underlying the Marxian analysis of capitalism becomes of fundamental significance where the theory of economic evolution is concerned. A theory of economic evolution can be established only on very definite assumptions concerning the institutional framework in which the economic process goes on. The instability of the technique of production which is the basis of the Marxian[1] theory of economic evolution can be shown to be inevitable only under very specific institutional data. It is clear that it could not be shown to exist in a feudal society, or even in an " einfache Warenproduktion ". Of course, a certain amount of technical progress exists in any type of human society, but only under Capitalism can it be shown to be the necessary condition for the maintenance of the system.

8. The necessity of technical progress[2] for the maintenance of the capitalist system is deduced in Marxian economics by showing that only in a progressive economy can capitalist profit and interest exist.

The profit of the capitalist entrepreneur, from which also interest on capital is derived, is explained by Marx to be due to the difference between the value of the worker's labour power and the value of the product created by the worker. Now, according to the labour theory of value, the value of labour power is determined by its cost of reproduction. As in any civilised society a worker is able to produce more than he needs for his subsistence he creates a surplus which is the basis of his employer's profit. However, the crucial point in the Marxian theory is the application of the labour theory of value to the determination of wages. If the market price of cotton cloth exceeds its " natural price " capital and labour flow into the cotton cloth industry until, through increase of the supply of cotton cloth, its market price conforms to the " natural price ". But this equilibrating mechanism, which is the foundation of labour theory of value, cannot be applied to the labour market. If wages rise above the " natural price " of labour power so as to threaten to annihilate the employers' profits, there is no possibility of transferring capital and labour from other industries to the production of a larger supply of labour power. In this respect labour power differs fundamentally from other commodities. Therefore, in order to show that wages cannot exceed a certain maximum and thus annihilate profits a principle different from the ordinary

[1] And also of Schumpeter's.

[2] By technical progress I mean here not only technical improvements in the narrow meaning of the word, but also improvements in organisation, etc., i.e. any innovation increasing the efficiency of the optimum combination of factors of production.

mechanism making market prices tend towards "natural prices" must be introduced.

The classical economists found such a principle in the theory of population. They taught that the pressure of the reproductive instincts of the population on the means of subsistence reacts on any increase of wages above the "natural price" of labour power to such an extent as to counteract effectively the increase of wages. Ricardo says explicitly[1]: "However much the market price of labour may deviate from its natural price, it has, like commodities, a tendency to conform to it. . . . When the market price of labour exceeds its natural price, . . . by the encouragement which high wages give to the increase of population, the number of labourers is increased, wages again fall to their natural price." Thus the working class is assumed to be in a vicious circle which it cannot transcend. Marx rejected the Malthusian theory of population[2], contending that even without such reproductive facilities wages could not rise so as to annihilate profits. For Capitalism creates, according to Marx, its own surplus population (industrial reserve army) through technical progress, replacing workers by machines. The existence of the surplus population created by technical progress prevents wages from rising so as to swallow profits. Thus technical progress is necessary to maintain the capitalist system[3] and the dynamic nature of the capitalist system, which explains the constant increase of the organic composition of capital, is established.

That the labour theory of value is not necessary for this argument is easily seen, for its application to the labour market is a purely formal one, since the equilibrating mechanism which is at the basis of this theory does not work on the labour market. It is technical progress (or the "law of population" in the case of the classical economists) which prevents wages from swallowing profits.

We can now see in what sense Marxian economics deduces from theoretical considerations the "necessity" of economic evolution. Of course, the necessity of the fact that labour-saving technical innovations are always available at the right moment cannot be deduced by economic theory and in this sense the "necessity" of economic evolution cannot be proved. But Marxian economics does not attempt to prove this. All it establishes is that the capitalist system cannot maintain itself without such innovations. And this proof is given by an economic theory which shows that profit and interest on capital can exist only on account of the instability of a certain datum, i.e.

[1] *Principles*, Chap. V, p. 71 (of Gonner's ed. 1929).

[2] *Das Kapital*, I, chap. XXIII.

[3] Marx himself did not see clearly that in his theoretical system the virtual existence of a surplus population created by technical progress is necessary for the maintenance of the capitalist system. He applied the labour theory of value to the labour market without being aware that the equilibrating mechanism at the basis of this theory does not work in respect to labour power. But his theory of surplus population which he opposed to the Malthusian theory allows us to complete Marx's argument so as to bridge the gap in his system. It may be mentioned that a proletarian surplus population can also be created through driving out of small independent producers (for instance, artisans and peasants) from the market through the competition of capitalist industry. This source of surplus population was very important in the early history of Capitalism. So long as such a source of surplus population exists the capitalist system might exist, in theory, even without technical progress other than the dynamic process inherent in the destruction of pre-capitalist systems.

the technique of production, and that it would necessarily disappear the moment further technical progress proved impossible. The economic theory presented here is, of course, but a mere sketch of how Marx explains the evolution of Capitalism and a suggestion as to how his theory can be completed so as to bridge over the gaps he left. The modern development of economic theory, however, makes it possible to construct a far more satisfactory theory of economic evolution.

It is obvious that the necessity of economic evolution under Capitalism is entirely due to the institutional datum distinguishing Capitalism from an " einfache Warenproduktion " and that it would not exist in the latter form of exchange economy. Therefore, " bourgeois " economics, omitting to specify exactly the institutional datum of Capitalism, is unable to establish a theory of economic evolution, for such a theory cannot be evolved from the very broad assumptions of exchange economy in general. From our account of the Marxian theory of economic evolution, it becomes evident that the necessity of economic evolution does not result from the exchange and pricing process as such, but from the special institutional set-up under which this process goes on in a Capitalist system.[1] The specification of institutional data by " bourgeois " economic theory is too broad, since it gives no more than the institutional data common to any type of exchange economy. But since this very broad specification gives results which are too general to be applicable to special problems, it usually superimposes a very narrow specification of institutional data concerning the monetary and banking system (e.g. the existence or non-existence of the gold standard, whether the banking system makes an inflationary credit expansion possible or not, etc.). But between the first specification of institutional data which is very broad and the second specification which is very narrow there is a gap : the institutional datum distinguishing Capitalism from an " einfache Warenproduktion ". And this is precisely the datum which is of fundamental significance for the theory of economic evolution.

9. Through the exact specification of the institutional framework of capitalist economy, Marxian economics is able to establish a theory of economic evolution in which certain data evolve " from within " the economic system. But not all changes of data are explained in this way by the Marxian theory. The evolution of certain data resulting from the very mechanism of the economic system influences certain extra-economic factors such as the policy of the state, political and social ideas, etc., which, reacting back on the economic system, change other of its data. This consideration supplies the explanation of the transition from *laissez-faire* to state interventionism and from free trade to protectionism and economic nationalism, the emergence of imperialist rivalries, etc. The causal chain through which the evolution of certain economic data influences certain extra-economic factors and the reaction of these factors back on the data of the economic system is, however, not within the subject-matter of economics. It belongs to the theory of historical materialism the object of which is to elucidate the causal chains connecting economic

[1] Similarly Schumpeter's theory of economic evolution is based on very definite institutional data and does not hold for any type of exchange economy.

evolution with social evolution as a whole. Therefore, the full evolution of Capitalism in all its concreteness cannot be explained by a theory of economic evolution alone. It can be explained only by a joint use of both economic theory and the theory of historical materialism. The latter is an inseparable part of the Marxian analysis of Capitalism.

10. Our results may be summarised as follows :

(1) The superiority of Marxian economics in analysing Capitalism is not due to the economic concepts used by Marx (the labour theory of value), but to the exact specification of the institutional datum distinguishing Capitalism from the concept of an exchange economy in general.

(2) The specification of this institutional datum allows of the establishment of a theory of economic evolution from which a " necessary " trend of certain data in the capitalist system can be deduced.

(3) Jointly with the theory of historical materialism this theory of economic evolution accounts for the actual changes occurring in the capitalist system and forms a basis for anticipating the future.

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