

## Chapter Four

## MARX'S THEORY OF CAPITALIST BREAKDOWN

I. The Theory of Economic Evolution

Marx's theory of capitalist breakdown is the threefold product of his historical method, his economic theory and his sociology. The materialist conception of history, the theory of value, and the theory of the class struggle alike point to the breakdown of the capitalist system and to its replacement by socialism. The Marxian theory of economic evolution, while not the first of its kind, as is sometimes suggested, nevertheless breaks decisively with the unhistorical tradition of classical political economy.

Both Smith and Ricardo see possibilities of change within capitalist development. Both distinguish between the backward, primitive, hunting stage and the advanced, capital-accumulating stage of the same capitalist system; but this distinction marks only periods of development of the capitalist system, regarded as the eternal, natural form of production. In this conception, capitalism may change over time; but it is never born, and never dies.

A. The Concept of Evolution before Marx

The evolutionary approach to economics, the concept of transition from one economic system to another, as well as of change within a given system, is most closely identified with the work of Marx. Yet Marx was preceded by a series of writers who dissented

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1. Smith, Wealth of Nations, Bk. I, Ch. 1; Ricardo, Principles, Ch. 5.

from the unhistorical approach of classical tradition. The ground-work in the historical method in the study of social institutions has been linked to the French Revolution and to the Industrial Revolution in England.<sup>2</sup>

In France, this approach grew out of the work of Condorcet (1743-94), who developed the theory of stages of historical development, and the concept of history as being of the masses rather than of individuals; of Saint-Simon (1760-1825), who stressed natural laws of historical development, and the economic foundation and class relations as distinguishing features of different historical epochs; and of Sismondi (1773-1842), who preceded Marx with the doctrines of economic progress, and of historical development as the development of the forces of production.<sup>3</sup>

In England, the evolutionary approach to economists appears in the work of Sir James Steuart (1712-80), whose historical investigations linked political and social changes with economic development; and of the Reverend Richard Jones (1790-1885), who developed the concepts of the necessary sequence of transitory stages of economic development, of the historical character of all economic laws, and of the historically determining role of the economic structure.<sup>4</sup>

2. Henryk Grossman, "The Evolutionist Revolt against Classical Economics. I. In France -- Condorcet, Saint-Simon, Simonde de Sismondi," Journal of Political Economy, Vol. II, No. 5, (October 1943), 384.

3. Ibid., I, 386-96.

4. Ibid., II. "In England -- James Steuart, Richard Jones, Karl Marx," Journal of Political Economy, Vol. II, No. 6, (December 1943), 507-15. Marx praises Jones especially for his being the first English economist since Steuart with a "sense for the historical differences in forms of production." (Theorien über den Mehrwert, III, 450.)

### B. The Marxian Theory of Evolution

Marx develops the concepts of evolution, and of economic forms as historical stages of development, which had been already worked out by his predecessors, synthesizes them with elements of the dialectical method of Hegel and his own historical and economic theories, to present a new theory of economic evolution. With Hegel as opposed to the earlier economists, he views each economic form as a necessary, changing, cultural whole, rather than as a stage in the development of a series of accidental particular phenomena. With the earlier economists, however, as opposed to Hegel, he views economic development as the evolution of real history, rather than as the logical development of an idea.<sup>5</sup>

Marx's special contribution is that his theory of evolution is based on theoretical analysis rather than on historical analogy. His theory of evolution includes these three elements: (1) the general theory of historical change, based on the materialist conception of history, which explains the transition from one economy to another; (2) the theory of the developmental tendencies of capitalism as a specific, historical form of production; (3) the theory of the subjective tendencies of change, which explains the impact of objective change on subjective consciousness, and the consequent class struggle which is the social mechanism of transition from one economy to another.<sup>6</sup>

5. Grossman links these two concepts to the two meanings of the German term, entwicklung -- development, and evolution (loc. cit., 514-5).

6. Ibid., 518-622; cf. Karl Korsch, Karl Marx (London, 1938), 22 ff.

### 1. The Materialistic Conception of History.

The materialist conception of history is the one theory Marx holds to be universally valid for all antagonistic societies, which he roughly designates as the Asiatic, the ancient, the feudal, and the capitalist societies.<sup>7</sup> The simplest formulation of this theory appears in the Preface to the Critique as follows:

In the social production which men carry on they enter into definite relations that are indispensable and independent of their will; these relations of production correspond to a definite stage of development of their material powers of production. The sum total of these relations of production constitutes the economic structure of society -- the real foundation, on which rise legal and political superstructures and to which correspond definite forms of social consciousness. The mode of production in material life determines the general character of the social, political and spiritual processes of life. It is not the consciousness of men that determines their existence, but, on the contrary, their social existence determines their consciousness. At a certain stage of their development, the material forces of production in society come in conflict with the existing relations of production, or -- what is but a legal expression for the same thing -- with the property relations within which they had been at work before. From forms of development of the forces of production these relations turn into their fetters. Then comes the period of social revolution. With the change of the economic foundation the entire immense superstructure is more or less rapidly transformed.<sup>8</sup>

But the transformation of social orders is possible only under specific conditions.

No social order ever disappears before all the productive forces, for which there is room in it, have been developed; and new higher relations of production never appear before the material conditions of their existence have matured in the womb of the old society. Therefore, mankind always takes up only such problems as it can solve; since, looking at the matter more closely, we will always find that the problem itself arises only when the material conditions necessary for its solution already exist or are at least in the process of formation.<sup>9</sup>

7. Preface to the Critique of Political Economy, 13.

8. Ibid., 11-12.

9. Ibid., 12-13.

According to the materialist conception of history, each epoch is inevitably characterized by a conflict between the forces of production and the relations of production. Gradual changes in the forces of production, that is, the development of the material, technological bases of the economy, eventually disrupt the existing social (productive) relations. The result is social revolution and a new form of economic organization.

## 2. The Development of Capitalism as a Specific Historical Form of Production

Capitalist production, as a specific, historical form of production, is subject to this conflict between the forces of production (which determine the production of use values) and the relations of production (which determine the realization of exchange value). Its evolution and necessary decline must be explained by its specific, historical, economic law, the law of value. This law expresses the antagonism between the development of productivity as the material means, and the realization of surplus value as the social goal, of capitalist production. Yet the breakdown of capitalism must be explained by more specific argument than that of the necessary "contradictions of capitalism". Such contradictions always exist within capitalist production. The essential cause of breakdown at a given stage of development is the overaccumulation of increasingly less profitable capital. The derivation of the tendency to breakdown from the dynamics of capitalist development is the centerpiece of Marx's economic analysis. This is the specific analysis which alone can prove the necessity of socialism, and to which we shall devote

the following chapters.

### 3. The Theory of the Class Struggle

The objectively determined tendency to breakdown, deduced from the operation of the law of value, remains only a tendency in reality, until the objective conditions of economic transformation give rise to the subjective will to revolution. Capitalism may decline, but it does not collapse automatically. It is overthrown politically and replaced by a new form of production in the last stage of the class struggle. Yet this subjective struggle is directly engendered by the antagonistic relations of capitalist production. In this theory the active participation of the working class (together with the growing paralysis of the capitalist system) radically transforms this declining economic system. While the conflict between the forces of production and the relations of production is the objective lever of history, the class struggle is the subjective lever.

## II. The Law of Value and the Tendency to Breakdown

The most controversial element in Marxian economic theory is the fundamental conclusion, the theory of capitalist breakdown. There is a vast literature of Marxian "breakdown theory" and "crisis theory", but neither proponents nor opponents of Marxian theory agree as to the meaning of the concept of breakdown, or the essential cause of the breakdown. Marx himself explicitly asserts the inevitability of breakdown in many different passages. In one discussion of the accumulation process he observes flatly that "This process would soon

bring about the collapse of capitalist production, if it were not for counteracting tendencies, which continually have a decentralizing effect by the side of the centripetal ones."<sup>10</sup> Engels expresses Marx's view most succinctly when he says of the capitalist form of production, "this mode of production, through its own development, drives towards the point at which it makes itself impossible."<sup>11</sup>

The accumulation process through its own inherent logic necessarily reaches a point at which it breaks down. But because Marx does not develop the theory of breakdown systematically and in detail, the argument continues to this day as to the meaning of breakdown, and the course it takes. To make any headway with this theory it is necessary first to define the concept of breakdown and to state the requirements and components of an adequate theory of breakdown.

#### A. The Requirements and Components of the Theory of Breakdown

In examining Marx's theory of breakdown, as it appears in his own work, and especially as it has been interpreted -- in most cases incorrectly -- the essential requirements of a theory of breakdown must be borne in mind. (1) The theory must be strictly endogenous. Moreover, it must be derived not only from the action of internal economic variables, but from variables specific to the capitalist economy. In short, the theory of capitalist breakdown must be deduced in full from the operation of the law of value. Further, the theory must demonstrate exactly the specific mechanisms by which the breakdown,

10. Capital, III, 289.

11. Frederick Engels, Herr Eugen Dühring's Revolution in Science [Anti-Dühring] (Leningrad, 1934), 171.

tendency is asserted and counteracted by the operation of the law of value. (2) The theory of breakdown must be a single, unified explanation of the fundamental tendencies of capitalist development. This means that one theory must explain both the characteristic form of capitalist development, the business cycle, and the long-run tendency to breakdown.

The complete theory of breakdown proceeds by dialectical development from abstract to concrete. On the highest level of abstraction it deduces the tendency to breakdown, by successive stages of analysis, from the law of value. On the next level of abstraction, it explains, from the breakdown tendency and the counter-tendencies to breakdown, the laws of cyclical development. On the lowest level of abstraction, it explains the forms and phases of the cycle. The breakdown theory thus provides at once: a theory of evolution, a theory of cycles, and a description of crises. In the logical development of breakdown theory, each element of explanation is successively added to, and enriched by, the preceding one. Within the complete theory, however, as an explanation of the laws which govern the capitalist system, and of the operation of these laws, the three elements are logically inseparable.

As a theory of evolution, the breakdown theory explains the development of the accumulation process and its necessary limits. On this abstract level of analysis, the capitalist form of production expands so far and then collapses through its own inner laws.

As a theory of cycles, the breakdown theory demonstrates why the limits of accumulation do not necessitate an immediate and



final collapse. While the theory of evolution is the logical basis of the theory of cycles, the theory of cycles demonstrates, in turn, the cyclical pattern of evolution. And while the theory of cycles explains the operation of the countertendencies as well as the tendency to breakdown, the theory of evolution explains the exhaustion of the countertendencies and the eventual end of cyclical development.

As a descriptive analysis of the forms and phases of the cycle, the theory of breakdown is, finally, an explanation of the crisis. The crisis is merely one phase of the cycle, and can be explained only in terms of the laws of cyclical development. These laws, in turn, can be expressed only through movements in the concrete phenomena of economic reality.

The logical relations between the trend, or evolutionary tendency, the cycle, and the crisis, have escaped most economists. As a result the problem of the business cycle, despite its central position in economic analysis, has rarely been posed correctly. The errors in methodology have given rise to two incorrect assumptions which create a host of spurious problems: (1) the assumption that cyclical development is a form of movement imposed on an otherwise smooth evolutionary trend, a movement to be explained by factors independent of those which explain the trend; (2) the assumption that the phenomenon to be explained is the crisis.

These assumptions flow from a definite theory of capitalist evolution, which Schumpeter calls the "Marshall-Moore theory of

organic growth."<sup>12</sup> According to this theory, the logical development of the capitalist system is essentially cycleless. Although the historical development of the system is marked by recurrent crises, caused by a variety of disturbing factors, these, even if endogenous, are held to be capable of correction and elimination. These crises are merely "pathological incidents in a physiological process."<sup>13</sup> Thus the 19th century theories of the cycle are typically explanations of the crisis.<sup>14</sup>

Since the latter part of the 19th century, the cycle has been gradually superseded by the crisis as the object of investigation (although, surprisingly, in view of Marx's emphasis that the crisis is only one phase of the inherently cyclical movement, some Marxian writers to this day pose the problem as one of crisis theory, rather than of cycle theory). Yet with few exceptions, notably that of Professor Schumpeter, who agrees with Marx that the trend is nothing more than the path traced out by the cycles, the old view that cycles are a form of movement to be explained by other "causes" than the

12. J. A. Schumpeter, Business Cycles (New York, 1939), I, 203.

13. Ibid., 162.

14. Ibid., 162-3. Schumpeter attributes to Clement Juglar the first formulation of the problem in terms of cycles, rather than of crises, in 1860, in his Des crises commerciales et leur retour periodique en France, en Angleterre, et aux Etats-Unis. However, already in 1847, in his Poverty of Philosophy, a critique of the doctrines of Proudhon, Marx asserts that, "With the birth of large scale industry. . . production is compelled to pass inevitably in continuous succession through vicissitudes of prosperity, depression, crises, stagnation, renewed prosperity and so on." (International Publishers, New York, no date, 59.)

forces determining the secular trend still prevails. The traditional method of time series decomposition, in which the cycles are "smoothed" away to reveal the underlying trend, rests on the erroneous preconception of the normally smooth progress of capitalist evolution.<sup>15</sup>

In the Marxian system, there is no distinction between the factors which determine the cycle and the evolutionary trend. The trend does not exist independently of the cyclical process. It is simply the historical path of cyclical development. We observe the cycle as a function of the trend, while the trend is logically determined by the cycle.

Only when the logical relations between trend, cycle, and crisis are established, is it possible to reconstruct a full theory of breakdown from the Marxian system. Marx does not explicitly develop these relations, or present his breakdown theory systematically in these terms. Instead, his analysis of the laws of capitalist evolution is mixed up with description of the cycle. Often Marx speaks only of the "cause of the crisis" when he refers to the general tendencies to breakdown, which determine the cycle, and therefore, its crisis phase.

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15. An exception is Frickey's method of time series decomposition, which does not start by separating the trend from the cycle, but proceeds explicitly from the correct assumption that the problem of secular trend is one of economic theory, not of mathematical curve fitting, or of statistical or historical description. (Edwin Frickey, Economic Fluctuations in the United States, Cambridge, 1942, Ch. 1.)

breakdown theory, and the common misunderstandings of his method, as well as of the logical requirements of any cycle or breakdown theory, have led to a series of interpretations of Marx's "breakdown theory", or "cycle theory", or "crisis theory", which are, in general, logically unsatisfactory. The levels of abstraction on which the elements of the theory belong, are generally confused, if the problem of abstraction is recognized at all, and the analysis is incomplete. Most Marxian writers implicitly follow the traditional but incorrect assumption that the crisis is some exceptional phenomenon in economic life. Thus they seek a special theory of crisis in Marx, which is presumably distinct from the main body of his theoretical analysis.

A common view is that Marx's lack of systematic treatment of the cycle is due to the fact that as he says himself, "the real crisis can be explained only from the real movement of capitalist production and credit."<sup>16</sup> According to this view, "the crisis as a complex, concrete phenomenon could not be fully analyzed on the levels of abstraction to which Capital is confined."<sup>17</sup> Thus the theory of cycles, which here, as is typical in Marxian literature, is identified with the explanation of crises, remains the unfinished chapter in Marx. This view is incorrect. It confuses the form of the crisis with the cause of the cycle. Our view is that if Marx had lived to complete and refine his theory of capitalist development, he would have given us not only a "last chapter"

16. Theorien über den Mehrwert, II (2), 286.

17. Sweezy, The Theory of Capitalist Development, 133-4.

describing more systematically the course of the cycle, and the possible forms of the crisis, but, more important, a revamping of his work, in accordance with his own methodology, in which the cause of the cycle is systematically treated in the "first chapter." If we accept the proposition that the business cycle is the specific form of capitalist development, we must seek its causes on the first, not on the last stage of analysis.

In view of these considerations regarding the actual and theoretical relations of the cycle and the secular trend, any attempt to reconstruct a complete theory of breakdown from Marx's work must first deduce the tendency to breakdown, which asserts itself in the cyclical development of the capitalist economy. Our first task, therefore, is to present the steps in Marx's argument by which the operation of the law of value, which itself governs the dynamics of capitalist development, produces the tendency to breakdown. In this way, it will be seen how the theory of breakdown follows with logical necessity from the theory of value.

Before presenting this argument, however, as a means of indicating the theoretical superiority of Marx's analysis over those of classical writers, we will look briefly at the theory of capitalist evolution developed by Ricardo and John Stuart Mill.

#### B. Elements of a Theory of Breakdown before Marx

There are elements of a theory of breakdown in the theory of the stationary state developed by Ricardo and John Stuart Mill. But their theory of stagnation, although based on the falling rate of profit, "that mystery whose solution has been the goal of the

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entire political economy since Adam Smith," cannot be called a real theory of breakdown, first, because it is not derived from the theory of value, and, second, because it does not envisage the necessary abolition of the capitalist form of production.

In Ricardo, the rate of profit falls, not because of the competition of capital, as in Adam Smith's argument, but only because of the declining productivity of land, itself a result of the fact that the pressure of population requires increasingly poorer lands to be called into cultivation. This means an increase in rent, both in money and real terms, as the margin of cultivation is extended, and an increase in money wages, as the production of subsistence goods requires more labor. <sup>19</sup> The result of these tendencies is the falling rate of profit.

Thus the theory of stagnation is derived not from the theory of value, so much as <sup>from</sup> the principles of diminishing productivity of land, and from the Malthusian principle of population. Unless these principles operate, there need be no fall in the rate of profit. <sup>20</sup> And even with the operations, the fall in the rate of profit can be averted. Although Ricardo implies that, ultimately,

18. Capital, III, 250.

19. Ricardo, Principles, Ch. 6.

20. If Ricardo were consistent with his own value theory, the rate of profit would inevitably tend to fall with an increasing rate of accumulation of "fixed" relative to "circulating" capital. Although he asserts that the proportion between the two kinds of capital is altered over time, in dealing with the problem of accumulation, he assumes that the proportion remains constant.

the system will reach a stationary state, according to his own theory, technical improvements, and adaptations of the population should restore the rate of profit and the drive to accumulate. Ricardo's theory of economic evolution thus stands in contradiction to his theory of general equilibrium.

The stationary state also appears in the work of J. S. Mill, not as a pessimistic possibility, as in Ricardo, but as a cheerful prediction of the future. According to Mill, "It is scarcely necessary to remark that a stationary condition of capital and population implies no stationary state of human improvement."<sup>21</sup>

Mill starts from the Ricardian hypothesis of diminishing returns to lands, and the Malthusian population theory, and deduces a similar fall in the rate of profit. He advances four "counter-acting circumstances" which tend to thwart the falling rate of profit. These are (1) the wastes of capital in periods of over-trading and speculation; (2) improvements in production which cheapen subsistence goods; (3) foreign trade, as a means of cheapening both subsistence and production goods; (4) the export of capital seeking a higher rate of profit.<sup>22</sup>

The future economy, according to Mill, will be one of more equal distribution of wealth, shorter hours of labor, and higher level of culture. The stationary state follows not from the breakdown of capitalism, but from the gradual transformation of competitive capitalism into harmonious associationism.<sup>23</sup>

21. J. S. Mill, Principles of Political Economy (ed. Ashley, London, 1909), 761.

22. Ibid., 733-39.

23. Ibid., 751-64.

C. The Theory of Breakdown in Marx as the Necessary Consequence  
of the Labor Theory of Value

The theory of the falling rate of profit is the element which connects pre-Marxian theories of capitalist development with the Marxian theory of breakdown. But, as we have just seen, the classical economists, like Ricardo, who regard the capitalist form of production as given for all time, find the explanation not within capitalist production itself, but within Nature. Marx's explanation is that capitalist production, whose very incentive is profit, through its own laws inexorably tends to reduce the rate of profit. While the falling rate of profit is central to Marx's theory of breakdown, as we shall see later, this falling rate is only an index of the decline of capitalism, a decline which can be determined only by movements in the mass of profit.

The distinguishing feature of Marx's theory of breakdown is that it is systematically deduced from his theory of value. It must be remembered that this theory of capitalist breakdown is not a blueprint of economic and social collapse. It is not a description of reality, but a theoretical conclusion derived from the Marxian model of pure capitalism. The dynamics of development within this model lead necessarily to breakdown.

The practical value of any conclusions derived from a theoretical model depends, naturally, on the extent to which the model crystallizes the essential relations of the capitalist economy. Moreover, even the best model, which can only clarify fundamental tendencies, must be modified successively to approximate capitalist reality.



Marx's initial model, as a first approximation, pictures a pure capitalist economy. The essential features of this economy are the following:

- (1) It is a closed economy.
- (2) All commodities, including labor power, are exchanged at their values.
- (3) There are only two classes, workers and capitalists.
- (4) All capital is industrial capital; therefore there is no rent, interest, or commercial profit.
- (5) There are only two spheres of production, means of production and means of consumption.
- (6) The period of turnover of capital is everywhere equal and remains constant.

Marx's theory of the breakdown of this pure capitalist economy involves a series of steps by which the breakdown tendency is deduced from the law of value. The successive steps in the development of the argument are the following:

- (1) The labor theory of value
- (2) The theory of surplus value
- (3) The accumulation process
- (4) The rising organic composition
- (5) The concentration and centralization of capital
- (6) The industrial reserve army
- (7) The falling tendency of the rate of profit
- (8) Overaccumulation of capital, with reference to the mass of profits, and consequent breakdown.

### 1. The Labor Theory of Value

The first step in Marx's argument, the labor theory of value has already been developed. It simply states that in competitive equilibrium, as a first approximation, the exchange ratios of commodities equal the ratios of the labor-time expended in the production of these commodities.

### 2. The Theory of Surplus Value

The theory of surplus value is a logical consequence of the labor theory of value. For since labor is the source of value, yet, according to the law of value, is paid a wage equal to the value of labor power (subsistence), the value created in addition to the value of subsistence must constitute an unpaid surplus value, which is appropriated by the capitalist. The law of value, which is based on an equal exchange between labor power and its wage, directly creates an unequal exchange between labor power and its product.

The exchange of equivalents, the original operation with which we started, has now become turned round in such a way that there is only an apparent exchange. This is owing to the fact, first, that the capital which is exchanged for labor power is itself but a portion of the product of others' labor appropriated without an equivalent; and, secondly, that this capital must not only be replaced by its producer, but replaced together with an added surplus.<sup>24</sup>

The particular use value of the commodity, labor power, its capacity to produce a surplus value, constitutes the very basis of capitalist production. For the purpose of capitalist production is not the production of use values, but the production of surplus value. Within capitalist production as a labor process, producing

<sup>24</sup> Capital, I, 639.

use values, the worker uses means of production, which he transforms into use values embodying<sup>a</sup> surplus product. But within the value-creating process, says Marx,

It is now no longer the laborer that employs the means of production, but the means of production that employ the laborer. Instead of being consumed by him as material elements of his productive activity, they consume him as the ferment necessary to their own life process, and the life process of capital consists only in its movement as value constantly expanding, constantly multiplying itself.<sup>25</sup>

Marx warns his readers further that:

"It must never be forgotten, that the production of this surplus value -- and the reconversion of a portion of it into capital, or accumulation, forms an indispensable part of this production of surplus value -- is the immediate purpose and the compelling motive of capitalist production."<sup>26</sup>

Given the value of labor power, the mass of surplus value produced by a given magnitude of capital is a function of the number of workers employed and the rate of surplus value. This rate,  $s/v$ , the rate of exploitation, or ratio of surplus (unpaid) to necessary (paid) labor, is a function of (1) the level of wages (value of subsistence), (2) the length of the working day and its division between necessary and surplus labor time, and (3) the intensity of labor. The rate of surplus value varies inversely to wages, directly with the length of the working day and the intensity of labor. The capitalist mechanism ever strives to increase the rate of surplus value in two ways: (1) by increasing the unpaid portion of labor time by an extension of the working day; this means an increase in absolute surplus value; (2) by reducing the value of

25. Ibid., I, 339.

26. Ibid., III, 286.

labor power by productivity or the intensity of labor; this means an increase in the ratio of surplus to necessary labor and thus in <sup>27</sup>  
relative surplus value.

### 3. The Accumulation Process

The capitalist process inexorably requires the accumulation of as large a part as possible of its surplus value. Without accumulation, competition among capitalists would wipe out the surplus which is the very purpose of production. Capitalists must therefore accumulate their surplus value or perish.

Moreover, the development of capitalist production makes it constantly necessary to keep increasing the amount of the capital laid out in a given industrial undertaking, and competition makes the immanent laws of capitalist production to be felt by each individual capitalist, as external coercive laws. It compels him to keep constantly extending his capital in order to preserve it, but extend it he cannot, except by means of progressive accumulation. <sup>28</sup>

"Accumulate, accumulate! That is Moses and the prophets!" <sup>29</sup>

But the capitalist passion for wealth as wealth is not the idiosyncrasy of the miser, but the effect of the capitalist mechanism itself. The

27. Ibid., I, 345. The theory of surplus value, the real heart of the Marxian theory of value, occupies about half of Volume I of Capital. The long historical and descriptive passages on the labor process, the struggle for a normal working day, and the technological changes in industry, form the historical and statistical complement to the theoretical analysis of absolute and relative surplus value. Again in the Theorien über den Mehrwert Marx analyzes the rate of surplus value and the differences between absolute and relative surplus value. (II (1), 123-150.) He also examines in detail the effect of changes in the proportion of the variable capital to the total, due either to changes in wages, or to the number of workers, on the mass and rate of surplus value. (II (2)(Appendix), 218-32.)

28. Capital, I, 649.

29. Ibid., I, 652.

capitalist himself is only "personified capital,"<sup>30</sup> whose historical mission is production for production's sake. In his drive for surplus value he constantly increases society's wealth and productive power.

But there are natural limits to the production and accumulation of surplus value. These are: (1) the maximum length of the working day, (2) the level of productivity, and (3) the available supplies of natural resources and labor power. The accumulation process, as a process for the production of surplus value, is limited by the material conditions of the labor process. This appears most evident when, as the demand exceeds the supply of labor power, wages begin to rise above their values. This means a decrease in the unpaid portion of the total working day and thus in the mass and rate of surplus value. But this never reaches the point where it might threaten the system itself. Marx says that

a rise in the price of labor resulting from accumulation capital implies the following alternative:

Either the price of labor keeps on rising because its rise does not interfere with the progress of accumulation. . . . Or, on the other hand, accumulation slackens in consequence of the rise in the price of labor, because the stimulus of gain is blunted. The rate of accumulation lessens; but with its lessening, the primary cause of that lessening vanishes, i. e., the disproportion between capital and exploitable labor power. The mechanism of the process of capitalist production removes the very obstacles that it temporarily creates.<sup>31</sup>

Thus, assuming a constant level of productivity, rising wages can be checked only by a fall in the rate of accumulation.

30. Ibid., I, 649.

31. Ibid., I, 678-679.

#### 4. The Rising Organic Composition of Capital

In demonstrating a conflict between the drive to accumulate and the rise of wages incident to accumulation, Marx assumes that this accumulation is based on a constant technique, and a constant organic composition of capital. But this is only a provisional assumption, methodologically valid as a means of investigating its results. Marx points out that the theory that wages must rise in consequence of an increase in accumulation is only "the dogma of the economists" (Smith, Ricardo, and others), based on the assumption that population adapts to accumulation with a lag, and that accumulation is always on the same technological basis.

However, the logical and historical tendency within capitalist production is toward a steadily rising organic composition of capital, a more rapid growth of constant as compared with variable capital. Any discussion of the organic composition of capital must keep clear the twofold meaning of this term. Marx explains it as follows:

On the side of value, it is determined by the proportion in which it is divided into constant capital, or value of the means of production, and variable capital, or value of labor power. On the side of material, as it functions in the process of production, all capital is divided into means of production and living labor power.<sup>32</sup>

The proportion of means of production to living labor power is the technical composition of capital; the proportion of constant to variable capital is the value composition. The "value composition, in so far as it is determined by its technical composition and

32. Ibid., I, 699.

33. Ibid., I, 671.

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mirrors changes in the latter, . . . ." is the organic composition of capital.

The value composition never exactly reflects the technical composition. As Marx points out:

The reason is simply that, with the increasing productivity of labor, not only does the mass of the means of production consumed by its increase, but their value compared with their mass diminishes. Their value therefore rises absolutely, but not in proportion to their mass. The increase of the difference between constant and variable capital is, therefore, much less than that of the difference between the mass of the means of production into which the constant, and the mass of the labor power into which the the variable, capital is converted. The former difference increases with the latter, but in a smaller degree.<sup>35</sup>

The increase in the technical composition, and therefore, in the organic composition of capital, is characteristic of the accumulation process, a result of the capitalist drive for profits. The substitution of material means of production for labor power has two motives. The first is to check the rise of wages incident to accumulation on the basis of a given technique. The second is the attempt by some entrepreneurs to realize short-run extra profits, i. e., profits above the average, by the use of improved methods of production before these new methods are generally known.

Competition among capitalists for labor power, together with workers' demands, is responsible for rising wages, and gives rise to the first form of substitution of machines for men. Competition among capitalists for the market gives rise to the second form of substitution.

34. Ibid., I, 671.

35. Ibid., I, 683.

The increase in the technical and, therefore, in the organic composition of capital involves two kinds of changes in the production function. <sup>36</sup> The first case is the simple substitution of machinery for labor power within the same production function, as a result of changes in the price ratios of the factors of production following a rise in wages. The second case is one of substitution within a new production function, in response to technological change, which makes possible the realization of extra profits. The Marxian short-run "extra profits" accruing to firms whose costs are lowered, but whose prices remain the same, are the same as Marshall's quasi-rents and Schumpeter's profits of innovation. The extra profits disappear as other firms adopt the improved techniques and costs are lowered for the entire industry. With uniformity of costs re-established, the capitalist mechanism itself induces innovations, or changes within the production functions, which yield new surplus profits.

These two cases are logically distinct, yet in reality <sup>37</sup> they operate simultaneously. In logical analysis the case of an

36. These two cases are discussed by Wassily Leontief in "The Significance of Marxian Economics for Present-Day Economic Theory," American Economic Review, Vol. XXVIII, No. 1, Supplement, (March 1938), 7-8.

37. Leontief asserts that in Marx the first case, that of change within a given production function, is implied. This assertion is true only with reference to the analysis developed in the first volume of Capital. The analysis in the third volume, which deals with the rising organic composition as the typical tendency of capitalist production, and the cause both of the reserve army of labor, and the ever-increasing development of the productive forces, indicate that for Marx the second case is typical of capitalist production.



increase in the organic composition of capital within the same production function, in response to rising wages, appears first as the simplest case. In reality, the second case of increase of the organic composition within ever-changing production functions is the more typical case of capitalist development.

The rise in the organic composition of capital is the basis of rising productivity. In its turn, "the development of the productivity of social labor becomes the most powerful lever of accumulation."<sup>38</sup> The accumulation process, therefore, drives toward unlimited increase in the organic composition of capital.

#### 5. The Concentration and Centralization of Capital

The continual revolutions in productive power produced by the rising organic composition of capital result in, and are, in turn, stimulated by, what Marx called the concentration and centralization of capital. Concentration here means essentially the increase in the number and size of industrial capitals; centralization means the concentration of already existing capitals.

Concentration of capital is an outgrowth of, and, in fact, another expression for, accumulation. It means concentration of the means of production in the hands of a growing capitalist class.

Accumulation and the concentration accompanying it are, therefore, not only scattered over many points, but the increase of each functioning capital is thwarted by the new and the subdivision of old capitals. Accumulation therefore presents itself on the one hand as increasing concentration of the means of production, and of the command over labor on the other, as repulsion of many individual capitals one from another.<sup>39</sup>

<sup>38</sup>. Capital, I, 681.

<sup>39</sup>. Ibid., I, 686.

Centralization, as opposed to concentration,

is concentration of capitals already formed, destruction of their individual independence, expropriation of capitalist by capitalist, transformation of many small into few large capitals.<sup>40</sup>

Centralization of capital is the result of competition and credit.

The battle of competition is fought by cheapening of commodities. The cheapness of commodities depends, *ceteris paribus*, on the productiveness of labor, and this again on the scale of production. Therefore, the larger capitals beat the smaller.<sup>41</sup>

Similarly, the credit system, at first,

"a modest helper of accumulation. . . becomes a new and formidable weapon in the competitive struggle, and finally it transforms itself into an immense social mechanism for the centralization of capitals."<sup>42</sup>

The limit of the centralization process within any industry is the concentration of all social capital in the hands of a single enterprise.<sup>43</sup>

Centralization is thus the result of, and the impetus to, the ripening of the capitalist form of production.

Centralization supplements the work of accumulation, by enabling the industrial capitalists to expand the scale of their operations. The economic result remains the same, whether this consummation is brought about by accumulation or centralization. . . .

It is evident, however, that accumulation, the gradual propagation of capital by a reproduction passing from a circular into a spiral form, is a very slow process as compared with centralization, which needs but to alter the quantitative grouping of the integral parts of social capital. The world would still be without railroads, if it had been obliged

40. Ibid., I, 686.

41. Ibid., I, 686.

42. Ibid., I, 687.

43. Ibid., I, 688.

to wait until accumulation should have enabled a few individual capitals to undertake the construction of a railroad. Centralization, on the other hand, accomplished this by a turn of the hand through stock companies. Centralization, by thus accelerating and intensifying the effects of accumulation, extends and hastens at the same time the revolutions in the technical composition of capital, which increase its constant part at the expense of its variable part and thereby reduce the relative demand for labor.<sup>44</sup>

This ripening of the capitalist form of production means (1) the socialization and rationalization of the labor process, (2) the hastening of technological change, (3) the growth of monopoly.<sup>45</sup>

#### 6. The Reserve Army of Labor

The effect of the rise in the organic composition of capital, especially as it is hastened by the concentration and centralization of capital, is to produce a reserve army of surplus population. The reserve army itself is not one of the causal links in the theory of breakdown, but it occupies such a central role in this stage of Marx's analysis that we include it here.

Unemployment in the Marxian sense is neither frictional unemployment, nor that due to the excessively high marginal propensity to save of the Keynesian system. It is the normal accompaniment of the accumulation process. The reserve army is not simply the result of substitution of machines for men. Such technological unemployment may be reabsorbed as fast as it is created, if the tempo of accumulation is sufficiently rapid. The reserve army is essentially the product

<sup>44</sup>. Ibid., I, 688-9.

<sup>45</sup>. Sweezy, op. cit., 276-7. As Sweezy notes, at this stage of analysis Marx does not concern himself with this third result.

of the capitalist system, not as a technical labor process, but as a process for the accumulation of surplus value. Therefore, it can be theoretically deduced as a necessary consequence of the accumulation process only when it is shown that the breakdown tendency eventually limits the accumulation process.<sup>45</sup> The demonstration of this necessity properly belongs in the next stage of our analysis where we shall deal with the cyclical pattern of accumulation. But in Marx's analysis, where the general developmental tendencies are discussed without specific reference to the cycle, the reserve army appears as an inevitable consequence of the accumulation process.

Marx says explicitly that since there is a progressive fall in the proportion (not the absolute quantity) of labor/<sup>set</sup> in motion by the means of production,

The laboring population therefore produces, along with the accumulation of capital produced by it, the means by which itself is made relatively superfluous, is turned into a relative surplus population; and it does this to an always increasing extent. This is a law of population peculiar to the capitalist mode of production; and in fact every special historic mode of production has its own special laws of population, historically valid within its limits alone.<sup>46</sup>

The reserve army expresses a social (as opposed to a natural) law of population specific to the capitalist system. This law deals not with the population as such, but with the working population available for capitalist production. Whereas in Ricardo

45. For an elaboration of this argument, and a determinate "proof" of the necessity of the reserve army, cf. Henryk Grossman, Das Akkumulations- und Zusammenbruchsgesetz des Kapitalistischen Systems, 125-130.

46. Capital, I, 892-333.

the theory of capital accumulation with technological unemployment is based on a natural (Malthusian) law of population, in Marx, the social law of population is deduced from the theory of accumulation. 47

Moreover, according to Marx, "The greater the social wealth . . . the greater is the industrial reserve army. . . . This is the absolute general law of capitalist accumulation." 48

In reality, the size of the reserve army fluctuates with the business cycle and determines the fluctuations of wages around the value of labor power, insofar as it forms the "pivot on which the law of supply and demand of labor works." 49 But capital determines both the demand and supply of labor. Therefore,

If its accumulation, on the one hand, increases the demand for labor, it increases on the other the supply of laborers by the setting free of them, whilst at the same time the pressure of the unemployed compels those that are employed to furnish more labor, and therefore makes the supply of

47. Ibid., I, 693-4, 707. The reserve army, it should be noted, appears as a product of capitalist accumulation regardless of the natural increase of the population or of the rate of accumulation. A fall in the rate of increase of the population leads only to increasing substitution of machinery for men and a further increase in the reserve army. (Theorien über den Mehrwert, II (2), 373.) The reserve army appears in the early period of capitalist production as a result of insufficient accumulation in relation to the rapidly growing population, in the late period of capitalist production, as a result of overaccumulation in relation to a stagnant population.

48. Capital, I, 707. Marx notes that, "Like other laws, it is modified in its working by many circumstances, the analysis of which does not concern us here." The "other circumstances" are, in fact, the countertendencies to the breakdown-tendency which seem to contradict the "absolute law". That Marx is aware of them is obvious. His main purpose, however, here, as elsewhere is to demonstrate the essential tendencies inherent in the development of a pure capitalist economy.

49. Ibid., I, 701.

labor, to a certain extent, independent of the supply of laborers.<sup>50</sup>

Marx underlines this argument as follows:

Relative overpopulation does not arise out of an absolute disproportion between labor and means of subsistence, or of means for the production of these means of existence, but out of a disproportion due to the capitalist exploitation of labor, a disproportion between the growing increase of capital and its relatively decreasing demand for an increase of population.<sup>51</sup>

Thus, the reserve army is above all a result of the specific social character of capitalist production.

The reserve army plays a strategic role in the capitalist economy. It provides at once a source of labor for rapid expansion, and a means by which wage fluctuations are centered around the value of labor power. Therefore, the reserve army, although a source of political unrest, can be regarded as an economic stabilizer of the capitalist system.<sup>52</sup>

Related to the theory of the reserve army is the theory of verelendung, or the ever worsening condition of the working class.

50. Ibid., I, 702.

51. Ibid., III, 280.

52. The reserve army as a stabilizer is quite different from the unemployment of the Keynesian underemployment equilibrium. Keynes' unemployment results from the separation of saving and investment decisions, a separation which does not exist for Marx. Keynes' results flow from psychological propensities, Marx's from the objective data of the system. Moreover, the increase in investment which absorbs unemployment in the Keynesian system is the very mechanism which normally creates the reserve army. For Keynes, unemployment is the normal product of a stagnant economy. For Marx, it is inherent in the most dynamic economy. Thus for Keynes, unemployment can be avoided or remedied by appropriate policy. For Marx it is, by definition, an inevitable concomitant of the accumulation process.

We mention it briefly because it continues to be one of the most debated points in Marxian theory, largely because Marx never says specifically what verelendung means in economic terms. What he does say is that

in proportion as capital accumulates, the lot of the laborer, be his payment high or low, must grow worse. The law, finally, that always equilibrates the relative surplus population, or industrial reserve army, to the extent and energy of accumulation, . . . establishes an accumulation of misery corresponding with accumulation of capital.<sup>53</sup>

This implies that verelendung is linked with the growing misery caused by the growth in the reserve army. It also implies that the condition of the workers is worsened under a "pure" capitalist system (where the normal tendencies of industrial development are not counteracted by trade union and legislative action), as industrialization means the subjugation of the workers by the machine, the abrogation of skills, and the increase in the intensity of work.

Marx makes it clear that verelendung does not mean a decline in real wages. The reverse is, in fact, the case, in the course of capitalist development. What he probably means is a decline in the relative share of the working class in the national income. Thus he says:

It is possible with an increasing productiveness of labor, for the price of labor power to keep on falling, and yet this fall to be accompanied by a constant growth in the mass of the laborer's means of subsistence. But even in such a case, the fall in the value of labor power would cause a corresponding rise of surplus value, and thus the abyss between the laborer's position and that of the capitalist would keep widening.<sup>54</sup>

53. Ibid., I, 708-9.

54. Ibid., I, 575.

One interpretation of the verelendung theory says that it means a fall in real wages, but that the peculiar conditions of 19th century development -- mainly the fact that capital accumulation proceeded with such rapidity, due to the inclusion of increasingly more numerous countries into the capitalist orbit--offered a "closed season" (schonzeit) for the normally hunted workers.

We differ with the explanation of the "closed season". Actually, it is part of the normal development of a progressive closed capitalist economy for increased productivity to be reflected in a higher standard of living for the working class.

The concept of verelendung has more meaning if it is applied to the value share of the working class. According to the assumptions of the Marxian theory, this share should decrease over time. It is impossible to test the theory by historical evidence, however, both because the historical development of capitalism deviates from the theoretical development of Marx's pure capitalism, and because the statistical concepts generally used in the investigation of distributive shares are not those of Marxian analysis.

55. Fritz Steinberg, Der Imperialismus (Berlin, 1928), 247 ff.

56. From most of the published statistical evidence, it is impossible to indicate with even rough generality the historical movement of the value share of the working class, as Marx defines the working class. The most recent statistics in Simon Kuznets' National Income: A Summary of the Findings (New York, 1946) show that for the category, "employee compensation", the share of the national income of the United States went from 50% in the average of the years 1870 and 1880 to 64.9% in the decade 1929-1938. (Table 15, page 50.) These figures have no relevance to our problem, however, because "employee



### 7. The Falling Tendency of the Rate of Profit

A most important link in the theory of breakdown is the theory of the falling rate of profit. The fall in the rate of profit most vividly expresses the contradiction between the production of use value and the production of exchange value. For the increase of productivity (in terms of the output of use values), the means for the creation of exchange value, leads necessarily to a fall in the rate of profit.

Marx speaks of the falling "tendency" of the rate of profit. This is because, although the falling rate of profit is a "law" of capitalist production, it is subject to checks and counter-tendencies, and works unevenly among different industries and over time. It is essentially a law of the long run.

compensation" includes some entrepreneurial gain as well as payment to all salaried workers, such as government workers, white collar and professional workers, and wages of personal servants, workers in the service industries, and in financial and commercial enterprises, categories of workers whose increase has been greater than that of the total working force, and which lie outside the working class as Marx defines it. The working class relevant for this problem includes only "productive workers", that is, workers who produce surplus value. This category includes only workers in the manufacturing, mining, construction, and transport industries. A determinate statement on the change in the relative share of this group can be made only with reference to changes in the income share and population of this group as compared with those of all workers and of the capitalist class. This statistical evidence is not readily available in the published data on income distribution. All we attempt here is to indicate that since the classifications as given in the usual data are not suitable for our purpose, the figures have no actual meaning in this relation.

Somewhat better data for our purpose is furnished in Michael Kalecki's "The Distribution of the National Income," Essays in the Theory of Economic Fluctuations, London, 1939, 13-41. Using the income data from Bowley's Wages and Income in the United Kingdom since 1860, and deducting from total income, the income from overseas, Kalecki gives the share of manual workers in net national income as 41.4% in 1880, and as 39.4% in 1915. The figures for the United States show similar stability, but do not cover as long a period of time.

The rate of profit, or ratio of total surplus value to total capital is a function of the rate of surplus value and the organic composition of capital. Assuming the rate of surplus value to be constant, the rate of profit falls automatically as the organic composition of capital rises.

67

Although the rate of profit is higher, the greater is the proportion of labor to material means of production, and therefore, the lower is the organic composition of capital, each capitalist, in his drive for short-run extra profits, continually introduces new methods of production which increase the technical, and thus the organic composition of capital. The drive for increasing profits is continually defeated. Marx describes the process as follows:

No capitalist voluntarily introduces a new method of production, no matter how much more productive it may be, and how much it may increase the rate of surplus value, so long as it reduces the rate of profit. But every new method of production of this sort cheapens the commodities. Hence the capitalist sells them originally above their prices of production, or, perhaps above their value. He pockets the difference, which exists between these prices of production

57. Capital, III, 248. Later we shall drop the assumption of a constant rate of surplus value and show that the law of the falling tendency of the rate of profit still holds.

Expressing the rate of profit ( $r$ ) as a function of constant capital ( $c$ ), variable capital ( $v$ ) and the rate of surplus value ( $m$ ), the dependence of the rate of profit on the organic composition of capital appears as follows:

$$r = f(c, v, m) = \frac{vm}{c+v}$$

$$dr = \frac{\partial f}{\partial c} dc + \frac{\partial f}{\partial v} dv + \frac{\partial f}{\partial m} dm$$

$$= \frac{-vm}{(c+v)^2} dc + \frac{cm + vm - vm}{(c+v)^2} dv + \frac{v}{c+v} dm$$

$dr$  is negative, or the rate of profit falls when  $dm = 0$ , and  $dc > dv$ .

and the market prices of the other commodities produced at higher prices of production. He can do this, because the average labor time required socially for the production of these other commodities is higher than the labor time required under the new methods of production. His method of production is above the social average. But competition generalizes it and subjects it to the general law. Then follows a fall in the rate of profit -- perhaps first in this sphere of production, which gradually brings the others to its level -- which is, therefore, wholly independent of the will of the capitalist. <sup>58</sup>

Thus the accumulation process itself and the competition which accompanies it lead inexorably to changes in the methods of production, to a higher organic composition of capital, and, correspondingly, to a falling rate of profit. The very logic of the capitalist system leads to the annihilation of the profits which are its goal.

The rate of profit is "the stimulating principle of capitalist production, the fundamental premise and driving force of accumulation. . . ." <sup>59</sup> Yet its fall, although an expression of the contradictions of capitalist production, and a symptom of the tendency to breakdown, neither blunts the drive to accumulate nor itself precipitates the breakdown. For the law of the falling tendency of the rate of profit is a "two-faced law, with the same causes for a decrease in the rate of profits and a simultaneous increase in the absolute mass of profits." <sup>60</sup> In Marx's words,

The law of the falling tendency of the rate of profit, or of the relative decline of the appropriated surplus-labor compared to the mass of materialized labor set in motion by living labor does not argue in any way against the fact that the absolute mass of the employed and exploited labor set in motion by the social capital, and consequently the absolute mass of the surplus-labor appropriated by it, may grow. <sup>61</sup>

58. Ibid., III, 310-11.

59. Ibid., III, 304.

60. Ibid., III, 258.

61. Ibid., III, 253.

We see, then, that in spite of the progressive fall of the rate of profit, there may be an absolute increase of the number of laborers employed by capital, an absolute increase of the labor set in motion by it, an absolute increase of the mass of surplus-labor absorbed, a resulting absolute increase of the produced surplus-value, and consequently an absolute increase in the mass of the produced profit. And it may not only be so. On the basis of capitalist production, it must be so, aside from temporary fluctuations.<sup>62</sup>

Marx develops the law of the falling tendency of the rate of profit on the provisional assumption that the rate of surplus value remains constant. In this case a rising organic composition of capital necessitates a falling rate of profit. The same is true whenever the organic composition rises faster than the rate of surplus value.

The relations among the three variables can be expressed in the following formula which appears in Bortkiewicz<sup>63</sup> and in

62. Ibid., III, 258.

63. Bortkiewicz, "Zur Berichtigung der Grundlegenden theoretischen Konstruktion von Marx im dritten Band des Capital," Jahrbücher für Nationalökonomie und Statistik, 1907, 324-5. Bortkiewicz denies the validity of the Marxian law of the falling rate of profit on two grounds. The first is a denial of the causal dependence of the rate of profit on the organic composition of capital. Bortkiewicz argues that the Marxian law breaks down because the rate of profit depends only on the organic composition of capital in the departments producing means of production and means of consumption, and not on the organic composition of the third department, producing luxury goods. He shows that, given a constant rate of surplus value, the rate of profit may remain constant, although the organic composition of the total capital rises, if the rise occurs only in the third department. (Ibid., 366-7.) This is formally correct, given the division of all consumption goods production into two departments, the rationality of which has been questioned previously, and the dubious assumption that the organic composition of capital in luxury goods production rises faster than the average.

More important is Bortkiewicz' second reason for denying the validity of the falling tendency of the rate of profit. This rests on the assumption that, as a result of the increased productivity of labor, the rate of surplus value rises faster than the organic composition of capital. ("Wertrechnung und Preisrechnung im Marx'schen System," Archiv für Sozialwissenschaft und Sozialpolitik, September, 1907, 445-88.)

64 Sweezy. With  $P =$  the rate of profit,  $S' =$  the rate of surplus value, and  $Q =$  the organic composition of capital,  $(c/c + v)$ ,  $P = S' (1 - Q)$ . This is a reformulation of Marx's formula,  $P = S' v/c + v$ . 65  
 The formula itself is a tautological expression which merely demonstrates the counteracting effects on the rate of profit exercised by the rate of surplus value and the organic composition of capital.

A rising rate of surplus value is typical of capitalist production. This is a direct expression of the increasing productivity of labor, which lowers the value of labor power, and increases the ratio of unpaid to paid labor.

Like every other increase in the productiveness of labor, machinery is intended to cheapen commodities, and, by shortening that portion of the working day in which the laborer works for himself, to lengthen the other portion that he gives, without an equivalent, to the capitalist. In short, it is a means for producing surplus value. 66

The important question is whether the rise in the rate of surplus value can overcompensate the rise in the organic composition of capital, and thus upset the Marxian law of the falling rate of profit. Marx himself does note that

The rate of profit might even rise, if a rise in the rate of surplus value were accompanied by a considerable reduction in the value of the elements of constant, and particularly of fixed, capital. But in reality, as we have seen, the rate of profit will fall in the long run. 67

65. Capital, III, 63.

66. Ibid., I, 405.

67. Ibid., III, 269. For Marx's summary of all the possible results of changes in the rate of profit resulting from changes in the rate of surplus value and the organic composition of capital, cf. ibid., III, 82-4.

Sweezy finds Marx's formulation of the falling tendency of the rate of profit unconvincing on the grounds that since every increase in productivity both raises the rate of surplus value and inhibits the rise of the organic composition of capital, the net effect of movements in the variables is indeterminate.<sup>68</sup>

While in the short run, the effect of a rising rate of surplus value may overbalance that of rising organic composition, in the long run, as capital is increasingly composed of constant capital, the rate of profit must fall. This appears most clearly from an examination of the use values which form the elements of capital. In the normal case, each increase in productivity means an increase in the material means of production, and a relative decrease in the labor time necessary to transform the means of production into use values. Whenever a given quantity of material means

68. Sweezy, *op. cit.*, 100-5. Sweezy attempts to justify by another argument the law that he finds unconvincing on the usual grounds. He argues that the rise in wages which accompanies the increased demand for labor power incident to accumulation reduces the rate of surplus value, and thus lowers the rate of profit (*Ibid.*, 105, 149). This argument, in full contradiction to Sweezy's previous argument about the important effect of the rising rate of surplus value, was previously advanced by Hilferding. (*Das Finanzkapital, Marx-Studien, Dritter Band, Wien, 1910, 322-3; 340-5; 459.*) It rests on a misconception both of Marx's method and the accumulation process. It should be remembered that Marx's analysis of rising wages in Volume I is based on the provisional, and admittedly, unreal, assumption of a constant organic composition of capital. With the rising organic composition and the reserve army as typical accompaniments of the accumulation process, the rise of wages above the value of labor power, except for temporary deviations, is excluded. Marx states explicitly that "The falling tendency of the rate of profit is accompanied by a rising tendency of the rate of surplus value, that is, in the rate of exploitation. Nothing is more absurd, for this reason, than to explain a fall in the rate of profit by a rise in the rate of wages, although there may be exceptional cases where this may apply." (*Capital, III, 281.*)

of production sets in motion a progressively smaller total number of labor days, of which the unpaid portion of this labor time decreases, the rate of profit must fall. The effect of a change in productivity can be illustrated by the following two cases:

I. Means of Production	Total Labor Days	Paid Labor Days	Unpaid Labor days	Constant Capital	Variable Capital	Surplus Value	Rate of Surplus Value S/V	Organic Composition of Capital C/C+V	Rate of Profit S/C+V
100	100	50	50	100	50	50	100%	66.66	33.33
II. Means of Production	Total Labor Days	Paid Labor Days	Unpaid Labor Days	Constant Capital	Variable Capital	Surplus Value	Rate of Surplus Value S/V	Organic Composition of Capital C/C+V	Rate of Profit S/C+V
100	20	2	18	100	2	18	900%	98.04	17.64

Here the organic composition increases by 50%, the rate of surplus value by 900%, yet the rate of profit falls. This unusual result, of course, follows from the figures of the example, which were chosen specifically to show that as the composition of capital becomes very high, the falling rate of profit appears as an absolute law.

The absolute character of the law of the falling rate of profit arises from the fact that there is an absolute limit to the rate of surplus value, in that however large this rate may be, it is

still limited by the total number of hours of the working day, some of which must constitute paid labor time. The rate of profit must fall with the progressive reduction of the mass of labor power from which the mass of surplus value, given the rate of surplus value, is calculated. Marx explains this by the following example:

Two laborers, each working 12 hours daily, cannot produce the same mass of surplus value as 24 laborers each working only two hours, even if they could live on air and did not have to work for themselves at all. In this respect, then, the compensation of the reduction in the number of laborers by means of an intensification of exploitation has certain impassible limits. It may, for this reason, check the fall of the rate of profit, but cannot prevent it entirely.<sup>69</sup>

Marx mentions six countertendencies to the falling rate of profit, the forces which "thwart and annul the effects of this general law, leaving to it merely the character of a tendency."<sup>70</sup> These follow:

- (1) Raising the intensity of exploitation
- (2) Depression of wages below their value
- (3) Relative overpopulation (and its employment in industries of low organic composition)
- (4) Cheapening of the elements of constant capital
- (5) Foreign trade (which cheapens both the elements of constant capital and subsistence goods)
- (6) The increase of the stock of capital, particularly the interest-bearing capital of heavy industries, such as railroads, whose

69. Ibid., III, 290.

70. Ibid., III, 272.



rate of profit is lower than the average, but does not enter  
71  
into the determination of the average.

We shall deal with these countertendencies in our last chapter, when we extend the analysis developed here.

8. Overaccumulation with Reference to the Mass of Profits,  
and Breakdown

The tendency to breakdown which is inherent in capitalism is realized when the accumulation process reaches the state of overaccumulation of capital. This is the stage when the falling rate of profit is no longer accompanied by a rising mass of profits.

The essential cause of the declining, and eventually zero, rate of increase in the mass of profits, which is expressed by the falling rate of profit, is the fundamental conflict between the expansion of production and the creation of values.

The contradiction, generally speaking, consists in this, that the capitalist mode of production has a tendency to develop the productive forces absolutely, regardless of the social conditions under which capitalist production takes place; while it has on the other hand for its aim the preservation of the value of the existing capital and its self-expansion to the highest limit (that is, an ever accelerated growth of this value). Its specific character is directed at the existing value of capital as a means of increasing this value to the utmost. The methods by which it aims to accomplish this comprise a fall of the rate of profit, a depreciation of the existing capital, and a development of the productive forces of labor at the expense of the already created productive forces. . . . The accumulation of capital so far as its value is concerned, is checked by the falling rate of profit, in order to hasten still more the accumulation of its use-value, and this, in its turn, adds new speed to the accumulation of its value.

Capitalist production is continually engaged in the attempt to overcome these immanent barriers, but it overcomes

71. Ibid., III, 272-282.

them only by means which again place the same barriers in its way in a more formidable size.

The real barrier of capitalist production is capital itself. It is the fact that capital and its self-expansion appear as the starting and closing point, as the motive and aim of production; that production is merely production for capital, and not vice versa, the means of production mere means for an expanding system of the life process for the benefit of the society of producers. The barriers, within which the preservation and self-expansion of the value of capital resting on the expropriation and pauperization of the great mass of producers can alone move, these barriers come continually in collision with the methods of production, which capital must employ for its purposes, and which steer straight toward an unrestricted extension of production; toward production for its own self, toward an unconditional development of the productive forces of society. The means, this unconditional development of the productive forces of society, comes continually into conflict with the limited end, the self-expansion of the existing capital. Thus, while the capitalist mode of production is one of the historical means by which the material forces of production are developed and the world market required for them are created, it is at the same time in continual conflict with this historical task and the conditions of social production corresponding to it. 72

The conflict between the means and the end of capitalist production, between the production of use values, and the realization of exchange value, shows itself in the eventual overaccumulation of capital. To illustrate overaccumulation, or overproduction of capital, Marx assumes it to be absolute. Absolute overaccumulation is simply a zero rate of increase in the mass of profits. 73

72. Ibid., III, 292-3.

73. In the course of accumulation the rate of profit falls so that

$$\frac{d\left(\frac{s}{c+v}\right)}{d(c+v)} < 0; \text{ the mass of profits rises so that } \frac{ds}{d(c+v)} > 0; \text{ but at}$$

a decreasing rate so that  $\frac{d^2s}{d(c+v)^2} < 0$ . At the point of absolute over-accumulation where there is no change in the mass of profits;  $\frac{ds}{d(c+v)} = 0$ .

At this point the average rate of profit is positive, although the marginal rate of profit is zero.

There would be absolute overproduction as soon as the additional capital for purposes of capitalist production would be equal to zero. . . . As soon as capital would have grown to such a proportion compared with the laboring population, that neither the absolute labor time nor the relative surplus-labor time could be extended any further (this last named extension would be out of the question even in the mere case that the demand for labor would be very strong, so that there would be a tendency for wages to rise); as soon as a point is reached where the increased capital produces no larger, or even smaller, quantities of surplus-value than it did before its increase, there would be an absolute overproduction of capital. That is to say, the increased capital  $C + \Delta C$  would not produce any more profit, or even less profit, than capital  $C$  before its expansion by  $\Delta C$ . . . . The fall in the rate of profit would then be accompanied by an absolute decrease in the mass of profits, since under the conditions assumed by us the mass of the employed labor-power could not be increased and the rate of surplus-value not raised, so that there could be no raising of the mass of surplus value. And the reduced mass of profits would have to be calculated on an increased total capital. <sup>74</sup>

Overproduction of capital means that capital is "unable

unable to exploit labor to a degree required by the "healthy, normal" development of the process of capitalist production, a degree of exploitation, which would increase at least the mass of profit to the extent that the mass of the employed capital would grow; which would therefore exclude any possibility of the rate of profit falling to the same extent that capital grows, or of the rate of profits falling even more rapidly than capital grows. <sup>74</sup>

As Marx uses the term "overproduction of capital", it is always in terms of insufficient profits, not of insufficient demand. <sup>75</sup>

The state of absolute overaccumulation of capital does not mean that the rate of profit falls to zero. This is impossible so long as capital includes any variable capital, which produces surplus

<sup>74</sup>. Capital, III, 299-300.

<sup>75</sup>. Overproduction of capital necessarily implies overproduction of commodities, for capital consists of commodities. As Marx points out, Ricardo is perfectly consistent in denying both his successors, inconsistent in admitting overproduction of capital, while denying overproduction of commodities. (Theorien über den Mehrwert, II(2), 269-71.)

value. Long before the rate of profit approaches zero, an absolute limit to accumulation takes place; this is the fact that accumulation no longer yields an increase in the mass of profits.

The logical consequence of the overaccumulation of capital, within the simplified model we have presented, is breakdown of the system. The state of overaccumulation provokes a crisis characterized by the depreciation of capital values, falling prices, collapse of the credit system, "an actual stagnation and collapse of the process of reproduction, and finally a real falling off in reproduction."<sup>76</sup>

That the crisis does not develop into a permanent stagnation is explained by the forces of adaptation and recovery within the system, which will occupy our attention in another chapter. The preceding analysis has demonstrated merely that the logic of the accumulation process necessarily implies breakdown. Our next task is to analyze the breakdown tendency in more detail within a more rigidly specified model of the accumulation process, and to examine the countertendencies which check the breakdown tendency and, together with the mechanism of accumulation, give to capitalist development its characteristically cyclical pattern.<sup>77</sup> In this connection, we shall examine Marx's discussion of crises and the contributions of Marxian critics to the theory of business cycles and capitalist breakdown.

76. Capital, III, 298.

77. The unfinished state of Marx's work appears most clearly in the chapter in Volume III of Capital, "Unraveling the Internal Contradictions of the Law," which contains both the abstract generalizations on the contradictions of the system which lead to the overaccumulation of capital, and the concrete description of the cycle, particularly of its depression and recovery phases. This description, on a much lower stage of abstraction than the analysis of breakdown tendency, logically should be separated from the theoretical analysis.