THE DECLINE OF THE RATE OF PROFIT IN THE POSTWAR US ECONOMY:

A COMMENT ON BRENNER

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The publication of Robert Brenner's "The Economics of Global Turbulence" is an important and very welcome event. Brenner's essay brings to the fore once again the analysis of the economic crisis of the 1970s and 1980s, and argues that this economic crisis is not over yet. Therefore, there is still a great need to try to understand better the underlying causes of this continuing crisis and to have a public debate about the nature of these causes. The causes of the crisis determine the preconditions for recovery from the crisis and the likelihood of a full and lasting recovery in the years ahead. Brenner's essay has once again put these questions squarely on the left agenda, and this is a significant contribution.

I also agree completely with Brenner's emphasis on the *rate of profit* as the key explanatory variable in understanding the dynamics of capitalist economies in general and the causes of the economic crisis of the last 25 years in particular. Many radical economists, including myself, have placed a similar emphasis on the rate of profit as the key variable in explaining the current crisis. From this perspective, a significant decline in the rate of profit in all major capitalist countries in the 1960s and 1970s was the fundamental cause of both of the "twin evils" of higher unemployment and higher inflation that have afflicted these countries since the 1970s. As in business cycles of the past, the decline in the rate of profit resulted in a decline in business investment and higher rates of unemployment. One new factor in the postwar period has been that many governments in the 1970s responded to the higher unemployment by adopting Keynesian expansionary policies (more government spending, lower interest rates, etc.) in an attempt to reduce this unemployment. However, these government attempts to reduce unemployment generally resulted in higher rates of inflation, as capitalist enterprises responded to the government stimulation of demand by raising their prices at a faster rate in order to reverse the decline in their rate of profit. In the 1980s, financial capitalists revolted against these higher rates of inflation and have generally forced governments to adopt restrictive policies (less government spending, higher interest rates, etc.). The result has been less inflation, but also sharply higher unemployment and sharply reduced living standards. Therefore, government policies have affected the particular combination of unemployment and inflation that has occurred, but the fundamental cause of both of these "twin evils" has been the decline in the rate of profit. It is striking that mainstream economists have almost completely ignored the decline of the rate of profit in their explanations of the economic crisis of the 1970s and 1980s.

I also agree with Brenner that the main driving force of the world capitalist economy since the 1970s has been the relentless attempts by capitalist enterprises in many different ways to restore the rate of profit back up to its earlier higher levels. The most important of these strategies to increase the rate of profit

has been attempts to reduce workers' wages in a number of ways: by direct wage cuts, by increasing prices faster than wages, by moving their operations to low-wage areas of the world, etc. The success of these strategies has been aided by the high rates of unemployment of recent decades. The negative effect of these wage cuts on the living standards of workers is only too well known: the average real wage in the US economy has declined about 20% over the last two decades. (see Moseley 1999 for a further discussion of these strategies to cut wages and their effects on workers).

However, the surprising - and alarming - fact is that, in spite of this general reduction of real wages, the rate of profit in the US economy has so far recovered only about 40% of its prior decline, so that the rate of profit today is still 25-30% below its early postwar peaks. In other words, the widespread attempts by capitalist enterprises to increase their rate of profit, which have had such a negative effect on the living and working conditions of workers, have so far been only partially successful in restoring the rate of profit. This weak recovery of the rate of profit is the main reason why stagflation has continued into the 1990s and why stagflation is likely to continue into the foreseeable future.

The most commonly held explanation of the decline of the rate of profit among radical economists is generally referred to as the "wage-push profit squeeze" theory (e.g. Glyn and Sutcliffe 1972; Weisskopf 1979; Aglietta 1979; Bowles, et al. 1983; Glyn, et al. 1990). According to this theory, the decline of the rate of profit was caused by an increase of wages that resulted from the workers' struggles of the late 1960s and early 1970s. It is argued that the lower rates of unemployment of this period increased the bargaining power of workers and enabled them to gain higher wages at the expense of capitalists' profits. Thus, according to this view, the current crisis of capitalism is the mainly the result of the power and militancy of workers which increased wages and reduced the rate of profit.

I agree with Brenner's critique of the profit squeeze theory of the decline of the rate of profit. The crucial flaw in this theory is that it cannot explain why the rate of profit has remained low for so long, why it has only partially recovered from the prior decline, and hence why the crisis has persisted for so long. If the cause of the decline of the rate of profit were greater workers' power due to lower rates of unemployment in the late 1960s and early 1970s, then surely the higher rates of unemployment that have prevailed since the 1970s have greatly weakened workers' power and should have restored the rate of profit to its earlier higher levels. I agree completely with this critique and have made it myself in several prior publications (Moseley 1985, 1992, and 1997). The profit squeeze theory is clearly inadequate. It can explain the decline of the rate of profit, but it cannot explain why two decades of higher unemployment and lower wages have not fully restored the rate of profit. We must search for other, better explanations of the decline of the rate of profit that can also explain why the rate of profit has remained so low for so long.

So there are a number of significant points on which I agree with and applaud Brenner. However, on the most important question of all - the explanation of the causes of the decline of the rate of profit - there is a fundamental disagreement. The next section presents a brief summary and critique of Brenner's explanation of the decline of the rate of profit. My discussion will be restricted to the United States, which is what I know the most about.

BRENNER'S THEORY

To begin with, there is a general problem with Brenner's explanation of the decline of the rate of profit: nowhere is there presented a clear and explicit general theory of profit and the rate of profit, upon which his explanation of the postwar decline of the rate of profit is based. A narrative is told about various factors that affect the rate of profit and about the factors that caused the decline of the rate of profit in the postwar economy, but nowhere is a general theory stated and summarized clearly and explicitly, preferably (for the sake of clarity) in mathematical terms. Therefore, the reader is forced to try to figure out what implicit general theory of profit Brenner has in mind. And this is not easy, since some passages appear to be mutually contradictory. But one thing is certain. Brenner's theory of profit is *not* Marx's theory of profit. Marx's theory of profit - according to which profit is determined by the surplus labour of workers - is never mentioned by Brenner. Marx's theory of the falling rate of profit is dismissed as having been refuted by Okishio's Theorem (p. 12).

More specifically, Brenner's explanation of the decline of the rate of profit in the postwar US economy focuses primarily on the manufacturing sector. Brenner's explanation of the decline of the rate of profit in manufacturing is that an increase of foreign competition beginning in the mid-1960s, with the entry of new low-cost producers from West Germany and Japan, created a situation of excess capacity and excess supply of manufactured goods in the US and world economy. This excess supply of manufactured goods put downward pressure on prices, which in turn reduced the rate of profit in manufacturing.

Brenner also explains why the oversupply and overcapacity in manufacturing has persisted for 25 years and hence why the rate of profit in manufacturing has not fully recovered. The main reasons are: (1) the high cost firms have not exited manufacturing in sufficient numbers because (a) they have high fixed capital costs which are sunk costs and they can still make a profit on their circulating capital and (b) they would lose the "intangible assets" they have built up in their industries; (2) large manufacturing firms in the US responded to the increased competition from foreign low-cost producers, not by exiting from the industry, but rather by intensively developing even newer technology of their own with even lower costs, which exacerbated the problem of overcapacity. (3) the entry of the Asian NICs (S. Korea, Taiwan, etc.) beginning in the 1980s into key manufacturing industries (steel, autos, etc.) further exacerbated the problem of overcapacity. Brenner argues that his theory has a decisive advantage over the profit squeeze theory, in that it can explain not only why the rate of profit declined, but also why the rate of profit has not been fully restored in more than two decades.

I generally agree with Brenner's explanation of the decline of the rate of profit in manufacturing. I agree that an important cause of this decline was the excess capacity caused by the increased competition from German and Japanese manufacturing since the mid 1960s.

However, a crucial question remains: what is the relation between the decline rate of profit in manufacturing and the general rate of profit for the economy as a whole, for the latter is the crucial variable that we ultimately want to explain. Did a decline of the rate of profit in manufacturing

necessarily cause a decline in the general rate of profit? More broadly, how is the general rate of profit determined?

Unfortunately, Brenner does not adequately address this crucial question. As mentioned above, nowhere is an explicit theory of the general rate of profit presented. There is only a very brief theoretical discussion early in Brenner's essay (in the initial sketch of his theory, pp. 28-29) of the effect of the decline of the manufacturing rate of profit on the nonmanufacturing rate of profit and the general rate of profit. This brief theoretical discussion is introduced as follows:

> A final major issue needs to be clarified - the effect of the decline of the rate of profit in manufacturing on the rate of profit for the economy as a whole.

Brenner then argues, in answer to this question, that the decline of the rate of profit in manufacturing will at least to some extent *increase* the rate of profit in nonmanufacturing, because it will cheapen the latter's inputs. The net effect of these two opposing trends on the general rate of profit for the economy as a whole will depend on their relative magnitudes. Brenner argues further that, if real wages in nonmanufacturing remain constant, then there would be no net effect on the general rate of profit, because the increase in the rate of profit in nonmanufacturing would exactly offset the reduction of the rate of profit in manufacturing. However, if real wages in nonmanufacturing increase, at least to some extent, then the increase in the rate of profit in nonmanufacturing will be less than the reduction in manufacturing, and hence the general rate of profit will decline.

Brenner's argument seems to assume that the total income gain in nonmanufacturing (wages + profit) will be equal to the loss of income in manufacturing (which is entirely a loss of profit). In other words, the total income in the economy as a whole (manufacturing + nonmanufacturing) is not affected by the decline of the rate of profit in manufacturing. On the basis of what general theory is this assumption made?

This assumption also seems to imply that the price of the output in nonmanufacturing will not be affected by the reduction in the price of the inputs for nonmanufacturing. Hence, the price of nonmanufacturing goods remains the same, while the costs are reduced. Since profit is the residual of price over cost, the increase of profit in nonmanufacturing is equal in absolute magnitude to the reduction in costs. What theory of price is being assumed here for the determination of the price of nonmanufacturing goods? Is it consistent with the theory of price determination assumed in the manufacturing sector? Why doesn't the reduction of the cost of inputs in nonmanufacturing lead to a corresponding decline in the price of nonmanufacturing output? These are some of the questions that need to be addressed in a complete, satisfactory theory of the general rate of profit.

Zacharias (1999) and Duménil, et al. (1999) have interpreted Brenner's implicit theory of the general rate of profit to be Sraffian theory, or linear production theory, according to which the general rate of profit is determined simultaneously with individual prices and both are derived from given physical quantities of inputs and outputs. These authors argue that, within the framework of the Sraffian

determination of the general rate of profit, Brenner's explanation of the decline of the rate of profit is wrong. Brenner assumes that technological change typically increases both labor and capital productivity (such as the new technology of German and Japanese manufacturing in the 1960s). According to Sraffian theory, technological change of this kind will always *raise* the rate of profit, and will never reduce it. Duménil, et al. mention this point briefly (p. 8) and Zacharias provides a rigorous proof (pp. 5-7). This proof is essentially the same as Okishio's Theorem, extended to allow for different technical conditions of production for different firms within each industry. Brenner accepts Okishio's Theorem as a refutation of Marx's theory of the falling rate of profit. These authors turn Okishio's Theorem on Brenner himself and argue that it refutes his own theory of the decline of the rate of profit.

However, I am not so sure that Sraffian theory is the implicit theory of the general rate of profit that Brenner has in mind. It seems to me that Brenner is implicitly assuming a different theory of profit and prices. It seems to me that Brenner first determines the rate of profit in each individual sector (e.g. the manufacturing and nonmanufacturing sectors). The price of commodities in each sector depends on supply and demand in this sector. Then profit is determined as the residual of price over cost. Finally, the general rate of profit is determined as a *weighted average* of the rates of profit of individual industries (e.g. a weighted average of the manufacturing rate of profit and the non-manufacturing rate of profit), with the weights presumably determined by the percentage of the total capital in each industry or sector. This is very different from Sraffian theory. In Sraffian theory, there are no individual sectoral rates of profit. There is only the general rate of profit. All the sectoral rates of profit are assumed to be equal to this general rate of profit. Similarly, in Sraffian theory, the general rate of profit is not determined as a weighted average of different, unequal sectoral rates of profit, as it appears to be in Brenner's implicit theory. Instead, the Sraffian general rate of profit is derived from the technical conditions of production and the real wage.

I could be wrong about my interpretation of Brenner, since his theory is not explicitly stated. In any case, Brenner should clarify whether or not he accepts Sraffian theory as his basic theoretical framework, or exactly what theory of the general rate of profit he is implicitly assuming. As is stands, Brenner's theoretical explanation of the determination of the general rate of profit and the relation between the rate of profit in manufacturing and the general rate of profit is extremely weak, incomplete, and unsatisfactory. There is, in effect, no theory of the general rate of profit.

Furthermore, Brenner's concrete explanation of the decline of the rate of profit in the US economy later in the essay (pp. 95-111) ignores altogether his earlier brief theoretical discussion of the relation between the rate of profit in manufacturing and the general rate of profit. In this concrete explanation, the rate of profit in manufacturing and the rate of profit in nonmanufacturing are discussed separately and independently. There is no discussion of the effect of the decline of the manufacturing rate of profit on the nonmanufacturing rate of profit, as in the earlier theoretical discussion. Nor is there a discussion of the mutual effects of these two sectoral rates of profit on the general rate of profit. For example, Table 9, in the middle of this concrete explanation (p. 108), presents estimates of the manufacturing rate of profit and the nonmanufacturing rate of profit, but no estimates are presented of the general rate of profit. As Duménil et al. put it: "We are left with the simple idea that international competition from Japan and Germany was detrimental to US manufacturing." (p. 8)

One surprising result is that the rate of profit in *non*manufacturing also declined, not increased, as one would expect on the basis of the earlier theoretical discussion (due to the decline of the rate of profit in manufacturing and the cheapening of inputs for nonmanufacturing). This surprising result requires some explanation. We saw above that, according to Brenner, if real wages in manufacturing increased, then the increase in the rate of profit in nonmanufacturing (due to the decline of the rate of profit in manufacturing) would be smaller than if the real wage remained constant. This argument seems to suggest that real wages in nonmanufacturing must have increased very significantly during this period, in order to not only offset the positive effects of the decline of the rate of profit in manufacturing, but also to cause an actual decrease in the rate of profit in nonmanufacturing. Thus, in this sense, Brenner's theory appears to be a very strong version of the profit squeeze theory, in spite of his criticisms of the latter. In any case, there needs to be some explanation of why the decline of the rate of profit in manufacturing failed to increase the rate of profit in nonmanufacturing, as one would expect on the basis of the theoretical discussion.

MARX'S THEORY

We have seen above that Brenner's theory seems to be based on the implicit assumption that the general rate of profit is determined as a weighted average of the individual sectoral rates of profit (manufacturing and nonmanufacturing), and that these latter are determined prior to and independent of the general rate of profit. Marx's theory, on the other hand, is based on essentially the opposite assumption regarding the order of determination between the general rate of profit and the individual sectoral rates of profit. Marx's theory assumes that the general rate of profit is determined prior to and independent of the sectoral rates of profit, and is determined by aggregate features of the economy as whole (mainly the total amount of surplus labour in the economy as a whole). The deviations of individual rates of profit (e.g. the manufacturing rate of profit) from the general rate of profit are then determined (according to Marx's theory) by the relative proportions of supply and demand.

Marx expressed this fundamental premise of his theory in terms of the distinction between capital in general and competition. The analysis of capital in general involves the determination of the total amount of surplus-value and the general rate of profit for the economy as a whole. The analysis of competition, on the other hand, involves the distribution of the predetermined total amount of surplus-value among the different sectors of the economy (and also among the different forms of surplus-value - industrial profit, merchant profit, interest, and rent). (The distribution of surplus-value is the main subject of Volume 3 of *Capital*; see Moseley 1993 and 1997b for a further discussion of this important aspect of Marx's theory). The relative proportion of supply and demand in the individual sectors of the economy affect the distribution of surplus-value across sectors and the deviations of individual rates of profit around the general rate of profit. But these individual deviations do not affect the total amount of surplus-value in the economy as a whole or the determination of the general rate of profit.

From the perspective of Marx's theory, the decline of the rate of profit in the manufacturing sector of the US economy did not cause the decline of the general rate of profit in the US economy as a whole. The general rate of profit is not determined as a weighted average of individual sectoral rates of profit.

Rather, the decline of the general rate of profit was caused by economy-wide features (to be examined below). The decline of the general rate of profit in turn resulted in declines in both the rate of profit in both manufacturing and the rate of profit in nonmanufacturing. The decline of the rate of profit in manufacturing was much greater than the decline in nonmanufacturing precisely because of the causes that Brenner emphasizes: increased competition and excess supply in manufacturing since the mid-1960s, which put downward pressure on prices. The manufacturing sector in the US economy in the early postwar period had enjoyed a monopoly rate of profit (roughly twice as high as the general rate of profit), because of the high entry costs and the absence of effective foreign competition. But the newly emerging foreign competition gradually wiped out these monopoly profits and the higher the rate of profit in manufacturing. Therefore, from the perspective of Marx's theory, what Brenner has explained is the loss of monopoly profits in the manufacturing sector of the economy, not the decline of the general rate of profit. This loss of monopoly in the manufacturing sector is clearly seen in Brenner's Figure 8 (p. 103).

Similarly, from the perspective of Marx's theory, the continued excess capacity and intense competition in manufacturing does not explain why the recovery of the general rate of profit has been so limited. It explains only the failure of the manufacturing sector to regain its monopoly profits and raise its rate of profit above the general rate of profit, as it did in the early postwar period.

Ironically, Brenner's theory is fundamentally the same as Baran and Sweezy's theory in *Monoploy Capital*, even though superficially they appear to be opposite theories. The basic assumption in both theories is that *the rate of profit is determined by the degree of competition* (inversely) or the degree of monopoly (positively) in the economy. For Baran and Sweezy, the degree of monopoly in the early postwar period was high, and thus the rate of profit was high and rising. For Brenner, the degree of competition since the mid-1960s was increasing and hence the rate of profit fell. These two theories are not incompatible; they are essentially the same theory, applied in two different time periods, with different degrees of competition or monopoly. For both theories, the rate of profit depends on the degree of competition or monopoly.

For Marx, on the other hand, the general rate of profit is independent of the degree of competition or monopoly. The degree of competition or monopoly in individual sectors affects only the distribution of the total amount of profit among the sectors; it does not affect the total amount of surplus-value or the general rate of profit. For Marx, the general rate of profit is determined by the composition of capital and the rate of surplus-value, and ultimately on the relation of the total amount of surplus-value to the total capital invested. Paul Mattick (1969) criticized Baran and Sweezy on essentially the same grounds that I am criticizing Brenner - that for Marx the general rate of profit is independent of the degree of competition or monopoly.

MARXIAN EXPLANATION OF THE DECLINE OF THE GENERAL RATE OF PROFIT

This section will briefly summarize an explanation of the decline of the rate of profit in thek postwar US economy that is based on Marx's theory of profit and that I have presented in previous works (Moseley

1992 and 1997a). This Marxian explanation emphasizes Marx's distinction between productive labour and unproductive labour, so I will first very briefly review this important distinction in Marx's theory.

According to Marx's labor theory of value, not all labour employed within capitalist enterprises produce value and surplus-value. Some labour within capitalist enterprises perform functions which by themselves, according to Marx's theory, do not result in the production of additional value and surplus-value. These unproductive functions are entirely necessary within capitalist economies, but nonetheless, according to Marx's theory, do result in additional value or surplus-value, for reasons discussed in the next paragraph.

According to Marx's theory, there are two main types of unproductive labour within capitalist enterprises: circulation labour and supervisory labour. *Circulation labour* is labour related to the exchange of commodities and money, including such functions as buying and selling, accounting, check processing, money exchange, advertising, debt-credit relations, insurance, legal counsel, securities exchange, etc. Marx argued that circulation labour does not produce value and surplus-value because exchange is essentially the exchange of equivalent values. Circulation labour only transforms a given amount of value from commodities to money, or vice versa. *Supervisory labour* is labour related to the control of the labour of production workers, including such functions as management, direct supervision, record-keeping, etc. Marx argued that supervisory labour does not add to the value of commodities because this labour is not technically necessary for production, but is instead necessary because of the antagonistic relation between capitalists and workers over the intensity of labour of workers.

Capitalist enterprises must of course pay unproductive labour to carry out these necessary functions, even though, according to Marx's theory, these functions do not produce value and surplus-value. Therefore, the costs of this unproductive labour cannot be recovered out of value which it produces. Instead, these unproductive costs can only be recovered out of the surplus-value produced by productive labour. If these unproductive costs increase faster than the surplus-value produced by productive labour, then there will be proportionally less profit left over for capitalists. As we shall see, according to this Marxian theory, this negative effect of rising costs of unproductive labour was the main cause of the decline in the rate of profit in the postwar U.S. economy.

The rate of profit analyzed here is the so-called "conventional rate of profit", which by definition is the ratio of the amount of profit (P) to the total stock of capital invested (K).

(1) $\underline{P}$

RP = K

According to Marx's theory, profit (the numerator in the conventional rate of profit) is equal to the difference between the annual flow of surplus-value (S) and the annual flow of unproductive costs (U_f) (which consists mainly of the wages of unproductive labor (U_w) and also the costs of unproductive

materials (U_m)):

(2) $P = S - U_f$

Similarly, according to Marx's theory, the stock of capital, the denominator in the rate of profit, is divided into two components: constant capital (C) (the capital invested in the means of production) and the stock of capital invested in unproductive functions (U_s):

(3) $K = C + U_s$

Combining equations (2) and (3), we obtain the following Marxian equation for the conventional rate of profit:

(4) $RP = \frac{P}{K} = \frac{S - U_f}{C + U_s}$

Finally, we divide all terms on the right-hand side of the above equation by the annual flow of variable capital (V), the capital invested in labour-power, which is the "source" of surplus-value according to Marx's theory, and we obtain:

(5) $RP = \frac{S/V - U_f/V}{C/V + U_s/V} = \frac{RS + UF}{CC + US}$

From equation (5), we can see that, according to this Marxian theory, the rate of profit varies directly with the rate of surplus-value (RS) (the ratio of surplus-value to variable capital) and varies inversely with the composition of capital (CC) (the ratio of constant capital to variable capital) and the two ratios of unproductive capital to variable capital (UF and US).

According to my estimates, the rate of profit declined 45% from 1947 to 1977 (from 0.22 to 0.12). Over this same period, the rate of surplus-value increased 17% (from 1.40 to 1.63), the composition of capital increased 41% (from 3.58 to 5.03), the ratio UF increased 74% (from 0.54 to 0.94), and the ratio US increased 117% (from 0.30 to 0.66). (See Moseley 1992, Chapter 4, for a complete presentation of these estimates.) Thus, according to Marxian theory, the causes of the decline in the rate of profit in the postwar US economy were the significant increases in the composition of capital and in the two ratios of unproductive capital to variable capital.

In Moseley (1992, pp. 111-112 and Table 4.2), I estimated the individual contributions of each of these determinants to the total decline in the rate of profit. According to these estimates, the ratio UF was the determinant that contributed the most to the decline of the rate of profit, accounting for approximately two-thirds of the total decline. By the end of this period, the annual costs of unproductive labor (U_f) was over half (approximately 55%) of the total surplus-value produced by productive labor. The composition of capital accounted for most of the rest of the total decline.

The increase of the ratio UF was in turn due almost entirely to a roughly proportional increase in the ratio of unproductive labour to productive labour(the relative average wages of unproductive labour and productive labour remained more or less constant during this period). The ratio of unproductive labour to productive labour increased 83% (from 0.35 in 1947 to 0.64 in 1977) (see Moseley 1992, Table 4.3 and pp. 111-15). According to Marxian theory, this very significant increase in the ratio of unproductive labour to productive labour was the main cause of the decline of the rate of profit in the postwar U.S. economy.

In Moseley (1992, Chapter 5), I presented a preliminary analysis of the causes of this very significant increase in the ratio of unproductive labour to productive labour in the postwar US economy. Of the two main types of unproductive labour, the most important by far was circulation labour, which accounted for approximately 80% of the total unproductive labour during the postwar period. The causes of the relative increase of circulation labour are many and complex (in part because there are many different types of circulation labour), but the main cause seems to have been the "productivity" of circulation labour increased slower than the productivity of productive labour, which seems to be due to the inherent difficulties of mechanizing the functions of buying and selling which must remain to a large extent person-to-person transactions. The slower "productivity" growth of commercial labour required that greater and greater quantities of commercial labour had to be employed in order to sell and perform the other circulation tasks for the more rapidly increasing output of productive labour.

Since the 1970s, as we have seen above, the rate of profit has only partially recovered from the approximately 50% decline of the earlier period. According to my estimates, only about 40% of the prior decline of the rate of profit has been recovered. Hence, the rate of profit remains 25-30% below its earlier peaks (around 0. 16, compared to the early postwar peak of 0.22). This limited increase of the rate of profit since the mid-1970s is the main reason why slow growth and stagnation has continued in these decades.

The main underlying cause of this limited increase in the rate of profit is the same as the main cause of the previous decline in the rate of profit: a continued increase in the costs of unproductive labour. According to my estimates, the ratio UF increased 55% over this recent period (from 0.98 in 1977 to 1.46 in 1994). The total costs of unproductive labour in 1994 was 62% of the total surplus-value produced by productive labour. This continued significant increase of the ratio UF offset to a large extent the positive effects on the rate of profit of a 43% increase in the rate of surplus-value (from 1.66 to 2.33) and a 8% decline in the composition of capital (from 5.03 to 4.61). (See Moseley 1977a for a more complete presentation of these more recent estimates.)

The main cause of the increase in the ratio UF in this more recent period was again a continued increase in the ratio of unproductive labour to productive labour, which increased 22% from 0.64 in 1977 to 0.78 in 1994. However, the rate of increase of this ratio was somewhat slower, approximately 1% per year, compared to the almost 2% per year in the early postwar period. In addition, there was another cause of the increase in the ratio UF in this more recent period: an increase in the average wages of unproductive labour relative to the average wages of productive labour (which increased 29% from 1.38 in 1977 to 1.78 in 1994, in contrast to the earlier period in which this ratio of relative wages remained more or less constant).

This Marxian explanation of the decline of the rate of profit in the postwar US economy seems to have one important advantage over Brenner's explanation: it is based on a clear, explicit, and extensively developed general theory of profit and the general rate of profit (to wit, Marx's theory as presented in *Capital* and developed since). Brenner's explanation, on the other hand, is not based on an explicit general theory and appears to be *ad hoc*.

The next section will compare the future implications of this Marxian explanation of the decline of the rate of profit with the future implications of Brenner's explanation.

FUTURE IMPLICATIONS

I agree completely with Brenner that a full and lasting recovery from the recent economic stagnation depends above all else on the trend in the rate of profit. If the rate of profit increases in the years ahead and recovers all or most of its prior decline, then the chances are good that the US and world economy will more or less fully recover from the recent stagnation and will return to the more vigorous expansion and more prosperous days of the early postwar period. On the other hand, if the recovery of the rate of profit continues to be limited and incomplete, then it is likely that the recent stagnation will continue into the new century. What does Brenner's explanation of the decline of the rate of profit imply about the likely future trend of the rate of profit in the US economy? And what does the Marxian explanation of this decline imply about the likely future trend?

Brenner's explanation of the decline of the rate of profit suggests that the future trend of the rate of profit depends mainly on the degree of competition (or monopoly) within the manufacturing sector of the economy. If the degree of competition in manufacturing remains high, as in recent decades, then it is not likely that the manufacturing rate of profit will increase significantly. On the other hand, if the degree of competition is reduced somehow, then the manufacturing rate of profit could increase significantly, and with it, according to Brenner, also the general rate of profit. As Brenner put it:

> From the standpoint of this text, the fundamental condition for a definitive transcendence of the long downturn is the overcoming of the secular problem of manufacturing over-capacity and over-production, as manifested in a *system-wide* recovery of profitability. (p. 251)

By contrast, the Marxian explanation of the decline of the rate of profit presented here implies that the future trend of the rate of profit does not depend at all on the degree of competition within manufacturing. According to this Marxian explanation, the degree of competition affects only the distribution of the total amount of surplus-value among individual sectors and individual firms. The degree of competition does not affect the total amount of surplus-value in the economy as a whole. A reduction in the degree of competition in manufacturing, according to this explanation, would not solve capitalism's problem, i.e. it would not increase the general rate of profit; instead it would only regain part of the monopoly profit that the manufacturing sector had previously lost in recent decades.

According to the Marxian explanation, the future trend of the rate of profit seems to depend mainly on the future trend of the ratio of unproductive labour to production labour. If this ratio continues to increase more or less at the same slower rate since the 1970s (roughly 1% per year), then this increase will continue to exert downward pressure on the rate of profit, which will make it highly unlikely that the rate of profit will increase significantly. On the other hand, if for some reason, this ratio stops increasing in the years ahead, then a full recovery of the rate of profit, and hence of the US economy, is much more likely. Which of these two possible trends in the ratio of unproductive labour to productive labour is more likely is difficult to predict.

The strong increase of this ratio throughout the postwar period, although somewhat less in recent decades, would by itself seem to suggest that this ratio will continue to increase in the years ahead. The main cause of the relative increase of unproductive labour identified by my preliminary analysis (Moseley 1992, Chapter 5) was the slower "productivity" growth of circulation labour compared to productive labour, which seemed to be due to the inherent difficulties of mechanizing the functions of buying and selling.

However, there is one important new factor to consider: computer technology. New computer technology is being applied especially to many of the unproductive functions of circulation (accounting, billing, check processing, cashiering, money exchange, etc.). This new technology has reduced and will probably continue to reduce the need for circulation labour. Through 1994, this effect was not strong enough to fully eliminate the relative increase of circulation labour. However, the pace of introduction of computer technology has accelerated in recent years and is likely to continue to increase in the years ahead (the rapid growth of "on-line buying" is perhaps the most visible example; but a similar rapid transformation is also taking place in the "back rooms" of business enterprises, where many of these circulation tasks are performed).

Thus we see that the Marxian theory of the decline of the rate of profit provides an altogether unique explanation of the rapid development of computer technology in recent years. According to this explanation, this new computer technology has been developed in order to increase the rate of profit of the capitalist economy as a whole by reducing the need for unproductive labour (and also by reducing the cost of machinery, which reduces the composition of capital). Whether these effects will be strong enough to more or less fully restore the rate of profit is the most crucial question for the US (and world) economy at the present time, as we head into the new millennium.

In any case, Marxian theory suggests that the future of the rate of profit, and hence of the US and world economy, does not depend on the degree of competition in manufacturing, as Brenner suggests, but instead depends on whether the relative increase of unproductive labour can be stopped, by computer technology or otherwise. It is difficult to determine which of these two very different preconditions for a full recovery of the rate of profit is more likely to happen in the years ahead. But it seems to me that a cessation of the relative increase of unproductive labour is less likely to happen than a reduction of competition in manufacturing. Therefore, Marxian theory seems to suggest that a full recovery of the rate of profit, and hence of the economy, is less likely to happen, compared to the implications of Brenner's explanation.

Perhaps in the years ahead, trends will be such as to permit a fairly decisive empirical test between these two competing theories of the decline of the rate of profit in the postwar US economy. If the degree of competition were reduced significantly, while at the same time, the ratio of unproductive labour to productive labour continued to increase as in recent years, then Brenner's explanation predicts that the rate of profit should increase significantly; but the Marxian explanation predicts less of an increase in the rate of profit, and perhaps none at all (depending on what is happening at the same time to the rate of surplus-value and the composition of capital). In other words, Brenner's theory suggests that a sufficient decline in the degree of competition within manufacturing would solve capitalism's problem of insufficient profitability, but Marx's theory suggests that it would not. This empirical test would not be a mere academic exercise; it would determine the fate of the US and world economy for the first decade or so of the 21st century.

In conclusion, I would like to emphasize again that, in spite of my disagreements with Brenner, I appreciate very much his very significant contribution to the debate over the causes of the economic stagnation of recent decades. His essay has generated a great deal of attention on this all-important question, and in particular on the decline of the rate of profit as the main cause of this stagnation. However, in my view, Brenner's explanation of the causes of the decline of the rate of profit in the US economy is inadequate, primarily because it is not grounded in a general theory of profit and the general rate of profit.

I look forward to further discussion of these important questions, with Brenner and with others.

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ENDNOTES