THE PROFIT RATE REALLY FALLS

Why capitalism can't last

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The tendency of the rate of profit to fall is a necessary consequence of the evolutionary development of the capitalist mode of production. This was explained by Marx in *Capital,* Vol. III. Yet many academicians and writers who take Marx's works as their primary field of interest do not agree. We hope to explain and defend Marx's original conception of the *law of the tendency of the rate of profit to fall* in opposition to the arguments of Paul Sweezy, advanced in his 1942 book, *The Theory of Capitalist Development*. Sweezy, who seemed to many to be a leading proponent of Marx's economic ideas in the post–WWII period, was the founding editor and publisher of *Monthly Review* magazine. Like many other left-wing writers of that period, Sweezy turned out to be an opponent of Marx's theory disguised as a Marxist, and played a key part in misleading many students of Marxism of the late 20th century.

INTRODUCTION

At the outset it will help to briefly review the basic features of Marx's law of the tendency of the rate of profit to fall. The law is inseparable from the evolution of the capitalist mode of production itself, so that if we understand the unimpeded course of development of this law, we will gain insight into the historical rise and decline of the capitalist system, which Marx often referred as the capitalist mode of production. The practical significance of the law of the tendency of the rate of profit to fall is that the rate of profit must fall in the normal course of events as the capitalist mode of production runs its course, passes through the stages of maturity and decline, and approaches its historical demise.

We must keep in mind that there are a number of counteracting influences that hinder the force and pace of development of the falling tendency of the profit rate, but we will show why these counterforces cannot, in the final analysis, prevent the profit rate from falling. Once the law is fairly understood, it will be seen why it must inevitably dominate over the countertendencies.

After the preliminary outline of the features of the law, we will take up the views of Paul Sweezy and explain where he falls short of correctly representing the law in his argumentation. Ben Fine and Laurence Harris, two academic Marxist writers, will also be briefly countered. These latter two are scholars who have followed in Sweezy's footsteps on this question, and have added their own refinements. It so happens that the most sophisticated critics of Marx tend to be those who are the most familiar with his writings, and they are generally writers who consider themselves to be Marxists, or who describe themselves as Marxists. Many of them have managed to find positions in the academic world. We hope to demonstrate that Marx has the decisive upper hand over these latter-day misinterpreters of his ideas.

The tendency of the rate of profit to fall is an important consequence of the course of development of the capitalist mode of production, and one that, in its dependency of the inner logic of capital itself, demonstrates the historical limitedness of this form of society. Marx's analysis of the operation of this tendency has been openly attacked by bourgeois economists (Eugen Bohm von Bawerk, *Karl Marx and the Close of His System,* 1896, for example) whose unhistorical theories assume the perpetual existence of the capitalist mode of production. Within the writings of these opponents of Marxism there are occasional references to a general decline of the profitability of capital, for whatever reason. While the bourgeois economists see themselves responsible for putting a good face on an exploitative system, nonetheless sometimes Marx commented this way on the state of mind of those economists who find themselves confronted with the possibility of a long-term decline in the profit rate:

"But the main thing about their horror of the falling rate of profit is the feeling that capitalist production meets in the development of its productive forces a barrier which has nothing to do with the production of wealth as such; and this peculiar barrier testifies to the limitations and to the merely historical, transitory character of the capitalist mode of production; testifies that for the production of wealth, it is not an absolute mode; moreover, that at a certain stage it rather conflicts with its further development." (Marx, 1962, p. 237)

As the world capitalist crisis tightens its grip, the stifling feeling of weakening profits, low interest rates and increasingly risky or non-performing assets weighs ever more heavily on the minds of capitalists throughout the world. For the propertied class, and the economists who struggle to serve them (with little or no success), it is terrifying to imagine that a long-term decline of production, exchange and profitability could be the outcome of an underlying tendency rooted in the nature of capitalism itself. Most of them would deny such a thing, if given the opportunity. Faced with a severe squeeze on profits, the main response is that this is temporary. Any number of immediate or indirect causes can be pointed to: excessive taxes and government regulations, overcompensation of employees, higher costs of raw materials and overhead, bad international trade agreements, political/legal discrimination against companies or sectors of the economy, illegal practices of competitors, etc. Instead of probing the inner structure of capital and its laws of evolution, their daily experiences teach them to confine their thinking within this narrow framework of conflicting influences that forms the everyday ebb and flow of economic relations. Marx commented on the habits of thought that developed among the capitalists and those close to them: their lawyers, advisers and economists:

". . . it is just as natural for the actual agents of production to feel completely at home in these estranged and irrational forms of capital-interest, land-rent, labor-wages, since these are precisely the forms of illusion in which they move about and find their daily occupation. It is therefore just as natural that vulgar economy, which is no more than a didactic, more or less dogmatic, translation of everyday conceptions of the actual agents of production, and which arranges them in a certain rational order, should see precisely in this trinity, which is devoid of all inner connection, the natural and indubitable lofty basis for its shallow pompousness." (Marx, 1962, p. 809)

For the economists, once a problem is recognized, there is always a solution, or a range of potential solutions. But these supposed solutions are derived from the same superficial and semi-illusory categories that they are constantly juggling in their attempts to explain the world. Thus, when the economy suffers from slow growth, they offer recommendations for tax cuts, currency market manipulations, government spending deficits, stimulatory infrastructure spending, loosening credit requirements, lowering interest rates, sovereign bond buybacks, more advantageous trade pacts, technological modifications in production and commerce, etc. There always seems to be a way out of the dilemma. But at a certain point, late in the historical evolution of capitalism, as the crisis drags on, it seems to them that nothing works. Profit rates cannot be restored to their previous levels. A sense of hopelessness takes hold, although a recovery is generally predicted sooner or later. And even though they cling to the belief that capitalism is, in principle, a permanent and fairly stable system, they begin to doubt. And, under certain circumstances, doubt can lead to panic.

Marxists, on the other hand, are able to explain the historically transitory character of capitalism. Marx's study of the inner laws of development of the capitalist mode of production began with an evolutionary conception of change over time as a result of the unfolding of increasingly destructive forces. This approach recognizes the historical reality of the birth, the death, and the transitory nature of all social systems. The mind of God might be eternal, but Marx was able to dispense with such unearthly speculations. He was devoted to the scientific understanding of social phenomena. As for capitalism, it is the tendency of the average rate of profit to fall over the long run that explains its historically temporary character. To understand the operation of this tendency is to come to grips with the logical dynamic of a mode of production that lives: like an organism or a species, it is born, it grows, it matures, it ages and ultimately becomes overwhelmed by its own inner contradictions. It can give rise to new forms of production and exchange, and thus perpetuate civilization on the earth for centuries to come. But it has no mechanism for rejuvenation or resuscitation of a dying system. We might add that although capitalism itself dies, society as a whole, mobilizing its reserves of human solidarity and technological creativity, perseveres, and humanity reaches a higher stage of development.

But the law of the tendency of the rate of profit to fall does not function openly or constantly; it is not a mechanical process. It is a tendency which makes its impact felt on the surface of events in an unpredictable way, with many reversals and interruptions. The action of the law generates counteracting forces which Marx analyzes. But it continues to gather strength the longer, and the more completely, the system develops is inner potential.

The more capital is developed as the exclusive form of the production of the world's goods and services, and the more production corresponds to the requirements of capital, the more does the tendency of the rate of profit to fall express itself as an actual reduction in average profits worldwide, and thus acts as a practical barrier to the further development of the productive forces as well a trigger to intensify the class struggle.

DEFINITION OF TERMS

The falling rate of profit is rooted in the *increasing productivity of labor* as it develops under capitalism. As Marx explained,

". . . the level of the social productivity of labor is expressed in the relative extent of the means of production that one worker, during a given time, with the same degree of intensity of labor power, turns into products. The mass of means of production with which he functions in this way increases with the productivity of his labor. But those means of production play a double role. The increase of some is a consequence, that of others a condition, of the increasing productivity of labor. For example, the consequence of the division of labor (under manufacture) and the application of machinery is that more raw material is worked up in the same time, and therefore a greater mass of raw material and auxiliary substances enters into the labor process. That is the consequence of the increasing productivity of labor. On the other hand, the mass of machinery, beasts of burden, mineral manures, drain-pipes, etc., is a condition of the increasing productivity of labor. This is also true of the means of production concentrated in buildings, furnaces, means of transport, etc. But whether condition or consequence, the growing extent of the means of production, as compared with the labor power incorporated into them, is an expression of the growing productivity of labor. The increase of the latter appears, therefore, in the diminution of the mass of labor in proportion to the mass of means of production moved by it, or in the diminution of the subjective factor of the labor process as compared with the objective factor." (Marx, 1977, p. 773)

Within the capitalist regime, the means of production are not merely physical objects "implements, machinery, buildings, raw materials, etc." but are the material carriers of the value invested by the owners of capital in order to produce profits. This part of the capital is called by Marx *constant capital*, since the value of this part of capital is not a source of new profit, or added profit, for the capitalists. The value of constant capital is merely preserved by the laborers in the process of production, and passes unchanged into the value of the product. Whatever value this constant capital represents is paid for by the capitalists in an exchange of equal quantities of value. The other part of the value advanced for the purposes of profit-making Marx calls *variable capital*, to indicate that it is this part of the capital-value that provides additional value so as to render an increase in the value of the whole capital. Variable capital is exchanged for labor power, which passes into the hands of the workers in the form of wages. (Wages represent the value of labor power.) But what is really obtained by the capitalists in exchange for variable capital is living labor which creates more value in production than is paid for in the form of wages. The value created by the workers in the process of production, on average, is greater than the wages they receive in exchange for their laboring capacity.

Since the value created in production, on a daily basis, exceeds the daily value of the variable capital which corresponds to wages, there always remains a portion of new value, or unpaid labor value, provided by the laborers to the owners of the means of production. This increment Marx calls *surplus value*. The ratio of the surplus value to the variable capital is the rate of surplus value (or rate of exploitation), and the ratio of the surplus value to the whole advanced capital, constant and variable, is the rate of profit.

The tendency of the rate of profit to fall is a consequence of the long-term increase in the value of the constant part of capital in relation to the value of the variable part. As Marx indicated, this changing ratio is both consequence and condition of the rising productivity of labor, which is the increasing material output produced by the workers per hour. The increase of constant capital in relation to variable capital, which results from the growth in the productivity of labor, Marx calls the increase in the *organic composition of capital*.

However, since capital exists as commodities which are use values (material objects which serve some purpose for consumption, or for further production processes) with a given amount of exchange value attributed to them, the organic composition of capital must be recognized as being the result of changes both in use value and in exchange value. As Marx explained,

"The composition of capital is to be understood in a twofold sense. As value, it is determined by the proportion in which it is divided into constant capital, or the value of the means of production, and variable capital, or the value of labor power, the sum total of wages. As material, as it functions in the process of production, all capital is divided into means of production and living labor power. This latter composition is determined by the relation between the mass of the means of production employed on the one hand, and the mass of labor necessary for their employment on the other. I call the former the value composition, the latter the technical composition, of capital. There is a close correlation between the two. To express this, I call the value composition of capital, in so far as it is determined by its technical composition and mirrors the changes in the latter, the organic composition of capital. Wherever I refer to the composition of capital, without further qualification, its organic composition is always understood." (Marx, 1977, p. 762)

If a manufacturing capitalist hires many laborers, who work with simple tools, most of the advanced capital is in the form of variable capital, and there is a relatively small constant capital value. In this case the rate of profit is high, since all the surplus value produced by these laborers is appropriated by the owner, and the ratio of the appropriated surplus value to the advanced capital is relatively high. If, on the other hand, the capitalist purchases a highly mechanized productive apparatus, and hires relatively few workers to operate it, most of the capital advanced is non-profit-yielding constant capital, and the variable capital advanced to purchase the labor power is relatively small. In this case, the ratio of the surplus value produced by the few workers to the whole advanced capital is relatively low. Thus, as long as the average organic composition of the total social capital continues to rise, as a result of advancing productivity of labor, the value of the constant capital increases in relation to the value of the variable capital, and the rate of profit falls.

The rate of profit is the ratio of the surplus value appropriated by the capitalist, given the sale of the commodities at prices which reflect their value. As we indicated above, competition forces the capitalists to adopt more modern and productive equipment and methods, thus advancing the organic composition of capital. It is assumed here that surplus value is produced only by the workers in the process of production, not by the elements of constant capital. This conclusion is derived from an analysis of competition, which reveals that products are sold at prices which correspond to their values. If the elements of constant capital were sold, on average, above their value, thus signifying a profit for their seller, or below their value, signifying a profit for their buyer, this would annul the laws of price competition, and thus could not be a sustainable feature of commodity exchange. In practice, cheating does occur, but not as a basic law that governs the economic system in capitalist society. The existence of profit cannot be explained as generalized cheating, or robbery, because if all capitalists robbed one another, the robbery of one would be balanced by the robbery of another, and in the end these transfers of value from one to another would cancel out. In the end, taking from one and giving to another cannot explain the creation of new value, nor can it explain how a social regime can reproduce itself and persist from generation to generation.

PRODUCTIVITY AND COMPETITION

Improvements in productive technology which boost the productivity of labor are driven by competition among the various capitalist enterprises within each branch of industry. Competition, in the final analysis, is price competition. As Marx indicated,

"Other things being equal, the capitalist's commodities can only command a more extensive market if their prices are reduced. He will therefore sell them above their individual value but below their social value. . . ." (Marx, 1977, p. 434) And further:

"No capitalist ever 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. Yet every such new method of production cheapens the commodities. Hence, the capitalist sells them originally above their prices of production, or, perhaps, above their value. He pockets the difference between their costs of production and the market prices of the same commodities produced at higher costs of production. He can do this, because the average labor time required socially for the production of these latter commodities is higher than the labor time required for the new methods of production. But competition makes it general and subject to the general law. There follows a fall in the rate of profit—perhaps first in this sphere of production, and eventually it achieves a balance with the rest—which is, therefore, wholly independent of the will of the capitalist." (Marx, 1962, p. 259)

The improvement of technology, or the better organization of production implemented by the capitalist, with the help of his administrators and engineers, must reduce the total costs of producing a given quantity of commodities. If a new machine is purchased to replace living labor, the labor value represented in the machine must be less than the labor replaced by the machine. In this way the cost of producing a given quantity of commodities is less. The total labor required to produce the given commodities "both the labor time objectified in the means of production and that expended in the immediate process of production" is lowered. Marx wrote,

"With all application of machinery (let us initially look at the case such as it arises directly, that a capitalist puts a part of his capital into machinery rather than into immediate labor) a part of the capital is taken away from its variable and self-multiplying portion, i.e. that which exchanges for living labor, so as to add it to the constant part, whose value is merely reproduced or maintained in the product. But the purpose of this is to make the remaining portion more productive." (Marx, 1973, p. 819) Elsewhere Marx noted:

"If a machine which cost 100 working days to make replaced only 100 working days, then it would in no way increase the productive power of labor and in no way decrease the cost of the product." (Marx, 1973, p. 765)

Competition enforces the lowering of prices of commodities, which can only be achieved in the long run by lowering their values. Thus mechanization, the replacement of living labor by machinery, must be carried out in such a way that the total labor time socially required to produce a given commodity is less than it was before the new productive equipment was introduced. The problem of reducing labor time through better machinery, equipment or organizational methods is a problem of science and its application to production. Although new technology may sometimes be introduced that raises the labor time required for the production of particular commodities, this is only possible as an exception, and cannot generally improve the competitive position of the capitalist who introduces such technology. The battle of competition is won by the capitalist with the lowest production cost.

SUBSTITUTION OF MACHINES FOR LIVING LABOR

However, it may not always be clear why technical innovation, automation or mechanization in the final analysis must necessarily increase the mass of the means of production in relation to living labor, i.e. increase the technical composition of capital. Paul Sweezy, for example, in a 1981 lecture, tries to build a case for the possibility of substantial growth in the productivity of labor without substituting machinery for living labor. He argues:

". . . Marx's law of the falling tendency of the rate of profit was rooted in the conditions of nineteenth-century capitalism. But it must be added that it loses plausibility when applied to the fully mature capitalism that emerged in the twentieth century.

". . . The way for capitalists to increase labor productivity (and hence raise their rate of profit) can no longer be assumed generally to be through substituting machinery for living labor. It may equally well be through substituting more productive machines and processes." (Sweezy, 1981, p. 52) To bolster this assertion, he then quotes Capital, Vol. I, where Marx states:

"A part of the functioning constant capital consists of instruments of labor such as machinery, etc., which are not consumed, and therefore not reproduced or replaced by new ones of the same kind until after long periods of time. . . . If the productiveness of labor has, during the using up of these instruments of labor, increased (and it develops continually with the uninterrupted advance of science and technology), cheaper machines, tools, apparatus, etc., replace the old. The old capital is reproduced in a more productive form, apart from the constant detail improvements in the instruments of labor already in use." (Marx, 1977, p. 753)

But Marx's judgment here does not support Sweezy's view that substituting more productive for less productive machines differs from substituting machinery for living labor. These two processes are one and the same. The expression: "substituting more productive machines and processes" cannot mean anything other than: "substituting machines (or processes) for living labor." A more productive machine is one which makes possible the production of more units of physical output per worker-hour, which is the same as saying that it produces the same number of units with less labor time. In other words, the ratio between machinery and living labor increases, or, machinery is substituted for living labor. If one sets up a comparison between labor time, on the one side, and the mass of tooling and materials on the other side, it soon becomes apparent that as the tooling improves the ratio changes with less and less labor time in relation to the mass of material on the other side.

And it makes no difference whether this technological progress occurs in the nineteenth, twentieth, or any other century. Modern machinery is a qualitative advance in the evolution of the instruments of labor, to be sure, but this advance, in itself, from its earliest days, has always involved the substitution of tools, or systems of tools, or instruments, for living labor. The advancing productivity also subsumes the introduction of more efficient and cheaper kind of motive force: from the human back, to the ox, to the water-wheel, to the steam engine, to the internal combustion engine, to the modern electrical grid running on fossil fuels. And the process of substituting better, more effective, tools for the ones currently in use, is quite synonymous with the substitution of tools, equipment, instrumentation, etc., for labor. Marx has pointed out:

"The increasing productivity of labor (insofar as it is connected with machinery) is identical with the decreasing number of workers relatively to the number and extent of the machinery employed." In order to illustrate this principle, he continues, saying: "Instead of a simple and cheap instrument a collection of such instruments (even though they are modified) is used, and to that collection has to be added the whole part of the machinery which consists of the moving and transmitting parts; and also, the materials used (like coal, etc.) to produce the motive power (such as steam)." (Marx, 1971, p. 365)

Here Marx draws attention to the mechanization of handicraft industry, and not to the further mechanization of machine industry. But the increasing use of improved machinery and more efficient productive methods only perpetuates and deepens the initial mechanization on its own basis, institutionalizing it, and spurring the growth of technological research and development, which, in their turn, provide the knowledge that feeds more revolutions in productive technology. Just as the first machine replaces a certain number of workers engaged in handicraft production of the given article, a better machine replaces yet more. Marx maintained:

"It is an incontrovertible fact that, as capitalist production develops, the portion of capital invested in machinery and raw materials grows, and the portion laid out in wages declines." (Marx, 1971, p. 364)

COUNTERTENDENCIES TO THE FALLING PROFIT RATE

The law of the tendency of the rate of profit to decline thus assumes a capitalist system in which competition cannot be annulled, and in which, therefore, improvements in the productivity of labor are promoted by the unavoidable price competition. But many who regard themselves as Marxists, including Sweezy, question or deny the validity of the law of the tendency of the rate of profit to fall, on the grounds that the forces which tend to raise the rate of profit, thus counteracting its fall, might permanently or indefinitely uphold the profit rate. The counteracting influences to the falling profit rate were outlined by Marx in chapter 14 of Capital, Vol. III. They include the increasing intensity of exploitation, the cheapening of the elements of constant capital, and others, and more could be added, beyond those mentioned in Capital, as Marx indicated. But none of these countertendencies can permanently or definitively obstruct the decline in the rate of profit, and this becomes clear once it is seen that they function as part of a process in which no one tendency can act singly or independently. They are parts of a dynamic system of interacting tendencies, each one conditioning the others, which continue evolving in the direction of an ever-greater disproportion between the productive apparatus and living labor—and it is this *interdependency* of the tendencies which both promote and retard the falling profit rate that Sweezy overlooks.

It will be explained below why this conclusion is inescapable, but at this point a secondary issue should be addressed which may be helpful in establishing the framework for this discussion. And that is this: recognizing that the tendency of the rate of profit to decline is not a mechanical or uniform process, and acknowledging that its actual operation is hindered and interrupted by countervailing forces, it is beside the point to attempt to predict how rapidly the rate of profit might fall in any given period of capitalist development. This paper focuses on explaining the essential character of capitalist production, and to see the law as part of the internal necessity of its development. Such questions as: whether the profit rate is currently falling, and if so at what rate, or, what has been the actual measured rate of profit for the past 100 years, etc., are questions which should be set aside as not relevant to the problem posed here. These questions are not unimportant, but they fall outside the scope of this paper. The law states that the profit rate must fall only in the final analysis and in the long run.

"INDETERMINACY" IN THE DIRECTION OF THE PROFIT RATE

As mentioned above, some who criticize Marx's view of the falling rate of profit tend to accept that the tendency exists but believe that its operation is counterbalanced by the opposing forces in such a way that the ultimate direction of the profit rate is indeterminable. An example of this approach is in Rereading Capital, by Ben Fine and Laurence Harris. The authors state:

"When Marx refers to an economic law he explicitly means a tendency. He makes this clear in the very title of Vol. III, Chapter 13, and the first paragraph of Chapter 14; and elsewhere (for example Capital, Vol. III, p. 175) he states that it is the meaning of all economic laws. But the meaning of a tendency is understood differently by different writers. One meaning in the present context is that if one collects data on the rate of profit over a definite period of history one will observe a definite downward trend (or regression line). We shall call this an 'empirical tendency.' A second meaning is that if one abstracts from the counteracting influences one identifies an 'underlying' direction of movement of the rate of profit. This interprets a tendency as a proposition developed at a certain level of abstraction which by itself yields no general prediction about actual movements in the rate of profit. Actual movements depend on a complicated relationship between the tendency and the counteracting influences which have been abstracted from—their particular balance at particular times. We shall call this an 'abstract tendency.' The latter is Marx's concept of the law of the TRPF. The observable effect of the law cannot be a simple tendency for the actual rate of profit (in value or price terms) to fall. . . . In short, the law of the TRPF is an abstract and not an empirical tendency." (Fine and Harris, p. 64)

In this passage Fine and Harris introduce a scientifically impermissible gap between the abstract and the empirical. If the effects of the law can never be empirically observed or verified, it is not merely "abstract," it is non-existent, i.e. there is no "law" at all, but only a mistaken theory. Abstraction is merely a process of setting aside—temporarily—the multiple elements of the dynamics of a process in order to recognize and define the inner law at its core; this is only done to simplify the exposition. The mode of explanation has no effect on the law itself; it is just a pedagogical device. The law itself is an objective functional process within the capitalist mode of production, whether or not economists recognize it. The law embraces all the effects of the growth of the organic composition of capital, including all the tendencies that counteract the falling rate of profit, but in explaining this to the students of *Capital* it is important to begin at the beginning, explaining the categories of capital's evolution as Marx did in his book. One must understand first why the tendency of profit rate to fall is inherent in the law of value under capitalist production. Fine and Harris misinterpret the question from the beginning by trying to establish a difference between an "abstract tendency" and an "empirical tendency." This has nothing to do with Marxism, and everything to do with a career mired in the bourgeois university.

The operation of the tendency over time in the normal course of development produces changes in the outward appearance and daily functioning of the system. These changes are not apparent in the economic statistics of a few years or even a few decades, but in the long run the falling profit rates produce deeper and more extended crises of production and exchange. The rate of profit and the composition of capital are trends that can be identified, observed and measured, provided that the metrics used in the measurement are compatible with the law of value. When any effective regulating principle is defined in this way, as a law, the observable phenomena which follow upon the action of this law will serve as a test to determine whether the law itself is real or illusory. In other words, the rate of profit must fall in life, or the law itself is incorrect. Of course, this does not mean that it must fall continuously. The operation of the law is discontinuous, but in the long run it is unidirectional and irreversible.

Fine and Harris are familiar with this argument, and this is how they respond to it:

"But if Marx was not predicting an empirical tendency, if the rate of profit in value or price terms may go up, down, or neither over any particular time period, why say that its movements are subject to a law? At one level we have given an answer—the law refers to an abstract tendency not an empirical tendency. The substantive problem posed by Hodgson (1977), for example, is what is the significance of a law if it does not offer simple predictions of an empirical trend? The point, which the question fails to grasp, is that an abstract tendency does have a connection with observable phenomena even though it does not involve simple predictions of trends. The TRPF and tendency for counteracting influences to operate actually exist in capitalism in contradictory relationship with each other. . . . Indeed, particular movements in the actual observable rate of profit are associated with these cycles. At times, the rate of profit will actually fall, at others it will actually rise. . . . The point is simply that these definite movements in observable phenomena are the complex ultimate result of contradictions between abstract tendencies; they are not the simple empirical tendency of falls in the rate of profit which only writers such as Hodgson would endow with the title 'law'." (Fine and Harris, p. 71)

Here the writers seem to indicate that there is a link between law and observable phenomena, but now they have begun to regard the "law" as "the law of the tendency of the rate of profit to rise or fall depending on circumstances." The ultimate result in the long run is that the direction of the rate of profit is uncertain. This is not at all what Marx had in mind, nor what Marx explained. Fine and Harris conclude that the actual direction in the rate of profit is indeterminate, since, in their view, the strength of the rising organic composition of capital is counteracted by an equally strong array of opposing influences. Perhaps without knowing it Fine and Harris are attracted to the idea of the perpetual existence of a capitalist system that has no decisive barrier to its future development.

This is basically the same position taken by Paul Sweezy in his book, The Theory of Capitalist Development, in which the argument is advanced much more clearly and extensively than in Fine's and Harris's book.

MARX'S THEORY AND ITS MODE OF PRESENTATION

In The Theory of Capitalist Development Sweezy's first criticism of Marx (on the falling profit rate) seems not to deal with the substance of the theory, but with the manner in which Marx chose to present his case in the 13th Chapter of Capital, Vol. III. Here Sweezy begins to confuse the economic theory with the method of exposition of the theory. He argues:

"We have also seen that the tendency of the rate of profit to fall is deduced by Marx on the assumption that the organic composition of capital rises while the rate of surplus value remains constant. There seems to be no doubt about the propriety of assuming a rising organic composition of capital. Is it justifiable, however, to assume at the same time a constant rate of surplus value?" (Sweezy, 1942, p. 100)

At the beginning of Chap. 13, Capital, Vol. III, Marx illustrates the principle of the law with a table showing that the rate of profit falls to the same degree that the value composition of capital rises. For the purposes of demonstration, Marx assumes a constant working day, a constant number of workers, and a constant rate of surplus value. (He also assumes no differences in the turnover rate or differences in the rate of consumption of fixed capital—the same simplifying assumptions that he used for his table in Chap. 9.) He is here only interested in introducing his readers to the most simplified model of the relationship between the value composition of capital and the profit rate, abstracted from all modifying and counteracting factors. Once he presents the central concept to the reader in this way, he then comes back to reexamine the model, showing the influences of other tendencies, including changes in rate of surplus value.

Yet Sweezy does not believe it is scientifically legitimate for Marx to isolate a particular relation in this way, provisionally leaving aside the action of other forces for the purpose of exposition. He maintains,

"In the first place, our whole analysis up to this point leads us to expect a rising rate of surplus value. . . . The assumption of a constant rate of surplus value with rising labor productivity appears to neglect this effect. . . . It seems hardly wise to treat an integral part of the process of rising productivity separately and as an offsetting factor; a better procedure is to recognize from the outset that rising productivity tends to bring with it a higher rate of surplus value. Furthermore, this is what Marx usually does." (Sweezy, 1942, p. 101)

Marx of course "recognized" the effect of rising productivity on the rate of surplus value, and devoted a large part of Chap. 14 to it. As labor becomes more productive, the value of the workers' means of subsistence falls (provided that the quantity of commodities required by the workers "the real wage" holds constant). Assuming a constant real wage under these conditions, and a constant working day, the rate of surplus value rises. Yet for the purposes of the exposition in Chap. 13, Marx sets aside the rising rate of surplus value. Marx needed to first clarify the essence of the law by giving a preliminary explanation of the essence of the process, abstracting from the corollary features; this was done in Chap. 13. Then in Chap. 14 the complicating and modifying factors—counteracting influences—are elucidated, and it becomes clear how they are completely bound up with the normal evolution of the law itself.

And yet Sweezy says it is "better" to "recognize from the outset that rising productivity tends to bring with it a higher rate of surplus value." If, indeed, Marx had recognized this "from the outset," how would that have affected Marx's method of explaining the law and its complications? Marx is directing his attention to the reader of *Capital*. Wouldn't it be “better” for Marx to explain it in such a way that the reader's comprehension is optimized? The subject matter was presented in a logical manner so as to lead the reader from the simpler conceptions, step by step, to higher levels of complexity. Again, one should not confuse the law with the explanation of the law. It is a matter of organizing the exposition so that the reader can grasp the main principle of the relationship, and later see how the other processes affect the originally defined theory.

Marx makes this claim in Chap. 13: "it is thereby proved a logical necessity that in its development the general average rate of surplus-value must express itself in a falling general rate of profit." (Marx, 1962, p. 209) But if, as Marx formerly stated, a rise in the rate of surplus value counteracts the falling rate of profit how is that, in the end, this growth of surplus value "expresses itself" in a falling rate of profit? We will return to this below.

In Chapter 14, Marx deals with each of the defined processes which counteract and obstruct the operation of the law of the tendency of the rate of profit to fall, in each case integrating the effect of these processes into the schema previously developed:

"The rise in the rate of surplus-value is a factor which determines the mass of surplus-value, and hence also the rate of profit, for it takes place especially under conditions, in which, as we have previously seen, the constant capital is either not increased at all, or not proportionately increased, in relation to the variable capital. This factor does not abolish the general law. But it causes that law to act rather as a tendency, i.e., as a law whose absolute action is checked, retarded, and weakened, by counteracting circumstances." (Marx, 1962, p. 227)

Here is Sweezy's limitation: he fails to examine the interrelation of the counteracting forces to understand how one tendency can both spur the operation of the law while at the same time mitigating its operation. He approaches it by viewing each tendency in isolation, as if one tendency has this effect, the other has that effect. But the law unfolds as the composite effect of multiple influences. The law, as it develops in life, is a complex, heterogeneous process made up of number of corollary processes. These corollary processes never achieve independence, for they are but consequences of the evolution of the tendency itself. But they develop a partial separation from the law and react back upon it, accelerating or retarding its progress.

Marx explained, "We have thus seen in a general way that the same influences which produce a tendency in the general rate of profit to fall, also call forth counter-effects, which hamper, retard, and partly paralyse this fall. The latter do not do away with the law, but impair its effect. Otherwise, it would not be the fall of the general rate of profit, but rather its relative slowness, that would be incomprehensible. Thus, the law acts only as a tendency. And it is only under certain circumstances and only after long periods that its effects become strikingly pronounced." (Marx, 1962, p. 233)

It should be noted that in a footnote to a 1981 lecture, Sweezy maintained, "in expounding the 'theory of the law,' Marx assumed a constant rate of surplus value and a rising organic composition. But this was no more than a device for simplifying the presentation of the logic of the argument." (Sweezy, 1981, p. 50) Here Sweezy echoes Marx in classifying this model as an expository device. But as of the writing of *The Theory*, he did not recognize his own cautionary limitation.

But Sweezy's main complaint is not against Marx's method of explaining his theory. If it were merely a matter of an explanatory device, Sweezy probably would not have raised an objection at all. As it turns out, the misleading argument over Marx's procedure of exposition is merely an indirect approach to the introduction of his disagreement with Marx over the substance of the question. As Sweezy proceeds, he shifts into a deeper criticism:

"It would appear, therefore, that Marx was hardly justified, even in terms of his own theoretical system, in assuming a constant rate of surplus value simultaneously with a rising organic composition of capital. A rise in the organic composition of capital must mean an increase in labor productivity, and we have Marx's own word for it that higher productivity is invariably accompanied by a higher rate of surplus value. . . . If both the organic composition of capital and the rate of surplus value are assumed variable, as we think they should be, then the direction in which the rate of profit will change becomes indeterminate. All we can say is that the rate of profit will fall if the percentage increase in the rate of surplus value is less than the percentage decrease in the proportion of variable to total capital." (Sweezy, 1942, p. 102)

Dealing with the theory itself, his last sentence is correct if a limited time period is assumed. The rate of surplus value, among other things, may change in such a way as to cause the rate of profit to rise for a certain time. But the point of Marx's law is to show why the rate of profit must fall in the long run, while explaining that temporary reverses were a natural part of the evolution of the law. And this is where Sweezy parts with Marx.

ONCE AGAIN, "INDETERMINACY"

But it now becomes clear why Sweezy began his argument by saying that Marx, in his initial presentation in Chapter 13, ought to have shown the falling profit rate countered by a rising surplus value rate. Sweezy believed that if Marx had presented it that way he could not have shown a declining rate of profit, but rather a rate of profit that could go either way depending on which tendency was stronger in other words, Sweezy envisions the rising rate of surplus value and the falling profit rate as independent forces, not different sides of a unitary process.

It was Marx's view that, in the long run, the rising organic composition of capital would overcome all obstacles, and that, in fact, the tendency of the rate of profit to fall would express itself as a measurable, irresistible, fact of life. In other words, in the long run, the falling tendency in the rate of profit is stronger than any force, or combination of forces, which obstructs it. But Sweezy rejects this conclusion of Marx. He maintains:

"If these arguments are sound, it follows that there is no general presumption that changes in the organic composition of capital will be relatively so much greater than changes in the rate of surplus value that the former will dominate movements in the rate of profit. On the contrary, it would seem that we must regard the two variables as of roughly coordinate importance. For this reason, Marx's formulation of the law of the falling tendency of the rate of profit is not very convincing." (Sweezy, 1942, p. 104)

But what arguments does Sweezy advance to prove his case? Only that: "The general impression of the rapidity of growth of the organic composition of capital seems to be considerably exaggerated." (p. 103) And, "all that can ever be observed is the net change in the organic composition which is the resultant of both forces." (p. 104) (As if it were a question of "observation"!)

But Sweezy provides no argument to prove why the two "variables" should be considered as of "roughly coordinate importance." If it is believed that, in the long run, the rate of profit might just as easily rise as fall, or that it will tend to perpetually oscillate around some average value, pushed up as much as it is pushed down, then the capitalist mode of production takes on the character of a permanent, ongoing system, one that possesses inherent strength and longevity resulting from the balance of its own countervailing forces. And this is Sweezy's view, in itself consistent with the bourgeois economists.

But the reality is just the opposite: the capitalist mode of production is driven deeper and deeper into irresolvable crisis precisely because of the inner logic of its own evolution. The law of the tendency of the rate of profit is Marx's explanation of this logic, of why capitalism is a system that generates the forces that produce its own gravediggers.

THE "RISING WAGES" ARGUMENT

Although the logic of Sweezy's argument points toward a capitalist mode of production that generates the forces that guarantee its own indefinite perpetuation, he does not explicitly state that conclusion. After all, he wants to be taken for a Marxist and, as such, one who recognizes the defects of the capitalist mode of production. In his further comments he expresses the view that the rate of profit will in fact tend to decline, but not for the reason advanced by Marx. Instead he finds a different cause, supposedly derived from Marx, but in fact this is a misinterpretation of Marx's theory. Sweezy claims:

"It was explained in the last chapter how the accumulation of capital, taken by itself, operates to increase the demand for labor power and hence to raise wages. Other things remaining equal, such a rise in wages leads to a reduction in the rate of surplus value, and this, in turn, expresses itself in a fall in the rate of profit. Since, as Marx again and again insists, 'the capitalist process of production is essentially a process of accumulation,' it follows that from this fact alone there arises a persistent tendency for the rate of profit to fall." (Sweezy, 1942, p. 105)

This argument indicates profit falls because wages rise. But Marx's view of the long-term effect of capitalist accumulation on the rate of wages was exactly the opposite. Marx argued,

"That is to say, the mechanism of capitalist production takes care that the absolute increase of capital is not accompanied by a corresponding rise in the general demand for labor." (Marx, 1977, p. 793) And further: ". . . the higher the productivity of labor, the greater is the pressure of the workers on the means of employment, the more precarious therefore becomes the condition for their existence, namely the sale of their own labor power for the increase of alien wealth, or in other words, the self-valorization of capital." (Marx, 1977, p. 798)

It is well-known that Marx spoke of the general result of the process of capitalist accumulation as "accumulation of wealth at one pole . . . accumulation of misery, the torment of labor, slavery, ignorance, brutalization and moral degeneration at the opposite pole. . . ." (Marx, 1977, p. 799)

This does not suggest a rising tendency in the rate of wages. (In Sweezy's discussion of Marx's views on accumulation, he manages to avoid mentioning this conclusion so as to project his theory of rising wages without appearing to contradict Marx.) And in Chapter 14 of Capital, Vol. III, which analyzes the counteracting influences to the tendency of the rate of profit to fall, Marx asserts that,

". . . (the) depression of wages below the value of labor power" is "one of the most important factors checking the tendency of the rate of profit to fall." (Marx, 1962, p. 230) And further:

"The tendency of the rate of profit to fall is bound up with a tendency of the rate of surplus value to rise, hence with a tendency for the rate of labor exploitation to rise. Nothing is more absurd, for this reason, than to explain the fall in the rate of profit by a rise in the rate of wages, although this may be the case by way of an exception." (Marx, 1962, p. 234)

THE RISING RATE OF SURPLUS VALUE

It was Marx's view that the rise in the rate of surplus value brought about by increasing productivity of labor could not, in the long run, effectively compensate for the falling rate of profit caused by the growth of the constant part of capital at the expense of the variable part. As he explained,

"Moreover, it has already been demonstrated—and this constitutes the real secret of the tendency of the rate of profit to fall—that the manipulations to produce relative surplus value amount, on the whole, to transforming as much as possible of a certain quantity of labor into surplus value, on the one hand, and employing as little labor as possible in proportion to the invested capital, on the other, so that the same reasons which permit raising the intensity of exploitation rule out exploiting the same quantity of labor as before by the same capital." (Marx, 1962, p. 228)

The point is that increasing the rate of surplus value, and thereby the amount of surplus value in relation to the advanced capital, can only be achieved by methods which also increase the mass and value of the constant capital employed in relation to the number of workers engaged in the production process. This is the point that Sweezy missed in his treatment of the issue, and it should be explained in depth.

Relative surplus value is increased through improvements in the means of production that reduce the necessary labor time required for the production of the workers' means of subsistence. At a constant real wage, the value of these articles of consumption declines as they are produced with less and less labor. The portion of the labor required daily to replace the value of labor power declines in relation to the portion rendering surplus value. The rate of surplus value rises in this way, and—all else equal—the profit rate as well. But how can the workers' means of consumption be cheapened other than by productivity increases that can only be brought about by an increase of constant capital in relation to variable capital? The organic composition must increase in those branches of industry where the means of subsistence are produced.

And it is this unavoidable growth in organic composition of capital that ultimately sinks the rate of profit, no matter how high the rate of surplus value may climb. Marx argued as follows:

"Hence every single commodity contains a smaller sum of labor materialized in means of production and of labor newly added during production. This causes the price of the individual commodity to fall. But the mass of profits contained in the individual commodities may nevertheless increase if the rate of the absolute or relative surplus value grows. The commodity contains less newly added labor, but its unpaid portion grows in relation to its paid portion. However, this is the case only within certain limits. With the absolute amount of living labor newly incorporated in individual commodities decreasing enormously as production develops, the absolute mass of unpaid labor contained in them will likewise decrease, however much it may have grown as compared to the paid portion." (Marx, 1962, p. 221)

Suppose, for example, that the value composition of the product were 99 c + 0.5 v + 0.5 s. In this case, even if v were reduced to zero, the rate of profit could be no more than 1 % (1 s / 99 c). Now suppose the product value composition were to advance to 99.9 c + 0.01 v + 0.09 s. The rate of profit could not exceed 0.1 %, even if v were eliminated entirely. If newly added labor is reduced to one-one thousandth of the commodity value, then it matters little how this tiny amount is divided between variable capital and surplus value. If a wage is paid at all, reducing it to nothing cannot raise the rate of profit to any noticeable extent.

Carrying the logic to its extreme here is only intended to illustrate the point that the more advanced the organic composition of capital, the less effect a rising rate of surplus value can have in overcoming the dwindling profit rate. The reason for the shrinking ratio of newly-added labor to previously-objectified labor in the means of production is that with the advancing productivity of labor, fewer laborers are hired for every 100 of capital advanced. With fewer laborers working, the product's value becomes increasingly composed of value reflecting the contribution of constant capital, for which the capitalist has paid an equivalent in money.

We are discussing an evolutionary process in which the mass and value of the means of production constantly grows in relation to the value newly created by the workers who interact with this mass in the daily process of realizing more value and surplus value in the product of labor. As this mass increases, the new value added per day shrinks ever smaller in relation to the value of the means of production each worker operates.

It is like a dung beetle creating an ever-growing dung-ball. Initially the dung beetle is much larger than the dung-pellet. With time, although the beetle remains the same size, the spherical dung-ball grows to be many times larger than the beetle, until—if we imagine an indefatigable beetle—the beetle becomes a tiny speck, almost invisible on the surface of the gigantic spherical dung-mass. The amount of dung this beetle daily adds to this burgeoning dung-mass eventually becomes infinitesimal compared to the already accumulated mass. This is a one-way street provided that a torrential downpour does not intervene, dissolving the fruit of the beetle's labor. That's about as far as we can take this metaphor, but if it were possible to view the daily amount added by the beetle's labor as divided into two parts, one which grows at the expense of the other, it wouldn't make much difference in the long run. Both of these parts of newly-added labor would be ever smaller in relation to the already accumulated dung-mass.

But Sweezy has an answer for this. He states: "Some Marxists have attempted to solve the problem by a kind of pseudomathematical reasoning. From a purely mathematical standpoint, the argument goes, there is no limit to the increase in the organic composition. If the ratio of constant to variable capital starts at one-to-one, it can obviously rise to two-to-one, ten-to-one, or whatever your imagination fancies. On the other hand, there is a limit to the increase in the rate of surplus value: necessary labor can never be reduced to zero, since that would mean that workers would starve to death. From this the conclusion is drawn that the organic composition can rise indefinitely while the increase in the rate of surplus value runs into an impenetrable barrier. QED."

The organic composition can increase continuously—as long as capitalist competition exists—and Sweezy makes no attempt to rebut this. But Sweezy overlooks the *interdependency* of the changes in organic composition and surplus value. The amount of labor added every day (or every week, or every year) decreases in relation to the accumulated mass of dead labor. It is wrong to say that the rate of surplus value "runs into an impenetrable barrier," since its increase has no “logical, mathematical” limit. But the reason Marx says there is a “barrier” is because the motive force of capitalism, profit, keeps shrinking, forcing the capitalists to continuously intensify their efforts to escape from the trap.

As for the need to feed the workers—this simply means that, in practice, this process will never reach the extreme of necessary labor = 0, and this much is not debatable. Marx, for one, did not imply that the logic of capitalist decline must proceed robotically to its "end"—quite the contrary. It is this underlying logic that explains the outbreak of deeper crises of production and the intensification of class struggles. The total product value in turn is composed more and more of constant capital value, transferred to the product of labor. As Sweezy says, "two-to-one, ten-to-one," and so on. The division of the newly-added value into its necessary and surplus components thus takes place within a dwindling portion of the total product value. The surplus value is contained entirely within the shrinking element, and even though the rate of surplus value rise to 1,000 %, 1,000,000 %, etc., it becomes vanishingly small in relation to the ever more massive bulk of the constant capital element.

Sweezy continues: "The argument is silly, even from a mathematical standpoint. The amount of necessary labor can tend toward zero without ever reaching it (total automation with only one worker needed to set the apparatus in motion and watch over its functioning, all others living on unemployment insurance paid out of surplus value), which would mean that both the rate of surplus value and the organic composition (ratio of constant to variable capital) would tend toward infinity." (Sweezy, 1981)

But what is silly about this tendency? Sweezy thinks it is silly to argue that the rate of surplus value and the organic composition tend toward infinity. The trajectory itself has no termination point, like many other natural processes. Why is this silly? Marx was explaining the inherent logic of an economic evolution.   By calling it "silly" he hopes to convince the reader that somewhere in here there is an argument against Marx's explanation, but no, Sweezy has no argument.

The point is that profit keeps shrinking as long as the organic composition grows. The future existence of capitalism becomes increasingly doubtful, and this increasingly unstable situation produces crisis. The crisis penetrates to the heart of capitalism, and the employers and their governments are forced to use ever more brutal methods to increase the rate of surplus value. Governmental remedies are employed: various forms of private and public credit and credit-based stimulus, subsidies, tax reduction, etc. But while capitalism exists, none of these add up to anything more than kicking the can down the road. The vise tightens until the workers' resistance grows to a breaking point, initiating a pre-revolutionary situation.

SURPLUS VALUE AND PRODUCTIVITY

Marx discussed the increasing futility of raising the rate of surplus value as a means to stave off the falling rate of profit:

"The extent to which the productive force of labor increases the value of capital (i.e. increases the rate of surplus value) thus depends on the original relation between the portion of labor objectified in the worker and his living labor. This portion is always expressed as a fractional part of the whole working day, 1/3, 2/3, etc. The increase in productive force, i.e., its multiplication by a given amount, is equal to a division of the numerator or the multiplication of the denominator of this fraction by the same amount. Thus, the largeness or smallness of the increase of value depends not only on the number which expresses the multiplication of the productive force, but equally on the previously given relation which makes up the part of the work day belonging to the price of labor." (Marx, 1973, p. 337)

Here Marx is discussing the increase in relative surplus value gained by the capitalist due to the cheapening of the means of subsistence through the increasing productivity of labor. The lower the rate of surplus value, the greater effect will a given change in productivity have in increasing this rate. The multiplier of the productive force is the divisor of the fraction of the working day equivalent to variable capital, or wages.

Suppose, for example, a rate of surplus value of 25 %, a low rate. This is expressed as 20 s / 80 v. If the working day contains ten hours, 2 hours are surplus and eight hours are necessary. Thus, the fraction of the working day representing variable capital = 8/10. Suppose productivity doubles. The multiplier of the productive force is two. Divide 8/10 by 2 and get 4/10. This is the new fraction representing variable capital's portion of the work day. The variable capital is now 4 hours out of ten hours, and the rate of surplus value has gone to 60 s / 40 v = 150 %. A big change from 25 %.

But now suppose the rate of surplus value = 400 %, or 80 s / 20 v. Here the variable fraction = 2/10, and if productivity is doubled, 2/10 divided by 2 = 1/10. The variable portion is now one hour out of ten, and the new rate of surplus value is 900%.

In both cases productivity doubles. In the first case, the rate of surplus value increased from 25 % to 150 %, a six-fold jump. In the second case, because of surplus value's already large take from the day's labor, the same doubling of productivity caused an increase in the rate of surplus value from 400 % to 900 %, an increase of a little more than double.

If this series is extended further it will be seen that as the rate of surplus value climbs, each new doubling of productivity has less and less effect on the rate of surplus value. And this means that the method of using the increasing rate of surplus value as a means of offsetting the falling rate of profit becomes progressively less effective. Marx went through this series in the *Grundrisse*, and concluded by saying,

"Thus, the more developed capital already is, the more surplus labor it has created, the more terribly must it develop the productive force in order to realize itself in only smaller proportion, i.e. to add surplus value—because its barrier always remains the relation between the fractional part of the day which expresses necessary labor, and the entire working day. It can only move within these boundaries. The smaller already the fractional part falling to necessary labor, the greater the surplus labor, the less can any increase in productive force perceptibly diminish necessary labor; since the denominator has grown enormously. The self-realization of capital becomes more difficult to the extent that it has already been realized." (Marx, 1973, p. 340)

When Sweezy says that, "necessary labor can never be reduced to zero since that would mean workers would starve to death," he is actually recognizing the character of this process. Yes, if the workers receive 0 means of subsistence, there's no food, no work, no nothing. No, we are not likely to arrive at that point. But the process keeps moving in that direction. Sweezy seems to recognize this by saying "necessary labor can never be reduced to zero." No, not to zero, but the falling profit rate produces a relentless pressure to cut wages. The barrier is the working day itself, which the capitalists strive to maximize, and the workers fight to reduce, but whether long or short it is limited in time, and its product is divided into its variable and surplus fractions. While there is no limit to the rising ratio of accumulated labor to newly-added labor, there is a limit to the amount of hours in a day, or the amount of hours that workers can daily devote to the creation of value.

Marx explained, "Inasmuch as the development of the productive forces reduces the paid portion of employed labor, it raises the surplus value, because it raises its rate, but inasmuch as it reduces the total mass of labor employed by a given capital, it reduces the factor of the number by which the rate of surplus value is multiplied to obtain its mass. Two laborers, each working 12 hours daily, cannot produce the same mass of surplus value as 24 who work only 2 hours, even if they could live on air and hence did not have to work for themselves at all. In this respect then, the compensation of the reduced number of laborers by intensifying the degree of exploitation has certain insurmountable limits. It may, for this reason, well check the fall in the rate of profit, but cannot prevent it altogether." (Marx, 1962, p. 242)

Sweezy fails to examine the specific character of the interdependent relation between surplus value and the organic composition of capital. It will be recalled that he laid out his position on this relation and concluded that:

"We must regard the two variables as of roughly coordinate importance." (Sweezy, 1942, p. 104)

Thus, Sweezy regards the two "variables" as originating independently, or at least interacting as if they were independent forces. And here he overlooks Marx's explanation of how these two trends are specifically interdependent. Marx pointed out:

"But since the same influences which raise the rate of surplus value (even a lengthening of the working time is a result of large-scale industry) tend to decrease the labor power employed by a certain capital, it follows that they also tend to reduce the rate of profit and to retard this reduction." (Marx, 1962, p. 229)

The rate of surplus value—in its relative form—is increased by reducing the necessary labor time required for producing the workers' means of sustenance. This effect is brought about by improvements in labor productivity in those sectors that produce commodities destined for workers' consumption. Also, improvements in productive technology in sectors that produce the means of production reduce the value of the commodities purchased by workers because the equipment and raw materials that go into the production of these commodities are themselves reduced in value. As the value of grain falls, so does the value of bread, even when bakery technology remains unchanged. And, needless to say, baking, slicing and packaging technology improves, reducing the necessary labor time for the production of bread with the use of this equipment.

Thus, in order to raise the relative rate of surplus value, capitalists are spurred to advance the productivity of labor, increase the ratio of machines to workers, heighten the organic composition of capital, and thereby build up the prerequisites for a long-term, secular fall in the rate of profit. Although the immediate effect of raising the rate of surplus value is to increase the ratio of profit to advanced capital, in the long run this boost to the organic composition of capital drives the profit rate down.

This is the most difficult aspect of Marx's theory for formal thinkers, such as Sweezy. They find it hard to recognize a process that has conflicting effects. But once it is explained, it is not so strange or out of the ordinary. Nor is that difficult to grasp or to explain.

"We have thus seen in a general way that the same influences which produce a tendency in the general rate of profit to fall, also call forth counter effects, which hamper, retard, and partly paralyze this fall. The latter do not do away with the law, but impair its effect." (Marx, 1962, p. 233)

THE CHEAPENING OF CONSTANT CAPITAL

Sweezy's thinking on the question of the cheapening of the elements of constant capital is parallel to his approach to the question of the rising rate of surplus value. Marx had argued that the cheapening of the elements of constant capital (tools, machinery, raw materials and auxiliary materials) was one of the influences that counteracted the tendency of the rate of profit to fall. As each worker operates more equipment and more productive equipment, and processes raw materials more rapidly, etc., the ratio between the means of production and living labor increases. Yet this machinery and these raw materials, though they increase in mass in relation to the employed workforce, decline in value as they themselves are produced with less and less labor time. As Marx explains it:

"In short, the same development which increases the mass of the constant capital in relation to the variable reduces the value of its elements as a result of the increased productivity of labour, and therefore prevents the value of constant capital, although it continually increases, from increasing at the same rate as its material volume, i.e., the material volume of the means of production set in motion by the same amount of labour-power. In isolated cases the mass of the elements of constant capital may even increase, while its value remains the same, or falls." (Marx, 1962, p. 231)

As technological progress facilitates the introduction of more efficient productive equipment and systems, is adopted in the various branches of production, it takes fewer daily worker-hours to produce the same quantity of goods. The value of the daily output of each worker is the same as before, provided the hours worked and the value of labor power remain the same. But now there are more products per day, representing the same daily value, so the value of each unit of physical output is smaller. At the same time improvements in the technology of the production of machines, tools and materials reduces the value of the means of production, so that the value of fixed capital passed on to the product of labor progressively declines with each new wave of technical advances.

As a result of advancing productivity of labor, the value composition of capital increases more slowly than its technical composition. While the mass of the means of production grows, each aliquot part of this mass, on average, requires less labor to produce, and is therefore lower in value than in the previous historical period. And it is true that the technical composition increases before the value composition increases. This is due to the fact that technical changes are not introduced simultaneously in all the enterprises in a given branch of production. The technical changes become generalized only gradually, and as this occurs the socially-necessary labor required for the products of this branch falls accordingly. The fall in value is in response to the rise in productivity. This raises the question: can the value of the means of production decline so fast, or so effectively, that the concomitant rise in profit completely offsets the effect of the diminishing volume of surplus value created?

Sweezy's comments on this issue only serve to create confusion.

He states: "It might seem that it would be preferable to look first at what might be called the 'original' increase in the organic composition, to observe the effects of this on the rate of profit, and only then to take account of the cheapening of the elements of constant capital which is itself due to the rise in productivity associated with the 'original' increase. It might be held that if this were done, the rate of increase of the organic composition would appear much larger and that this fact is prevented from showing in the statistics only by one of the 'counter-acting causes'." (Sweezy, 1942, p. 103)

By using the word "original" here, Sweezy apparently means that the means of production are to be regarded as first increasing at the old values of the elements of constant capital, then later corrected for the decline in their values resulting from higher productivity. He then continues:

"It is doubtful, however, whether any useful purpose can be served by such an attempt to preserve Marx's implied distinction between the primary rise in the organic composition and the counteracting (but smaller) fall due to the cheapening of the elements of constant capital. All that can ever be observed is the net change in the organic composition which is the resultant of both forces." (Sweezy, 1942p. 104)

Here Sweezy manages to avoid saying anything that would shed light on the issue, and merely raises an objection against a particular mode of framing the problem. However, by concluding that all that can be "observed" is the "net change," he shifts away from an attempt to explain why the cheapening of the elements of constant capital can only retard, but cannot reverse, the tendency of the rate of profit to decline. Thus, he gives the impression that the direction of change in the rate of profit might be indeterminate in the long run. While he does not state that the cheapening of constant capital might block the rise in the organic composition of capital, he leaves open the possibility.

Yet Marx made it clear that the cheapening of the elements of constant capital, just as the rise in the rate of surplus value, could neither reverse nor permanently obstruct the rise in organic composition and the fall in the rate of profit. As he pointed out, "As a result of this increasing productivity of labor, however, a part of the existing constant capital is continuously depreciated in value, for its value depends not on the labor time that it cost originally, but on the labor time with which it can be reproduced, and this is continuously diminishing as the productivity of labor grows. Although, therefore, the value of the constant capital does not increase in proportion to its amount, it increases nevertheless, because its amount increases even more rapidly than its value falls." (Marx, 1968, p. 416)

The value of the constant capital must grow, even if more slowly than its mass grows. This must be understood in order to clarify why the organic composition of capital must rise in the final analysis, and that the cheapening of the elements of constant capital can only retard, but cannot reverse, this trend. Elsewhere Marx posed the question this way:

"Secondly, what becomes cheaper is the individual machine and its component parts, but a system of machinery develops; the tool is not simply replaced by a single machine, but by a whole system, and the tools which perhaps played the major part previously, the needle for example (in the case of a stocking loom or a similar machine), are now assembled in thousands. Each individual machine confronting the worker is in itself a colossal assembly of instruments that he formerly used singly, e.g. 1,800 spindles instead of one. But in addition, the machine contains elements that the old instrument did not have. Despite the cheapening of individual elements, the price of the whole aggregate increases enormously and the increase in productivity consists in the continuous expansion of the machinery.

". . . It is therefore self-evident or a tautological proposition that the increasing productivity of labor caused by machinery corresponds to increased value of the machinery relative to the amount of labour employed (consequently to the value of labor, the variable capital)." (Marx, 1971, p. 366)

In this discussion in *Theories of Surplus Value,* Vol. III, Marx mentions the increasing speed of machinery, its greater durability and its more efficient applications as factors that intensify the concentration of more and more capital in the form of machinery as compared with living labor. And as this process advances, each worker transforms greater and greater quantities of raw materials into semi-finished or finished products. As far as the product value is concerned, a growing fraction of the product value is attributable to the machinery, auxiliary material and raw material, and a dwindling fraction to the living labor immediately employed in the production process. The value of the means of production, passed on to the value of the product grows also, but not as fast as the mass of its material, due to the constant cheapening of the elements of constant capital.

It must be emphasized that the gains that are achieved in reducing the labor value of the elements of constant capital can only be brought about by increasing the technical composition of capital in those branches of industry which produce these machines, tools, mineral ores, locomotives, etc. In other words, living labor shrinks while fixed capital equipment grows in mining, agriculture, raw material processing, as well as in the manufacture of machinery, hardware, trucks, etc. Thus, the process of the cheapening of constant capital can only be advanced by the method of increasing the ratio of means of production to the employed workforce. And this feeds the growth of the organic composition of capital of the total social capital.

Marx summed up his approach the question in *Grundrisse* (p. 748–50):

"This is in every respect the most important law of modern political economy, and the most essential for understanding the most difficult relations. It is the most important law from the historical standpoint. It is a law which, despite its simplicity, has never before been grasped and, even less, consciously articulated. … that the development of the productive forces brought about by the historical development of capital itself, when it reaches a certain point, suspends the self-realization of capital, instead of positing it. … The growing incompatibility between the productive development of society and its hitherto existing relations of production expresses itself in bitter contradictions, crises, spasms. … Hence the highest development of productive power together with the greatest expansion of existing wealth will coincide with depreciation of capital, degradation of the labourer, and a most straitened exhaustion of his vital powers. These contradictions lead to explosions, cataclysms, crises, in which by momentaneous suspension of labour and annihilation of a great portion of capital the latter is violently reduced to the point where it can go on.

THE CENTRAL CONTRADICTION OF CAPITALISM

The central contradiction of the capitalist mode of production can be expressed as the conflict between the increasingly social and universal character of the development of the forces of production, and the limits imposed on this development by the private ownership of the means of production. The mechanism that drives capitalist production is profit. The rate of profit expresses the degree to which the capitalists are successful in exploiting the laborers (rate of surplus value), as well as how large a fraction of their capital they commit to hiring laborers (and the wage advanced to these laborers is the only fraction that produces a profit).

As time goes on, and as a result of the inexorable logic of their own competition, they are forced to lay out an ever-larger fraction of the capital available to them to purchase means of production, and thus face growing limitations on their ability to exploit wider layers of working people. This barrier combines with the intensifying downward pressure on wages, shrinking the mass market for consumer goods, and producing a crisis of shrinking possibilities for capital accumulation.

The capitalists attempt to increase the intensity of exploitation of the workers under their domination, and they may succeed to a certain extent, depending on the workers' capacity to resist. But neither the intensification of exploitation, nor the resistance to it, can reverse the growing organic composition of capital.

The law of the tendency of the rate of profit to fall is the most general quantitative expression of the growing antagonism between the dynamic development of the forces of production under capital, and the ever-smaller degree of success achieved by the capitalists in utilizing that development for their private gain. The declining rate of profit is a measure of the growing hindrance of private ownership to the further development of the productive forces.

Throughout this essay it has been the objective of this writer to demonstrate Marx's superiority over his critics, in this case Paul Sweezy. Many academic “Marxists” stand much closer to Sweezy than to Marx in their approaches to this and other debated issues in economic theory. Marx remains unsurpassed to this day as the best spokesperson for his own views, and is without coequal as social scientist and revolutionist.

BIBLIOGRAPHY

Fine, B. and Harris, L. Rereading Capital. New York: Columbia University Press, 1979.

Lenin, V. I. Collected Works. Moscow: Progress Publ., 1977.

Marx, K. Capital, Vol. I. New York: Random House, 1977.

Capital, Vol. III. Moscow: Foreign Lang. Publ., 1962

Grundrisse. New York: Random House, 1973.

Theories of Surplus Value, Vol. II. Moscow: Progress Publ., 1968.

Theories of Surplus Value, Vol. III. Moscow: Progress Publ., 1971.

Sweezy, P. The Theory of Capitalist Development. New York: Monthly Review, 1942.

Four Lectures on Marxism. New York: Monthly Review, 1981.