

## Chapter Seven

## THE COMPLETE THEORY OF BREAKDOWN BASED ON FALLING PROFITS

In this chapter we propose to develop the complete theory of breakdown, which offers a single explanation of both business cycles and ultimate breakdown of the capitalist system. In Chapter 5 we summarized Marx's discussion on crisis, although the problem of crises is subordinate to the larger problem of cycles, in order to make clear the distinction between the form of the crisis and the cause of the cycle. Having disposed of the problem of the form of the crisis, and of factors which do not play a causal role in the cycle, we then in Chapter 6 examined two of the leading interpretations of Marx's theory of cycles and breakdown. We found both the underconsumption and disproportionality theories to be inadequate, the former because it cannot explain cycles, the latter because it cannot explain the secular tendency to breakdown. In this chapter we attempt to prove that only a theory of falling profits can explain both cyclical and secular development, and thus furnish a complete theory of breakdown. As we have previously indicated, the explanation must run in terms of the mass rather than of the rate of profit. Cyclical development cannot be explained by the falling rate of profit, without appeal to the vague concept of a "normal" minimum rate. This minimum has little meaning because there is every reason to expect accumulation to proceed without interruption, despite the falling rate of profit, since

capitalists prefer a low rate of profit to none at all.

The rate of accumulation (the % of surplus value accumulated) is not a function of the rate of profit. If it were, the rate of accumulation would decrease throughout each upswing and over time, which is not the case either in logic or in history. The rate of accumulation is rather a function of the mass of profits, which increases absolutely, although it falls relatively. As Marx points out, "the river of capital rolls on. . . or its accumulation does, not in proportion to the level of the rate of profit, but in proportion to the impetus which it already has."<sup>1</sup>

The rate of profit is an index of the maturation of the capitalist economy, and, therefore, of its tendency to breakdown. In this connection Marx says,

The fall of interest <sup>where interest, means the rate of profit</sup> is therefore a symptom of the abolishing of capital, only insofar as it is a symptom of its completing its domination, which means it is completing its alienation and is therefore driving towards its dissolution.<sup>2</sup>

Because the fall in the rate of profit is only a symptom of capitalist decline, the breakdown itself can be theoretically deduced only with reference to movements in the mass of profits. The elements of a theory of breakdown, based on movements in the mass of profits, are all contained in Marx's works. The theory has been reconstructed in large part in Grossman's Das Akkumulations- und Zusammenbruchsgesetz des Kapitalistischen Systems.<sup>3</sup> In this chapter,

1. Capital, III, 288.

2. "Ökonomische-philosophische Manuskripte (1844)," Marx-Engels Gesamt Ausgabe, Erste Abteilung, Bd. 3 (Berlin, 1932), 137-8.

3. For Grossman's discussion on the relation between the rate and the

we intend to develop the Grossman argument, and to extend the theoretical analysis into a more complete theory of business cycles.

Here we recall the meaning of the breakdown of the capitalist economy. It is not a physical collapse of the technological bases of capitalist society, but an inability of the accumulation process to maintain itself on its old basis. The demonstration of this inability can be made only within a theoretical model, which points to the fundamental tendencies of capitalist development. Theoretical analysis, therefore, must, according to the method of successive approximation, start on the abstract level of generalization of the essential laws of capitalist production, and successively approach the concrete phenomena of reality.

The necessary stages in the analysis are indicated by the logical relations between the secular trend of capitalist development and the cyclical movement which traces out this trend. The trend is composed of the cycles, yet the cyclical movement can be deduced only from the dynamic tendencies of capitalist evolution, (1) the breakdown tendency which checks the accumulation process and (2) the countertendencies which check the operation of the breakdown tendency.

Given the cycle-trend relation, we must first, on the highest level of abstraction, as a first approximation, deduce the tendency to breakdown. On the next level of abstraction, as a second approximation, we introduce the countertendencies, which

mass of profit, of. Das Akkumulations- und Zusammenbruchsgesetz des Kapitalistischen Systems, 195-198.

periodically check the breakdown tendency, and produce the cyclical form of economic development. On the lowest level of abstraction, as a third approximation, we indicate the pattern of cyclical development. Here we indicate, as far as possible, the concrete behavior of economic quantities, which give the cycle its particular shape, amplitude, duration, and periodicity. Finally, we conclude that within the theoretical system, which by successive approximation gradually approaches reality, the capitalist economy, through a growing lack of profitability, or the exhaustion of the counter-tendencies, must eventually break down.

It must be remembered that no theory of breakdown can "prove" that the real system must reach its end at a given time, according to a given formula. Theory is not a mirror or a blueprint or a prophecy of reality. It is an instrument to aid us in understanding the fundamental tendencies which are expressed in reality. So far as the theory of breakdown is based on assumptions which crystallize the essential relations of the real system, can deduce the fundamental developmental tendencies of the system, and account for the deviations from these tendencies, it is a useful approximation to the real world.

#### 1. The Breakdown Tendency

The first step in the theoretical analysis is the demonstration of the inevitable tendency to break down imposed by the necessary limit to the accumulation process. In Chapter 4, we indicated the successive steps in Marx's argument by which this

limit follows from the theory of value. The argument can be summarized as follows. Given the drive for profits and the superior productivity of a high organic composition of capital, accumulation proceeds on the basis of an ever rising organic composition of capital. But since surplus value is created by variable capital alone, the increase in the organic composition of capital, unless overcompensated by the rise in the rate of surplus value, leads to a falling rate of profit. On this level of abstraction where capitalist consumption as a necessary deduction from surplus value is not considered, the absolute limit to the accumulation process, or the point of absolute overproduction of capital, is the point at which the mass of profits created by an increment of investment (the marginal rate of profit) equals zero. As Marx indicates, this point of overaccumulation is the limiting case of capitalist production, the point at which, "the additional capital for purposes of capitalist production would be equal to zero."<sup>4</sup> Absolute overproduction of capital exists when "neither the absolute labor time nor the relative surplus labor-time. . .<sup>5</sup> [can] be extended any further. . . ."

When we turn from this theoretically limiting case, which assumes provisionally, although it is not stated explicitly, that all surplus value is regularly available for accumulation (that is, that the rate of accumulation can be 100%), to the more

4. Capital, III, 295.

5. Ibid., III, 295.

realistic case where capitalist consumption sets a limit to the rate of accumulation, we find that a point of overaccumulation is reached, before Marx's provisional limit. This latter point is reached as soon as that part of surplus value used for capitalist consumption becomes zero, or as soon as the rate of accumulation reaches 100%. However, the rate of increase in the mass of profit, need not be zero at this point.

We can demonstrate the argument and give it a general algebraic expression only with reference to a theoretical model based on specific assumptions as to the rate of accumulation, the organic composition of capital, and the rate of surplus value. Given the absolute magnitude and composition of the initial capital, the rate of surplus value, and the rates of increase of both constant and variable capital, the number of years before the point of breakdown is determined.

Grossman's accumulation model states the argument as follows. As a first approximation, following Marx, it makes the following assumptions:

1. The system is a closed economy.
2. There are only two classes, capitalists and workers.
3. All capital is industrial capital.
4. Prices equal values.
5. Prices and wages remain constant.
6. There are two departments whose accumulation is proportional (or demand equals supply in each department).
7. The period of turnover of all capital is one year.

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6. Grossman, op. cit., 79, 287.

These assumptions are extremely provisional. To assume that the law of value holds without deviation (prices equal values) assumes also that the organic composition of capital is the same in both departments, an assumption which must later be dropped. Similarly, the elimination of credit and the assumption that wages and prices remain constant are merely methodological fictions which must later be dropped. These simple assumptions are necessary to clarify the essential relations, and to eliminate the non-causal changes in the economic variables. These changes are important and will be brought into the analysis at a later stage. At the outset, however, they must be disregarded in order to concentrate on the essential problem, the progress of accumulation under equilibrium conditions. This procedure follows that of Marx, who, as a first approximation, eliminates competitive price deviations in order to demonstrate the underlying law of value.

Grossman's argument is developed within a reproduction schema set up by Otto Bauer.<sup>8</sup>

Bauer's schema was originally designed to refute the theory of underconsumption. In answer to Rosa Luxemburg's charge that accumulation is impossible in a closed economy, Bauer shows

7. "Equilibrium conditions" does not have the same meaning here as in orthodox economic theory. It means only that prices equal values, and that demand and supply are equal in each department.

8. Otto Bauer, "Die Akkumulation des Kapitals," Die Neue Zeit, Jhrg. XXXI, Bd. 1 (1912-13), 831-833, 862-874. We have already rejected Bauer's argument (ibid., 869-872) that a disproportion between the increase in the population and the rate of accumulation is the only cause of crises.

that surplus value can be fully realized at home, as demand increases with supply. What he does not see, however, (and it cannot be seen from his schema, which illustrates the accumulation process for a period of only four years) is that despite the equality of supply and demand, the accumulation process is eventually limited by an inadequacy of surplus value. Grossman uses Bauer's assumption to disprove Bauer's thesis that unlimited accumulation is possible.

The assumptions of Grossman's schema are as follows:

1. The total surplus value is divided into 3 parts,  $a_c$ , the surplus value accumulated as constant capital,  $a_v$ , the surplus value accumulated as variable capital,  $k$ , the surplus value consumed by the capitalist class.
2. The rate of surplus value remains constant at 100%.
3. The constant capital increases at the annual rate of 10%.
4. The working population, the variable capital, and, therefore, the mass surplus value, increase at the annual rate of 5%.

From these assumptions, it follows that:

1. The organic composition of capital rises.
2. The rate of accumulation rises.
3. The rate of profit falls.
4. The mass of profits increases at a decreasing rate.
5. Capitalist consumption, as a percentage of surplus value, falls.
6. Capitalist consumption, as an absolute quantity, rises for a time and then falls.



The year of the breakdown is the stage of the accumulation process at which the rate of accumulation is 100%. The mass of profits is just adequate to maintain the existing rates of increase of constant and variable capital with no surplus for capitalists' consumption. Given the absolute magnitude of the initial capital, and the assumptions of the schema, the amount of surplus value available for capitalist consumption begins to decline in the 21st year. In the 35th year, the consumption fund becomes zero; in the 36th year, not only is there no surplus value available for capitalist consumption, but there is a deficit in the surplus value required for accumulation. Thus, by the 21st year, with the decline in the capitalist consumption fund, further accumulation at the same rate has no purpose. By the 35th year, further accumulation is impossible.

The assumptions of this model are, of course, quite arbitrary. The rates of increase of the constant and variable capital, and the rate of surplus value, can be very different. But given the constant rate of surplus value (or any rate whose increase is less rapid than the increase of the organic composition of capital), as long as  $a_0$  is greater than  $a_v$ , or as long as the organic composition rises, despite the fact that the mass of profit rises as the rate of profit falls, a shortage of surplus value

9. It should not be necessary to add that this demonstration does not imply that in reality the capitalist drive for profit imposes such reckless abstinence. It does imply, however, that the logic of the process is such that accumulation, rather than consumption is the primary goal of the capitalist system.

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 eventually appears. Grossman gives several other models with different assumptions in which the same results follow in shorter periods. Longer upswings are equally possible with different assumptions.  
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 "Nevertheless," says Grossman,

so long as accumulation for the whole economy proceeds faster than the increase in population -- and the constant progress to an ever higher organic composition of capital is a necessary prerequisite following from the capitalist system itself -- a point must be reached in the progress of capital accumulation, where the profitability is insufficient, where overaccumulation must necessarily take place.<sup>12</sup>

The important point is that the tendency to breakdown can be deduced from no other postulate than that of the fundamental tendency of capitalist development, the rising organic composition of capital.

Further, we see that while the theory of the falling rate of profit as Marx leaves it is not adequate to demonstrate the necessity of breakdown, Marx's long analysis in the third volume of Capital can be reconstructed as a theory of breakdown with the aid of a theoretical model which reveals the movements in the mass of profit. Again we recall the fact that this is not as yet a complete theory of breakdown. It merely demonstrates the first point in our analysis, the necessary limits to the accumulation process.

10. On a lower level of abstraction we shall see that the rate of surplus value does not remain constant, but rises with the organic composition of capital. However, as we have shown previously (cf. Chapter 4, above) the organic composition of capital tends to rise faster than the rate of surplus value, so that the rate of profit and the rate of increase in the mass of profit must fall.

11. Ibid., 216-226.

12. Ibid., 147.

The duration of accumulation process, or the number of years before the upswing is checked by a crisis, depend on the assumptions with regard to:

- (1)  $a_c$ , the rate of accumulation of constant capital
- (2)  $a_v$ , the rate of accumulation of variable capital
- (3)  $\frac{c}{v}$ , the organic composition of capital
- (4)  $\frac{s}{v}$ , the rate of surplus value.

The upswing is shortened the greater are (1) and (3), and the smaller is (4). The effect of (2), the rate of accumulation of variable capital, is ambivalent. If  $a_v$  is relatively great because of a rapid growth in the working population, with wages remaining constant, the upswing is lengthened. But if  $a_v$  is relatively great only because of higher wages, the upswing is shortened.<sup>13</sup> For the moment, we eliminate this second possibility. Given these four variables, the length of the upswing is determined.<sup>14</sup> This can be given general mathematical expression as follows.

1. Assumed throughout that  $s = v$
2. Assumed that the rate of increase of  $c$  is constant  
Assumed that the rate of increase of  $v$  is constant,  
which means that

$$\frac{dc}{dt} = \lambda c, \quad \frac{dv}{dt} = \mu v$$

13. Ibid., 220-221.

14. This mathematical statement seems a more workable one than that given by Grossman (ibid., 194-5).

3. This immediately gives  $c$  and  $v$  as functions of  $t$ :

$$c = c_0 e^{\lambda t}, \quad v = v_0 e^{\mu t}$$

$c_0$  being the initial  $c$  (at  $t = 0$ )

$v_0$  being the initial  $v$  (at  $t = 0$ )

4. We define the organic composition  $\omega = \frac{c}{v}$ .  $\omega$  is a function of  $t$ , and

$$\begin{aligned} \frac{d\omega}{dt} &= \frac{d}{dt} \left( \frac{c}{v} \right) = \frac{v \frac{dc}{dt} - c \frac{dv}{dt}}{v^2} = \frac{\lambda cv - \mu cv}{v^2} \\ &= (\lambda - \mu) \frac{c}{v} = (\lambda - \mu) \omega \end{aligned}$$

Hence

$$\omega = \omega_0 e^{(\lambda - \mu)t}, \quad \text{where } \omega_0 = \frac{c_0}{v_0} \text{ is the initial}$$

organic composition.

5. We define the rate of accumulation  $\phi$  as the fraction of the surplus reinvested into  $c$  and  $v$ . Because of the assumption (1.), we have:

$$\phi v dt = dc + dv$$

$$\phi v = \frac{dc}{dt} + \frac{dv}{dt}$$

$$\phi v = \lambda c + \mu v$$

$$\phi = \lambda \frac{c}{v} + \mu$$

$$\phi = \lambda \omega + \mu$$

$$\phi = \lambda \omega_0 e^{(\lambda - \mu)t} + \mu$$

6. We define the breakdown  $T$  as the time at which  $\phi = 1$ .

Then

$$\lambda \omega_0 e^{(\lambda - \mu)T} + \mu = 1$$

$$e^{(\lambda - \mu)T} = \frac{1 - \mu}{\lambda \omega_0}$$

$$(\lambda - \mu)T = \log \frac{1 - \mu}{\lambda \omega_0}$$

$$T = \frac{1}{\lambda - \mu} \log \frac{1 - \mu}{\lambda \omega_0}$$

$$T = \frac{1}{\lambda - \mu} \log \left( \frac{1 - \mu}{\lambda} \frac{v_0}{\omega_0} \right),$$

which gives  $T$  in terms of the initial conditions:  $\omega_0$ ,  $v_0$ , and the constants  $\lambda$  and  $\mu$ . It shows the interesting fact that  $T$  becomes infinite, that is, there is no breakdown, if  $\lambda - \mu = 0$ , namely, if the rates of increase of  $c$  and  $v$  are the same.

While our model shows that the specific time of the breakdown can be determined when the assumptions remain fixed, there is a question as to what happens if the assumptions are changed within the model, that is, if the rates of accumulation are changed during the upswing? Can the breakdown be postponed indefinitely by appropriate alteration of the rates of accumulation?

To bring the model into closer approximation to reality, we must remember that the capitalist class does not passively await the breakdown which follows inexorably from the accumulation

process. It will be recalled that there are two critical points in the accumulation process, the first, the point at which  $k$ , the capitalist consumption share, begins to decline (the 21st year in Grossman's original model) and the second, the point at which  $k$  is reduced to zero (the 35th year). At either of these points, by lowering the rate of accumulation of constant capital, and thus slowing down the increase in the organic composition of capital, and by increasing the rate of surplus value, the accumulation process can be lengthened, and the breakdown postponed. If, for example, the rate of increase of the constant capital is lowered whenever the first critical point is reached, that is, each time the absolute quantity of surplus value available for capitalist consumption begins to decline, it appears as if breakdown might be postponed indefinitely. As our mathematical statement indicates, there is no breakdown at all ( $T$  becomes infinite) when  $a_0 = a_v$ .

Such a solution is impossible, however, for several reasons. In the first place, although a decrease in the tempo of accumulation may postpone the fall in the  $k$ -part, it also lowers the total quantity of surplus value and the absolute quantity of this  $k$ -part. Since this is the case, there is little reason to expect capitalists to diminish their rates of accumulation. Secondly, and more important, a progressive decline in the rate of accumulation or a decline in the organic composition of capital is the very reverse of the normal tendency of the capitalist system, where  $\bar{a}$  fall in the rate of profit, and a hastening of accumulation

are. . . only different expressions of the same process as both of them indicate the development of the productive power." <sup>15</sup> The very logic of the system which forces each individual capitalist to accumulate, and at a progressively higher organic composition of capital, or perish, leads to a progressive increase in the organic composition and in the rate of accumulation of the total capital, whereby the whole class perishes. The very laws of the system spur on ever more rapid accumulation which can end only in breakdown. "Thus the power of capital, the personification of the conditions of social production and capitalism, grows over the heads of the real producers. Capital shows itself more and more as a social power, whose agent the capitalist is. . . ." <sup>16</sup> The capitalist class is therefore unable to prevent the self-destruction of the accumulation process. Thus, the system cannot slow down to the point at which  $a_c = a_f$ , can not reverse its tendency to an ever higher productive level. And because it cannot slow down, it must break down. The drive for profits, the very motive of the accumulation process, defeats itself as the accumulation process narrows the basis of its profitability. In Marx's words,

The stupendous productive power developing under the capitalist mode of production relatively to population, and to the increase, though not in the same proportion, of capital values (not their material substance), which grow much more rapidly than the population, contradict the basis, which, compared to the expanding wealth, is ever narrowing, and for which this immense productive power works, and the conditions under which capital augments its value. This is the cause of crises. <sup>17</sup>

15. Capital, III, 283.

16. Ibid., III, 310.

17. Ibid., III, 313.

Having shown that there is a systematic tendency to over-accumulation, we can now return to a question that was necessarily left unsettled in Chapter Four. This is the problem of the reserve army. In our previous discussion, we showed that in Marx's argument the reserve army, or surplus population, together with surplus capital, appears as a necessary consequence of the accumulation process. We indicated that the reserve army is not simply the result of displacement of workers by machinery, a displacement which can occur in any type of economy, including socialism, and one which can be compensated by a hastened tempo of accumulation. The reserve army is a result of the specifically capitalist accumulation process. It is a result of the rising organic composition of capital, only insofar as the rising organic composition reduces the rate of increase in the mass of surplus value and thus imposes a necessary limit to the accumulation process. Thus, the reserve army appears in the year of crises in our model because the surplus value is no longer adequate to accumulate variable capital at the old rate. The reserve army is, therefore, a logical consequence of the breakdown tendency. We see that Grossman's provisional assumption of full employment and constant wages (equal to the value of labor power) is necessary as a first approximation. Since in the Marxian system wages move inversely with the reserve army, wage movements can be introduced only after the reserve army has been deduced. In reality, the reserve army is cyclically created and reabsorbed. But we cannot postulate it as a datum until we have deduced it from the logic of the accumulation process.



To return to our main argument, we see that thus far our provisional model demonstrates only that there is an inherent limit to the accumulation process. The model pictures an upswing characterized by constant wages and prices. If now we drop some of the provisional assumptions, we find that the upswing deviates from that of the schema, but is inevitably checked by insufficient surplus value.

First to be dropped is the assumption of constant productivity. A rising organic composition inevitably produces an increasing level of productivity (an increasing quantity of use values per unit of capital), and a consequent cheapening of means of production and subsistence goods.

Secondly, we must drop the assumption that the rate of surplus value remains constant. Increasing productivity means that the rate of surplus value rises as the fall in the value of labor power reduces the quantity of necessary labor.

But neither a cheapening of the element of capital or a rise in the rate of surplus value can prevent the breakdown.

Both of these things imply a depreciation of the existing capital, and both of them go hand in hand with a relative reduction of the variable as compared to the constant capital. Both things imply a fall in the rate of profit, and both of them check it.<sup>18</sup>

The rise in productivity does not prevent the breakdown, but only hastens the accumulation process.

The accumulation of capital, so far as its value is concerned, is checked by the falling rate of profit, in order

<sup>18</sup>. Ibid., III, 291.

to hasten still more the accumulation of its use value, and this in turn, adds new speed to the accumulation of its value.<sup>19</sup>

Thus, while the increase in productivity lowers costs, (including wages) and prices, the absorption of the reserve army, and the frictions which develop throughout the upswing, tend to increase prices and wages. In the first half of the upswing, prices and wages are below, and in the second half, above values. This same result follows with the introduction of loan capital, and the rate of interest. The latter, like wages and prices, is below the average in the first half of the upswing, when loan capital is abundant, and above the average in the second half of the upswing as loan capital becomes scarce. Despite these variations the upper limit to the accumulation process imposed by the relations of the original model remains.

Thus far, even with some modification of our original assumptions, we have demonstrated only one point in our theoretical analysis, that is, the necessary limit of the accumulation process. Our next task is to show, on a lower level of abstraction, why the breakdown tendency does not express itself in immediate collapse, but is periodically checked by the counter-tendencies to breakdown, which restore the basis of profitability, and give to capitalist evolution its characteristically cyclical pattern.

## II. The Modifying Countertendencies and the Cycles

As a second approximation to reality, we now introduce the countertendencies, some of which were touched upon in our

<sup>19</sup>. Ibid., III, 293.

brief discussion on the deviations from the accumulation model. These are what Marx calls "counteracting influences... which thwart and annul" <sup>20</sup> the effect of the breakdown tendency <sup>which</sup> /in Marx's incomplete analysis/ <sup>is</sup> identified with the falling rate of profit. In his classical description of the crisis, Marx describes the effect of the counteracting causes in limiting the depression and paving <sup>21</sup> the way for a new upswing. Here we must give the theoretical analysis of these countertendencies which are so effectively described by Marx.

Grossman gives a detailed discussion of all the modifying countertendencies which prevent the breakdown tendency from leading the system into immediate collapse. The net effect of these countertendencies is to turn the depression into a purifying process, to produce a lower turning point and subsequent recovery. Not all Grossman's alleged countertendencies are convincing. Some of these tendencies are merely possible modifications of the assumptions of the original schema, but do not necessarily check the breakdown tendency. But the argument as based on those tendencies which actually do work in opposition to the breakdown tendency is in itself valid. The superiority of this analysis, as a theory of business cycles, is that it explains all phases of the cycle by the same phenomenon, <sup>22</sup> that of profitability.

20. Ibid., III, 272-282.

21. Ibid., III, 298-299.

22. It is obvious why all interpretations of Marxian cycle theory are forced to explain the lower turning point by the restoration of

The various countertendencies can be divided into two groups. The tendencies in the first group check the breakdown tendency by restoring profitability through the home market, those of the second group by restoring profitability through the world market.

The leading countertendencies to breakdown are the following:

A. Countertendencies which restore profitability through structural changes within the home economy:

1. Depreciation of the element of both constant and variable capital.
2. Increase in the rate of surplus value.
3. The fall in the rate of interest.
4. Increase of interest-bearing capital.
5. Increase of population.

B. Countertendencies which restore profitability through the world market:

1. Foreign trade.
2. Capital exports.

These countertendencies are all long-run tendencies. But as secular tendencies, they produce a cyclical effect so far as they are more effective in the downswing than in the upswing. At a later point in the analysis we must show how these

profitability. Certainly, the depression cannot be overcome by the end of underconsumption, or by better proportionality, changes which logically should follow from the theory of underconsumption or of disproportionality.

countertendencies weaken over time. Here, however, our task is to demonstrate only how they operate to restore profitability after the crisis, so that the downswing is not cumulative indefinitely, but is instead turned into a new upswing.

A. Countertendencies which restore profitability through structural changes within the home economy

1. Devaluation and Depreciation of the Element of Capital

In our preliminary analysis of the accumulation process, we assumed prices to be constant for the methodological reason of showing that the breakdown tendency asserts itself independently of price movements. We then showed that price changes modify the upswing model, but cannot prevent overaccumulation. In introducing price changes into the downswing we find that they play an important role in reestablishing the profitability of the system.

Here we must distinguish between two forms of price changes, depreciation and devaluation. The terms are confusing, but by giving them arbitrary definitions we can better see the two forms of price changes. By depreciation we mean the lowering of the value of newly produced commodities incident to increasing productivity. By devaluation we mean the fall in the prices of existing commodities below their values incident to falling demand.

During the accumulation process both the elements of capital and finished commodities are depreciated with the rise in productivity. This is a secular tendency incident to the rising organic composition of capital. During the upswing they may be overvalued with rising demand. Of this we shall speak in more detail in our analysis of the cycle. During the downswing, capital

and commodities are both depreciated and devalued. The elements of capital are depreciated because increasing productivity lowers the value of subsistence goods, and therefore, of labor power, and of means of production. Depreciation is hastened after the crisis when the competitive struggle eliminates marginal firms, and stimulates rationalization and "new combinations".

The elements of capital are devalued, that is their prices fall below their depreciated values, because the sharp fall in demand for both existing physical capital and labor power following the crisis presses down their prices.

This depreciation and devaluation of capital, or the lowering of costs, is an important countertendency to breakdown. Of course, depreciation and devaluation affect finished commodity prices as well as cost prices. For the individual capitalist, what is important is specifically the relation of cost prices to the prices of his finished commodities, a relation which depends to a large extent on what happens to the demand for his product. But to the extent that the continual depreciation or devaluation of capital are not immediately reflected in lower commodity prices, individual short-run gains, and the prospect of these gains, gradually increases the stimulus to accumulate, so that the downswing is not cumulative indefinitely.

## 2. Increase in the Rate of Surplus Value

The increase in the rate of surplus value is but another expression for the depreciation and devaluation of labor

power. We express these changes in the specific terminology of the rate of surplus value, because the effect of the rise in the rate of surplus value on the rate of profit, that of counterbalancing the effect of the rise in the organic composition of capital, is so clear-cut.

The rate of surplus value increases both with the reduction of that part of the working day which must be devoted to the reproduction of the value of labor power, and with the intensification of labor which increasing productivity makes possible. During the downswing, the rate of surplus value is further increased as the increase in the reserve army makes possible a depression of wages below the value of labor power.

### 3. The Fall in the Rate of Interest

While the rate of interest plays no such strategic role in Marxian theory as it does in post-classical orthodox theory, it must be admitted into the analysis of the present level of argument.

The money rate of interest, determined by the demand and supply of money capital, is an important variable in determining the profitability of the system. In the short run when the average rate of profit is given, the rate of interest moves inversely to the rate of industrial profits; in the long run its average level is determined by average rate of profit. The long run tendency of the rate of interest is therefore to fall with the average rate of profit. During the downswing this fall is accentuated as the supply

exceeds the demand for loanable funds. Insofar as interest is a cost, the fall in the rate of interest aids in the restoration of profitability.

#### 4. Increase of Interest-Bearing Capital

The growth of interest-bearing capital (Marx's "stock capital") checks the fall in the rate of profits, so far as bond interest, which is below the average rate of profits, is not included in the calculation of the average rate. Thus the increase in the organic composition of the total capital, of which the growth of transportation and public utilities is an important cause, is not reflected in a proportionate fall in the rate of profits.

In the long run, this absolute growth of interest-bearing capital checks the fall in the rate of profits. It has no immediate effect in restoring profitability in the downswing, except to the extent that the maintenance of investment in interest-bearing capital absorbs some of the surplus capital.

#### 5. Increase of Population

The increase in population is a countertendency to breakdown, so far as it lengthens the upswing, and checks the downswing of the accumulation process. A rapid growth of population extends the limit to the production of surplus value. The greater the rate of increase in the population, the greater can be the rate of accumulation of variable capital, and the total



surplus value produced. Thus, while at any given level of production, the accumulation process itself produces a reserve army of surplus population, this level of production itself depends on the growth of the working population.

As a long-run tendency, an high ~~xxxxxx~~ rate of population growth inhibits the rise in the organic composition of capital, and checks the fall in the rate of profit. In the downswing, it swells the reserve army and raises the rate of surplus value.

B. Countertendencies which restore profitability through the world market

1. Foreign Trade

Foreign trade is a means by which the fall in the rate of profit is checked, insofar as it (a) furnishes the elements of constant capital and subsistence goods at lower costs, (b) makes it possible for a capitalist country to extract surplus value produced abroad via an unequal exchange of values. This unequal exchange is possible when commodities exchange at their prices of production rather than at values, and the organic composition of capital in the home country exceeds that of the foreign country. Thus, the commodities of the former are sold above, those of the latter below, their values.

It should be noted that this result follows only from our next countertendency, the export of capital. Marx points out that, contrary to the opinion of Ricardo, foreign trade may be a means for increasing the rate of profit, apart from its influence

in reducing costs. <sup>23</sup> But he does not make it clear, nor does  
 Grossman, <sup>24</sup> that this unequal exchange is possible only with capi-  
 tal export, which averages the rate of profit. Trade alone cannot  
 furnish extra surplus value because the condition for the realization  
 of extra surplus value is the equalization of profit rates brought  
 about by mobility of capital. <sup>25</sup>

## 2. Capital Export

The Marxian theory of capital export, like that of <sup>26</sup>  
 classical economics, especially as developed in John Stuart Mill,  
 explains that capital mobility checks the fall in the rate of profit  
 in the advanced capitalist country. The export of capital is ad-  
 vantageous to the home country in two ways, first by furnishing  
 higher profits on surplus capital, before an international average  
 rate of profit is established, and second, by making possible the  
 unequal exchange between the home country and the country of lower  
 organic composition of capital, once this average rate is established.

Moreover, to the extent that monopoly restricts accumula-  
 tion at home it further stimulates the export of capital. This ex-  
 port of capital follows even if the average rates of profit are  
 equal, if the marginal rates of profit at home is below that abroad.  
 Although the average and marginal rates of profit are equal in

23. Capital, III, 278.

24. Grossman, op. cit., 429-36.

25. On this point and others relating to the influence of the world  
 market, cf. Sweezy, Theory of Capitalist Development, Chs. XVI, XVII.

26. Principles of Political Economy, 738-9.

purely competitive industries, this is not the case with monopoly.

The export of capital is a countertendency which operates throughout capitalist development. As a means of relieving the plethora of capital after a crisis, it is one of the effective means of checking the tendency to breakdown.

The net effect of all these countertendencies, both internal and external, is to check the fall in the rate of increase of total profits during the upswing, and to hasten the fall in the rate of decrease of profits during the downswing. There is an important difference in their effect in these two periods; they grow increasingly less effective in the course of the upswing, and increasingly more effective during the downswing.

It is not necessary to assume that all new investment ceases during this downswing. It is sufficient to assume a positive but decreasing rate of accumulation and a continual depreciation and devaluation of the value of capital to show that the mass of profit continues to fall throughout the downswing. But at some point during the downswing the net effect of the countertendencies is to restore profitability sufficiently to engender a new wave of accumulation. Thus we see that the breakdown tendency of the capitalist economy is arrested. Our next problem is to see if the cycle we have deduced is recurrent.

### III. The Cycle

In this section we attempt to give a more complete picture of the business cycle on the basis of the analysis thus far presented.

The cycle measures general economic activity by the specific variable, the mass of profits.

It will be readily seen that there is an asymmetry between the picture of the upswing, which we deduced on logical grounds alone, and the picture of the downswing, which can be deduced only with reference to concrete experience. But this asymmetry is enforced by the nature of the subject matter. This is not to assert that the upswing is in reality more uniform than the downswing. The upswing was rigidly specified within the accumulation schema only to indicate that the fundamental change, the rise in the organic composition of capital, which is of greater importance than the movement in the other variables, such as prices, wages, and the rate of interest, is itself sufficient to produce a turning point in the accumulation process. The downswing, and lower turning point, on the other hand, can not be as rigidly specified within a simple model, because not one but many factors explain the termination of the downswing. The net effect of all of these countertendencies, none of which alone is adequate, is to restore the drive to accumulate. The exact result of these countertendencies is indeterminate. For example, the extent of the devaluation of capital depends on competition, the state of business confidence, the movement in the rate of interest, and the level of employment. The extent to which costs are reduced depends on the extent of rationalization and the increase in productivity. The actual gap between costs and prices, which is the decisive factor in terminating

the downswing, depends on so many factors as to make a simple downswing model more difficult. Therefore, while the upper turning point can be predicted within an exact model, the lower turning point can not. There is further asymmetry in the explanation of the upswing and the downswing, namely, the fact that just because the factors that check the downswing are so numerous, and impinge unequally on different firms, the analysis of the lower turning point must take into account the fact that revival is not the result of an automatic burst of accumulation in all sectors of the economy, but the result of the fact that with profitability restored, new investment takes place in one firm after another until revival becomes general. Thus that analysis of the downswing requires that we look behind the aggregative analysis, which is warranted as a first approximation for a simple accumulation model, only because the drive for profits and the increase in the organic composition are the most fundamental phenomena in the capitalist system and can be postulated as general in the upswing.

Once we have shown that the countertendencies do check the downswing, although their effect is unequal in different sectors of the economy, and do produce <sup>a</sup> lower turning point, we are justified in speaking of the business cycle. In the analysis of the cycle now demonstrated we can group the countertendencies together, and express their effect by a function which moves inversely with the mass of profit.

Having shown that both the upswing and the downswing tend

to reverse themselves, or that cyclical movement is endogenous, our next task is to give a more complete picture of the cycle itself. Our original upswing and downswing model, developed on different levels of abstraction to produce a cycle of unspecified duration and amplitude, can now be combined on a lower level of abstraction which deals with a generalized form of the cycle of reality. Our cycle, like every theoretical cycle, is a picture of movement in general economic activity, although the specific index is the mass of profits. This index has the advantage of showing most directly the effect of changes in the rate of accumulation, itself a function of the mass of profit.

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We begin the cycle at the lower turning point. The movements in real economic quantities in the upswing are the same as those portrayed in every cycle theory. Investment, employment,

27. By dating the cycle from the trough we do not imply that this point represents a point of equilibrium. While it is true that we can develop a concept of fluctuation only with reference to the concept of equilibrium, it is not necessary to assume that in an endogenously cyclical economy any point or none represents a state of equilibrium. This can be illustrated by the fact that although Marx deduces the accumulation process from the process of simple reproduction, because the former can be understood only in terms of the latter, this does not imply that simple reproduction represents a state of equilibrium for the capitalist economy. On the contrary, it is merely a logical possibility, which never occurs in the real system, not even at the trough of the cycle. Equilibrium, in the sense that market prices equal prices of production, is a point through which the cycle of prices which accompanies the cycle of profits must pass, but it is not a position of the economy to which the system tends to return, inasmuch as the equilibrium prices are themselves determined by the changes produced by the cycle. In dating the cycle from the low turning point, however, we do assume that accumulation, as illustrated in the upswing, is the process of logical primacy, in so far as the downswing is deduced from it.

costs, and prices rise progressively as the rate of accumulation rises, until the cost-price margin is inadequate and the upswing comes to its end. In a frictionless expansion prices and costs should fall via the cheapening effect of increasing productivity, but the upswing of reality is not the frictionless accumulation process of our theoretical model. Disproportions and frictions are enough to account for initial increases in costs and prices which then tend to spiral. Our upswing description is conventional, but there is a fundamental difference in the role we attribute to these movements of the economic quantities. The Marxian theory introduces these movements only after demonstrating that the upswing comes to a close even when prices, wages, and the rate of interest remain constant, or rise uniformly. The causal variable is the rise in the organic composition of capital. But the non-causal results, the movements in these other variables, are important in timing the effects of the underlying cause.

There is another fundamental difference between the Marxian explanation of the upswing and that of traditional literature that requires a little digression from our main argument. The Marxian theory not only rules out frictional price changes (and expectations) as causal explanations of the upper turning point, but it also rejects the "ceiling" of full employment, or that imposed by the banking system as causal explanations of the upper turning point. The latter ceiling we rule out at once as untenable since there is nothing in the logic of the capitalist process, <sup>itself</sup> to

limit the availability of credit.

The first ceiling, that of full employment, seems more plausible. In the first place, however, the very concept of full employment has no meaning unless linked to given schedules of demand and supply for labor and means of production. The only rigorous definition of full employment is that it is a point where the supply schedules of factors of production become perfectly inelastic, so that increasing payment to factors no longer elicits an increasing supply of factors.

The concept of full employment as a limit to the expansion often confuses the logic of the process with the frictions of reality, in implying that factors of production are an existing supply of goods and labor power, which is gradually absorbed during the upswing. Haberler, for example, states a typical view as to why the upswing must come to an end. In his discussion of the two phases of expansion: the first, where there are unemployed productive resources; the second, where there is full employment of resources (the latter case being for him unlikely, but a logical possibility). The picture is as follows:

So long as the supply of factors of production is plentiful and elastic, output can be increased all along the line at the same time. . . . When one category of factors after another is becoming scarce -- the transition to full employment is, of course, gradual and not sudden -- it becomes more and more difficult to expand at various points at the same time. If one industry increases its demand for means of production and succeeds in attracting laborers by offering higher wages, it lures them away from other industries. The same holds true of raw materials and semi-finished products.



The expansion of industry is possible only at the expense of a contraction somewhere else.<sup>28</sup>

The "luring away" of factors of production by the offer of higher prices plays a strategic role in most cycle theories, including those as divergent as the theories of Schumpeter and Hayek, although in the former the necessity to lure away factors of production does not imply a state of full employment.<sup>29</sup>

In reality, at any given moment, there is an existing supply of means of production and labor power. But over the period of the upswing, productive resources do not constitute a stock to be used up, but a flow which swells with each increase in output, so that general expansion is theoretically always possible even if there is full employment at every level of output. In Marxian terms, this means that in each period of production not only are all the elements of capital reproduced, but, in addition, part of the surplus value is accumulated. Therefore, the demand for resources creates even more than its own supply. Even assuming that a stage is reached where there are no new workers available,

28. Gottfried Haberler, Prosperity and Depression (third edition, Geneva, 1941), 288.

29. Cf. Schumpeter, Business Cycles, I, 131, 160-1, and Hayek, Prices and Production (second edition, London, 1935), 76 ff. Hayek's most recent cycle theory abandons, together with most of his original theory, his earlier assumption of full employment throughout. This earlier assumption was justified by the arguments that unemployment cannot be assumed because it is the thing to be explained. (Ibid., 34-5.) But the scarcity of factors also plays a strategic role in the new theory, where at approaching full employment factors are shifted from producers' to consumers' goods industries to create what appears to be an unexplained crisis. ("The Ricardo Effect," Economica, Volume IX (New Series), No. 34, May, 1942, 127-152.)

general expansion would still be possible on the basis of a higher organic composition of capital. If we now introduce the rising organic composition from the beginning of the upswing, it will be clear that in terms of physical supply, which is what is relevant for most cycle theorists, the expansion need never come to an end. We can, therefore, eliminate the "ceiling of full employment" because it is a concept which neglects the fact that economic expansion itself creates factors of production at a rate faster than these factors are absorbed.

However, while in theory the concept of "ceilings", in terms of physical supply is an inadmissible explanation of the upper turning point, in reality, ceilings do exist for the individual firm. But for the whole economy the ceiling is the inadequacy of profit, induced by the rising organic composition of capital. <sup>30</sup> The actual timing of the turning point in the cycle of reality, however, is a function of the relative changes in prices and costs, the effect of increasing productivity which lowers both costs and prices, and of increasing demand which raises them.

The picture of our cyclical downswing, as of the upswing, is very similar to that of traditional cycle literature, in that all the standard indices -- output, employment, prices, and wages -- fall.

30. In the short run, the rising organic composition need not mean large changes in the existing structure of production for individual firms, changes which were implied in our original theoretical analysis, and which presupposed, for analytic convenience only, an annual turnover of capital. More rapid expansion of producers' goods, relative to consumers' goods, is a sufficient cause of the increase in the average organic composition of capital.

Here it is not necessary to repeat why the fall does not go on indefinitely. Our countertendencies act much like the stabilizers of traditional literature to produce the lower turning point. In our theoretical model, the rate of profit may rise during the downswing, although the organic composition of capital need not fall if the rise in the rate of surplus value is sufficiently great. It is also theoretically possible that the organic composition of capital does fall, even when the technical composition of capital rises, if the price of means of production falls much faster than wages. With the increasing effect of the countertendencies as the downswing proceeds, the mass of profit falls at a decreasing rate until the lower turning point.

To complete our description of the cycle, we turn to Marx's discussion of the cycle of reality (to be distinguished from his analysis of the abstract forms of possibilities of crisis, which was discussed in Chapter 5, above). Marx's <sup>discussion</sup> is scattered throughout his work, and stresses different aspects of the real cycle at different times. As a result, casual readers of Marx not only confuse the events of the cycle with the cause of the cycle, but select different elements in Marx's description as the key variable in his cycle theory. A piecing together of the scattered description yields a picture which corresponds perfectly to the picture of reality which appears in any cycle theory.

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Marx dates the historical cycle from the crisis of 1825,

31. Preface to the first edition, Capital, I, 18.

and speaks of it as a "decennial cycle" (interrupted by smaller oscillations)<sup>32</sup> of periods of average activity, production at high pressure, crisis and stagnation.<sup>33</sup> He attributes the recurrence of cycles, as do all cycle theorists, to the effects of the cycle itself, saying that,

As the heavenly bodies, once thrown into a certain definite motion, always repeat this, so it is with social production as soon as it is thrown into this movement of alternate expansion and contraction. Effects, in their turn, become causes, and the varying accidents of the whole process, which always reproduces its own condition, takes on the form of periodicity.<sup>34</sup>

He does not examine in any detail the reasons for the specific periodicity of the "decennial cycle", but stresses the role played by the periodic replacement of fixed capital.<sup>35</sup> His dating of the cycle is ambiguous. In one place, he refers to the "melancholy period" at the opening of a new cycle after a commercial crisis.<sup>36</sup> Since Marx often refers to the entire downswing as the "crisis", it is not clear whether he dates the cycle from the

32. Marx's discussion on the turnover of capital and the length of the working period, "conditioned on the size of the orders" hints at an inventory cycle which might account for the "smaller oscillation". (*Ibid.*, II, 363.)

33. *Ibid.*, III, 694.

34. *Ibid.*, III, 695.

35. *Ibid.*, II, 210-211. This does not mean that Marx sees periodic replacement as the cause of the cycle; it means only that once the cycle is started, replacement assumes a cyclical pattern which reinforces that of the cycle. Marx accounts for the fact that replacement is economically as well as technologically determined, in stressing the role of obsolescence, but he is clearly wrong in linking the length of the cycle to the average life of machinery. However, he also implies that periodicity may be due only to the fact that replacement tends to cluster in the downswing.

36. *Ibid.*, II, 323.

upper or lower turning point. His description of the sequence of events in the cycle is very complete if unsystematic. He describes the role of credit, of speculation, and the monetary crisis in some detail, always pointing out that "that which appears as a crisis on the money market, is in reality an expression of abnormal conditions in the process of production and reproduction."<sup>37</sup>

Marx's most complete description of the cycle starts with an analysis of the effect of the increase in productivity, consequent upon the rise in the organic composition of capital, and the growing concentration of capital. Marx explains how "The mass of small divided capital is thereby pushed into adventurous channels, speculation, fraudulent credit, fraudulent stocks, crises."<sup>38</sup> During the downswing which Marx elaborates in much more detail, the profitability of the system is gradually restored, paradoxically, by the destruction of capital. The sequence of events is as follows:

But under all circumstances the equilibrium<sup>39</sup> is restored by making more or less capital unproductive or destroying it. This would affect to some extent the material substance of capital; that is, a part of the means of production, fixed and circulating capital, would not perform any service as capital; a portion of the running establishments would then close down. Of course, time would corrode and depreciate all means of production (except land), but this particular stagnation would cause a far more serious destruction of means of production. However, the main effect in this case would be to suspend the functions of some means of production and prevent them

37. Ibid., II, 365.

38. Ibid., III, 294.

39. By "equilibrium" Marx here means the conditions of expansion, not a position of equilibrium for the system.

for a shorter or longer time from serving as means of production.

The principal work of destruction would show its most dire effects in a slaughtering of the values of capitals. That portion of the value of capital which exists only in the form of claims on future shares of surplus-value of profit, which consists in fact of creditor's notes on production in its various forms, would be immediately depreciated by the reduction of the receipts on which it is calculated. One portion of the gold and silver money is rendered unproductive, cannot serve as capital. One portion of the commodities on the market can complete its process of circulation and reproduction only by means of an immense contraction of its prices, which means a depreciation of the capital represented by it. In the same way the elements of fixed capital are more or less depreciated. Then there is the added complication that the process of reproduction is based on definite assumptions as to prices, so that a general fall in prices checks and disturbs the process of reproduction. This interference and stagnation paralyzes the function of money as a medium of payment, which is conditioned on the development of capital and the resulting price relations. The chain of payments due at certain times is broken in a hundred places, and the disaster is intensified by the collapse of the credit-system. Thus violent and acute crises are brought about, sudden and forcible depreciations, an actual stagnation and collapse of the process of reproduction, and finally a real falling off in reproduction.

At the same time still other agencies would have been at work. The stagnation of production would have laid off a part of the laboring class and thereby placed the employed part in a condition in which they would have to submit to a reduction of wages even below the average. This operation has the same effect on capital as though the relative or absolute surplus-value had been increased at average wages. The time of prosperity would have promoted marriages among the laborers and reduced the decimation of the offspring. These circumstances, while implying a real increase in population, do not signify an increase in the actual working population, but they nevertheless affect the relations of the laborers to capital in the same way as though the number of the actually working laborers had increased. On the other hand, the fall in prices and the competitive struggle would have given to every capitalist an impulse to raise the individual value of his total product above its average value by means of new machines, new and improved working methods, new combinations, which means, to increase the

productive power of a certain quantity of labor, to lower the proportion of the variable to the constant capital, and thereby to release some laborers -- in short, to create an artificial over-population. The depreciation of the elements of constant capital itself would be another factor tending to raise the rate of profit. The mass of the employed constant capital, compared to the variable, would have increased, but the value of this mass might have fallen. The present stagnation of production would have prepared an expansion of production later on, within capitalistic limits.

And in this way the cycle would be run once more. One portion of the capital which had been depreciated by the stagnation of its function would recover its old value. For the rest, the same vicious circle would be described once more under expanded conditions of production, in an expanded market, and with increased productive forces.<sup>40</sup>

With this remarkably complete description of the cycle, we now turn to the next problem, that of examining the secular change in cyclical development.

#### IV. The Change in the Cyclical Pattern and the Ultimate Breakdown

Thus far our analysis gives

- (1) The tendency to breakdown inherent in the accumulation process,
- (2) The countertendencies which check the breakdown tendency and produce the cycle,
- (3) The actual picture of the cycle itself.

Our final task is to show how the exhaustion of these countertendencies alters the cyclical pattern of accumulation and brings the system to its ultimate breakdown.

The weakening of the countertendencies is a long-run phenomenon which affects both the upswing and the downswing of the

<sup>40</sup>. Ibid., III, 297-299.

cycles. But whereas in each particular cycle the countertendencies operate more effectively in the downswing than in the upswing, in the course of the secular trend made up of the cycles, the weakening of the countertendencies is more apparent in the upswing.

A. The Exhaustion of the Countertendencies

Marx explains that the increase in productivity which reduces cost is only temporarily effective in checking the breakdown tendency. So far as it operates to depreciate the elements of capital in the upswing, and thus lengthen the expansion, it at the same time hastens the accumulation process and its eventual collapse.

Moreover, the extent to which the elements of capital can be depreciated by the rise in the organic composition of capital can be expected to fall over time with the tendency towards equalization of the organic (not the technical) composition of capital, and with the growing centralization of capital, which increasingly squeezes out inefficient firms, whose normal elimination in each downswing helps to restore profitability for the whole system. As the level of productivity of different firms is equalized, there is less opportunity for individual firms to make short-run gains. In addition, the rigidity in cost-prices incident to the growth of monopoly and



trade unions is a final reason why the counteracting effect of the lowering of costs tends to wear out over time.

The counteracting effect of the rise in the rate of surplus value tends similarly to wear out. The effect of the action of trade unions and the government in reducing hours, raising wages, and taxing the profits of industry so that some part of the surplus value is returned to the workers in benefit payments, set limits to the rise in the rate of surplus value. Moreover, as the organic composition of capital rises, a given percentage increase in the rate of surplus value is increasingly less effective.

In addition, other secular tendencies such as the proportional rise in rent, in payment to unproductive workers, and in expenses of circulation constitute increasing deductions from total surplus value.

On the world market the countertendencies similarly become exhausted over time. The imperialist struggle for raw materials, markets, and sources of investment becomes intensified as the level of development of different countries is equalized. The gains of any one capitalist country are progressively diminished

as more capitalist countries enter the world market. On the one hand, foreign trade becomes increasingly less effective as a means of reducing costs, as the struggle for raw materials raises their prices. At the same time, the diversification of production in all countries (which rather than specialization, is characteristic of capitalist development) levels the cost of production of the commodities which enter into foreign trade. Further, the equalization of the organic composition of capital means that the home country is increasingly less able to realize surplus value produced abroad. The same argument holds true for the growth of monopoly in foreign trade. As the number of capitalist countries exercising monopoly power on the world market increases, the opportunity for any one country to gain at the expense of any other decreases.

This argument, it will be noticed, is entirely different from the underconsumption-imperialism theory of Luxemburg and Sternberg. The results are the same; the historical development of world capitalism limits the extent to which an individual capitalist country can prolong its life through the gain made on the world market. But the cause behind these results is not the inability to realize surplus value produced at home, but the inability to produce sufficient surplus value to maintain the accumulation process.

#### B. The Cyclical Pattern and the Secular Trend

The total effect of the exhaustion of the counterendencies is to strengthen the effect of the breakdown tendency over time.

This does not mean that cyclical downswings are necessarily longer, but that the accumulation process itself proceeds with increasing difficulty. The length of the downswing may be, and in fact is, shortened as the upswing itself must be shortened.

The pattern of cyclical development thus changes over time. With the progressive exhaustion of the countertendencies, both the duration and the amplitude of the cycle (the variation in the total mass of profits) diminish. The cycle itself peters out into stagnation. This theory of the cycle-trend relation is in flat contradiction to the so-called Marxian theory, for which there is no evidence in Marx's own work except perhaps in the Manifesto, that cyclical swings are ever greater and that after the last great boom the system will fall into dramatic collapse. On the contrary, evidence of the collapse of the system will appear at a certain stage of development when, in terms of both the mass of profit and the total output, prosperity and depression become indistinguishable.

The petering out of cyclical developments, however, does not mean a gradual approach to a state of stable equilibrium, except in the sense that death is a position of stable equilibrium. If we use the concept of equilibrium in this cyclical theory, we may say that the equilibrium condition for capitalist development is the end of cyclical development and the complete stagnation of the capitalist system. The tendency to self-destruction of the capitalist system can be seen from the fact that the tendencies

inherent in the economy drive the organic composition of capital (and, therefore, the rate of unemployment), and the rate of accumulation to one hundred per cent, the rate of increase in the mass of profit, and in the rate of profit, to zero.

However similar the results appear, our analysis is fundamentally different from the Keynesian theory of secular stagnation. Keynesian theory is essentially static and as such not even comparable to Marxian theory. Its stagnation thesis is not deduced from dynamic analysis of the fundamental laws of capitalist evolution, but from a combination of psychological propensities to save and invest, propensities which themselves need explanation, and a group of historical facts relating to population and technological change, which similarly demand explanation. The Marxian breakdown thesis is, on the contrary, step by step derived from the theory of value and a single "propensity", which is not psychologically, but socially determined, the drive for profit.

One last time it must be emphasized that our analysis is not a blueprint for the future any more than it is a picture of history. It excludes the influence of many factors which shape the course of capitalist development. Imperialist wars, for example, for which our analysis of the tendencies of late capitalist development provide ample explanation, have been excluded. In reality, the cyclical pattern is disturbed by the economic effects of war, which extend the duration and amplitude of the cycle.

Similarly, the class struggle, except for the effects of trade unions in checking the rise in the rate of surplus value,

has been neglected in this argument. In reality, the breakdown of any economic system is politically as well as economically determined. The Marxian theory of the class struggle is not in contradiction to the theory of an objectively determined breakdown. Rather, at the same time as the tendency to economic breakdown engenders the class struggle, the class struggle shapes the tendency to economic breakdown. We do not expect our economically determined breakdown tendency to reach its full realization before the free capitalist economy is replaced by socialism. <sup>or, more likely, transformed into state capitalism.</sup> But in theory, which is our concern here, the economic stagnation we have pictured is the logical result of the dynamics of capitalist development.

The conclusion of our analysis is that the laws of capitalist development inexorably destroy the capitalist economy. We started our analysis with the labor theory of value. With this tool of analysis we then showed how the law of value spurs an ever greater accumulation on the basis of an ever higher level of productivity. The contradiction between the goal of capitalist production, and the means of achieving this end, a contradiction between the drive for profits and the fall in profitability which this very drive for profits engenders, is expressed in the tendency to breakdown. We then discussed the countertendencies to breakdown which produce a cyclical development of the system but which, by their eventual exhaustion, are incapable of preventing the ultimate breakdown of the system.

No one can prove that our theory of capitalist development is "what Marx really meant." But we believe that we have demonstrated that alternative interpretations of Marx's theory of breakdown are incorrect, and that the theory of breakdown based on falling profits is the correct reconstruction of Marx's rich, if incomplete, theoretical analysis.