

**Productive and Unproductive Labor in the US Economy:
Does the Distinction Matter?
A reply to Houston and Laibman**

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Abstract: Responding to criticisms of Mohun (1996) by Houston (1997) and Laibman (1999), this paper explores the consequences of the competing definitions proposed for productive labor, and concludes that abandoning the productive-unproductive labor distinction renders the Marxian theory of capitalist accumulation an unconvincing account of US accumulation from 1948 to 1989.

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Reflections on a theoretical debate

I would like to thank the two Davids, Houston (1997) and Laibman (1999) for their comments on my paper Mohun (1996). Their criticisms are similar in the main, questioning whether it makes any sense to distinguish ‘production’ from ‘circulation’ and to confine the production of value and surplus value to the former. I will not repeat the arguments of these earlier papers.¹ Instead, the purpose of this reply is to try to show why the productive/unproductive labor distinction matters.

I want to begin with the questions with which Laibman (1999) finishes. He asks,

“*Why* is labor the source and substance of value? What validity criteria should be applied to the substantiation of this proposition? What role does this proposition play in the theory of the nature and dynamics of capitalist society?” (Laibman 1999, p.72)

and he talks of “the urgent need to pose these basic questions” (ibid.) The reason why labor has a special place in Marxian theory is uncontroversial, being a ‘primitive postulate’ of historical materialism: purposive productive labor is the essence of what it means to be human; this activity alters the environment within which such labor occurs, and this alteration in turn alters the producers themselves.² In and of itself, this does not demonstrate that labor is the source and substance of value, for there can be no such demonstration other than assertion. But it does predispose one to think in those terms. All that can be done with this understanding at a theoretical level is to assert (or to deny) that such assertions are reasonable. Whether they are acceptable (the “validity criteria”) depends on what can be done with them. And one test (perhaps the most important test) of the success of such a construction is empirical; that is, can a theory be built upon the foundation of the labor theory of value that generates propositions which enable us to understand the historical evolution of capitalism as it has actually occurred? And this is simultaneously to approach

¹ Save, that is, for corrections. Laibman comments (Laibman 1999, p.64, n.4) that I am in two minds as to how to classify non-waged labor. The definition (in Mohun 1996 p.36, Proposition 4) that non-wage labor is neither productive nor unproductive, but non-productive, was intended to refer to housework and similar activities, and I should have called it non-remunerated labor. Non-wage labor in Table 1 (ibid. p.40) is explicitly labor which receives remuneration which is different from wages (either the labor of employers or that of the self-employed).

² Of course theorists who deny the existence of ‘essences’ will find this a controversial statement.

Laibman's third question, for unless it can be specified how the labor theory of value can be used to understand 'the nature and dynamics of capitalist society', it should be abandoned.

Hence it is my view that the 'urgent need' is not to pose questions about theoretical postulates (which are probably unanswerable), but rather to investigate the historical development of capitalism from a Marxist perspective. If we have a theory that says that its fundamental variables might rise, or fall, through time, then it is not obvious how to confront the propositions of that theory with empirical evidence. The theory might organise the interpretation of the evidence, but the evidence cannot be used to say that the theory is 'right' or 'wrong'. Putting the point more strongly, if theory and reality are different, so that empirical evidence is an issue, then theory is different from a metaphysical belief system. In the latter, there are limitless immunising strategies available to insulate beliefs from confrontation with reality, whereas with a theory it is important to be able to specify, at least in principle, what sort of evidence would lead one to reject that theory. Consider then the Marxist theory of capitalist development. It postulates general trends, and while these trends can be reversed, such reverses are countervailing tendencies, which do not dominate the general trend. In particular, the theory postulates the following inter-related (tendential) propositions:

- the rate of surplus value will rise as absolute and relative surplus value are produced;
- as relative surplus value is produced, then, for a given money wage, both the value of money and the value of labor-power will fall;
- with the productivity increases which produce relative surplus value, real wages will tend to rise;
- productivity increases are typically the outcome of 'labor-saving capital using' technical change, via concentration and centralisation; if technical change is of this type, then it must generate increases in the technical and organic compositions of capital;
- productivity increases will produce some negative feedback via price reductions, but these will not be so great as to produce a fall in the value composition of capital; i.e. the increase in quantities through accumulation will tend to dominate the price reduction effects of productivity increases;
- because of the bias of technical change, the reserve army of labor will tend to rise, along with relative immiserisation;

- in the course of establishing these secular tendential developments, accumulation will tend to proceed cyclically, and the rate of profit will tend to fall (at least cyclically).

Marxist discussion tends to focus on the theoretical logic of the postulated bias of technical change and its effects on the composition of capital, and on the analytical causes of a falling rate of profit. These are not my concern here. Rather, if the above propositions form a ‘picture’ of capitalist development, then it is important to investigate the extent to which there is empirical support for that picture.³

That is why the approach in Mohun (1996) is explicit in its advocacy of the approach suggested in this journal by Foley (1982).⁴ Indeed, that 1996 paper was written in the course of an attempt at an empirical analysis of the Australian economy,⁵ and in the construction of the paper I therefore saw propositions 1-6 as interlinked in that endeavor. Laibman (1999) is only concerned with propositions 3 and 4; he is not concerned with the empirical literature, but rather with the coherence of the theory itself, arguing that the empirical literature is meaningless if the theoretical distinction between productive and unproductive labor is neither coherent nor valid. Houston (1997) uses the complexity of reality to suggest that the abstractions used in Mohun (1996) are inappropriate.

Theoretical coherence is obviously important. But I have little further to say about the theoretical issues. The criteria for whether labor is productive or unproductive are straightforward. Does an activity produce a new use-value or alter an existing one in some way? Does that process of production produce surplus value, or does it consume it? For those who assert that all wage labor is productive, then all such labor does produce a new use-value, or does alter an existing one, and it does produce surplus value. Hence all ‘circulation’ activity is productive of a use-value that is a bearer of

³ While one might doubt the logic behind the derivation of some of the postulates, they might nevertheless obtain as empirical phenomena.

⁴ Laibman (1999, p.71) remarks that the categories of productive and unproductive labor do not appear in Foley (1982). But he could consult Foley’s 1986 book, ch.7, especially pp.116-24.

⁵ See Mohun (1998).

value and surplus value, and there is no process employing wage labor that does not produce surplus value.⁶

Conversely, for those who assert that some wage labor is unproductive, then that labor does not produce a new use-value, or does not alter an existing one, and it does not produce surplus value, but rather consumes it. In particular, all ‘circulation’ activity is by definition unproductive, transferring commodity capital into money capital and thence into productive capital. These are definitions, and the “precise and convincing deduction” (rather than “an exercise in semantic persuasion”) which Laibman requires (Laibman 1999, p.69, n.8) is just not possible.

For example, if privately employed wage labor in circulation activities is productive of value and surplus value, then the argument of the first six chapters of *Capital I* is difficult. To make sense of it, one has to argue either that the subject matter is simple commodity production (Houston 1997) or that it is a heuristic designed purely to get at the process of production (Laibman 1999). Houston’s approach forces one into a controversial logico-historical methodology; Laibman’s approach is more arbitrary, because it would make equal sense as a heuristic to assume equality of the values of inputs and outputs in production and to focus on the increase in value in circulation. These approaches of Houston and Laibman, then, no more and no less than that of Mohun (1996), are part of a ‘vision’ of the process of capitalism. If that vision is to convince, then it must show that it has something sensible, indeed interesting, to say about actual capitalist development. For this is the only game in town, and without informed empirical analysis, Marxian theory is of no interest. If Marxism is to regain any credibility, it is going to have to show that it *can* say something empirical and meaningful about modern capitalism and its historical evolution.

The remainder of this paper is empirical. It attempts to show that a Marxist approach that uses the productive-unproductive labor distinction is consistent with the basic vision suggested by Marx’s theory of capitalist accumulation (at least over the greatest period of accumulation in the history of capitalism to date), and that it enables one to think fruitfully about the changing structure of an economy through time. Conversely, one that ignores the productive-unproductive labor distinction is inconsistent with that theory, at least in its application in the second half

⁶ Laibman (1999, p.63, n.3) ignores the problem of workers in the state sector, and gives no hint as to how he sees them in this context. More generally, one might question whether a category such as the rate of exploitation is well-defined under circumstances in which the production of value continues to the point of consumption; and one might question Laibman’s explication of the category ‘use-value’ in his remark “does an object to which you do not have title have the same use-value as one to which you do?” (*ibid.*, p.62)

of the twentieth century. This poses a challenge to Marxists who would abandon productive-unproductive labor distinction, for it suggests that combining such an abandonment with adherence to the Marxian vision of accumulation is not possible (unless that vision is reduced to the uninteresting proposition that variables might rise or fall through time).

US capitalism 1948-89

Since the categories 'productive/unproductive' are defined relative to the production of value and surplus value, any empirical analysis has first to propose some account of how the value magnitudes of Marxian theory are related to observable empirical data. Several approaches can be found in the literature. One is simply to assume some correspondence (Weisskopf 1979). A second is to reorder the flows recorded in national accounts and input-output tables to produce monetary magnitudes of Marxian variables, and to use regression analysis to show an approximate correspondence between labor values and prices (Shaikh and Tonak 1994, Cockshott *et al.* 1995). A third is to use theoretical considerations to assert an exact correspondence between labor value aggregates and money value aggregates (Foley 1982, and rather differently, Moseley 1991, and contributors to Carchedi and Freeman 1996). Whichever is adopted will structure the interpretation of the empirical evidence. In Mohun (1994, 1996), the accounting framework proposed by Foley (1982) is followed, and this will be continued below. This enables me to say that the profit-wage ratio is identical to the rate of surplus value, and to interpret the fixed capital stock to wages ratio as (a proxy for) the value composition of capital.⁷

Looking at macroeconomic time series, one obvious variable on which to focus is the rate of profit (r). Any formal macroeconomic model of the economy has to generate explanations/predictions that are compatible with observed time series. If they are to be other than accounting frameworks, such models must propose behavioural hypotheses, but for present purposes it is sufficient to concentrate on the accounting framework itself, and this requires in turn some meaningful decomposition of the rate of profit. First, define the rate of profit as the ratio of profits (II) to the private sector capital stock (K), where profits are the difference between (adjusted) Net Domestic Product (NDP) and wages, and the capital stock is defined in net rather than gross terms. Two adjustments are made to NDP . First, imputed rent is subtracted (because it does not correspond to any flow of value), and second, the wages, salaries and

⁷ A proxy, since the circulating capital elements of constant capital are omitted.

supplements of state sector workers are subtracted (because they produce no marketed output).⁸ Call such adjusted *NDP* ‘money value added’ or *MVA*. Then the rate of profit is defined as

$$r = \frac{\Pi}{K} = \frac{MVA - W}{K} \quad (1)$$

This is illustrated below for the US economy from 1948 to 1989.

(Chart 1 about here)

Broadly, the rate of profit falls from 1948 to 1958, rises from 1958 to 1965, falls from 1965 to 1982, and rises from 1982 to 1989, reaching its mid-1970s level by the end of the 1980s. In considering decompositions of the rate of profit, I will consider two cases, one in which all labor is productive, and one in which some labor is unproductive. In both cases, I will assume that all labor is employed in capitalist firms under capitalist conditions.⁹

i) All labor is productive

If all labor is productive, an obvious decomposition of the rate of profit is to divide numerator and denominator by total wages, interpreting the numerator as the rate of surplus value and the denominator as the value composition of capital. That is,

$$r = \frac{\Pi}{K} = \frac{\Pi/W}{K/W} \quad (2)$$

⁸ To say that state sector workers produce no marketed output is a stylization, for it is increasingly the case (at least in the UK) that some (though not full) charges are made for state services where this is possible. Nevertheless, the stylization follows standard national accounting practice (based on SNA 93), which defines the general government sector as institutional units engaged in the non-market production of output for collective and individual consumption, financed out of compulsory payments, and/or engaged in redistribution.

⁹ This is not an adequate treatment either of the self-employed or of capitalists themselves, but a ‘broad brush’ treatment will suffice for present purposes.

Movements in the rate of profit can be accounted for by the differences in the movement of these two ratios. This is attractive because there is a sustained theoretical treatment of the movement of these ratios in *Capital* that can be used as a starting point for the translation of an accounting framework into a theory.¹⁰

This decomposition is illustrated in Table 1, showing these decompositions for the US economy from 1948 to 1989, as both a cumulative change over the whole period, and as changes within two profit cycles 1948-65 and 1965-89.¹¹

[Table 1 about here]

The two profit cycles are rather different. In the earlier one, the dominating effect in the downswing is the rise in the composition of capital K/W , and in the upswing is the rise in the rate of surplus value I/W , but over the whole cycle the rise in K/W dominates. In the later and rather longer cycle, movements in I/W dominate, and to such an extent that they continue to dominate when both cycles are considered together. That is, of the overall 50 per cent fall in the rate of profit, three-fifths is accounted for by the shift from profits to wages, and the remaining two-fifths by the rise in the composition of capital.

Table 2 shows the same decomposition, but over NBER dated cycles.¹²

[Table 2 about here]

¹⁰Other decompositions are obviously possible. For example, one could divide numerator and denominator by MVA , so that movements in the rate of profit are accounted for by the sum of movements in the aggregate profits share (used as an indicator of class struggle) and in average capital productivity (the inverse of the capital-output ratio, used as an indicator of the capital intensity of production). I will restrict attention to the decomposition of equation (2), purely because of its 'classical' provenance in the history of Marxism.

¹¹Peaks are denoted by P and troughs by T.

¹²The NBER dates the last peak in July 1990. Since the data set I use ends in 1989, I have used 1989 as the final peak. Note also that I have used 1979 as a peak rather than the NBER date of January 1980. It is interesting to note that prior to 1970, turning points in the series for the rate of profit are not at all well correlated with NBER turning points; from 1970 onwards, they are so.

With the exception of the 1969-73 cycle when there was a negligible total rise of a quarter of one per cent, the rate of surplus value fell in every cycle up to and including the 1980 trough. Thereafter it has risen. And with the exception of a small fall in the 1957-60 cycle, the composition of capital rose across every cycle until the 1981 peak, after which it fell sharply through the 1980s.¹³ The two ratios are illustrated in Chart 2.

(Chart 2 about here)

This is not a picture that is easy to reconcile with standard Marxist theory. The competitive struggle to increase productivity through innovation is supposed to drive up the composition of capital, and this is supposed to increase relative surplus value and hence the rate of surplus value. Hence there is a presupposition that the composition of capital and the rate of surplus value will be positively related. But the US history is one of a generally inverse relation between the rate of surplus value and the composition of capital (the only exceptions being the 1957-60 and 1969-73 cycles). Table 3 illustrates with the variance-covariance matrix.

[Table 3 about here]

Assuming that volatility is measured by variance, much the greater component in the volatility of the annual rate of change in the rate of profit is the variance of the annual rate of change in the rate of surplus value. In terms of associations between the series, the correlation matrix tells the same story.

[Table 4 about here]

Annual rates of change in the rate of profit are closely correlated with annual rates of change in the rate of surplus value, and are negatively correlated with annual rates of change in the composition of capital, but the correlation with the latter is only about two thirds that with the former (in absolute terms). Movements in the rate of surplus value dominate those of the composition of capital in their effects on the rate of profit. Moreover, whereas the theory predicts a positive correlation between the annual rate of change of the composition of capital and the annual rate of change of the rate of surplus value, the empirical evidence shows this correlation to be negative.

¹³A similar picture emerges from the decomposition into profit share and capital productivity: consistently falling profit share (apart from a small rise over the 1969-73 cycle) and falling capital productivity (apart from a small rise over the 1957-60 cycle) until the Reagan years, which then see a rising profit share and rising capital productivity.

The way in which Marxists have traditionally dealt with such *prima facie* incompatibility of theory and evidence is either to ignore the evidence, or to assert that the evidence is ‘really’ different from what it appears to be, or to add something (some countervailing condition perhaps) which can render the evidence compatible with the theory. The first route of ignoring evidence is to substitute (usually dogmatic) metaphysics for science, and is of little interest. As regards the second route, that the evidence is ‘really’ different from what it appears to be, Laibman (1993) has rightly criticised attempts to construct Marxian empirical measures which have no linkage to “real processes” (Laibman 1999 p.70).¹⁴ Hence all that is left is to add something.

Consequently, to retain the Marxist account of both long run secular and shorter run cyclical capitalist development, the obvious addition is to assert that, as a countervailing tendency, movements in the rate of profit reflect the changing balance of class forces. During periods when the rate of profit falls (1948-58 and 1965-82), the US working class must have been sufficiently economically strong to wrest all productivity gains, and more, from the capitalist class. And when the rate of profit rises, (1958-65 and 1982-89) the reverse must have been the case, but over the whole period, the former predominates. Given the light regulation of the US labor market and its weak labor market institutions, one possible indicator of working class strength is the tightness of the labor market: the lower the rate of unemployment the more is the working class able to appropriate productivity gains, and hence the lower is real profits per hour. The correlation of real profits per hour against the unemployment rate is 0.54, so that there is indeed a positive association; but the scatter diagram of Chart 3 does not show a close enough association for this story to be entirely convincing.

[Chart 3 about here]

Moreover, the correlation of the aggregate profit-wage ratio against the unemployment rate lends no support to this story, because while the association is quite strong (an absolute value of 0.73), the sign is *negative*, which is just the opposite of what would be required. Finally, a more general association with a periodization of world capitalism is not strong either, for inspection of Chart 1 shows that the US rate of profit fell for a further ten years after the end of the ‘golden age’. And the correlation between aggregate profit-wage ratio and the unemployment rate for the period 1948 to 1973 is negative and weaker at -0.39.

¹⁴Perhaps I was not sufficiently clear, but Houston (1997) has misunderstood my position. The only rate of profit is that defined by equation (1). There is no ‘Marxian’ rate of profit that is different, more basic, underlying, or whatever.

To summarise, if all labor is assumed productive, the empirical evidence from the USA does not appear to be consonant with the basic propositions of the Marxian theory of accumulation. A story of working class strength could be added, as a determining countervailing factor, but a convincing story of this has yet to be told, for the evidence is not strong. The addition of working class strength as a countervailing factor is therefore vulnerable to the charge of constructing an immunising strategy in order to avoid a potentially fatal conflict between the Marxian theory of accumulation and the empirical evidence. One might assert that

“Marx’s C-M-C vs. M-C-M’ distinction is a brilliant insight into two forms of market relations, and his questions surrounding the origin of surplus value were a pathbreaking means of investigating the connection between the surface structure of formal equality in exchange and a deep structure of exploitation and coercion.” (Laibman 1999, p.68)

Yet the analytics of the Marxian theory of accumulation which build on this insight and these questions (capital as ‘self-expanding value’) do not appear to be robust as an account of capitalist development when confronted with empirical evidence which is constructed on the basis that all labor is productive.

ii) Only some labor is productive

Now assume that labor is either productive or unproductive, as asserted in Mohun (1996). Call the wages paid to productive labor $W(p)$ and those to unproductive labor $W(u)$. Then the rate of profit can be written as

$$\begin{aligned} r = \frac{\Pi}{K} &= \frac{MVA - W(p) - W(u)}{K} \\ &= \frac{\{MVA - W(p)\} / W(p) - W(u) / W(p)}{K / W(p)} \end{aligned} \quad (3)$$

The first term in the numerator is the rate of surplus value, and the second is the ratio in wage terms of unproductive to productive labor; the denominator is (a proxy for) the value composition of capital.¹⁵ Movements in the rate of profit

¹⁵This is not quite right, because unproductive capital is included in the numerator of the composition of capital. However, commercial and financial capital has little fixed capital stock relative to productive capital, and so it is unlikely there will be too much distortion.

are then accounted for by movements in the numerator and denominator of equation (3). Notice that the definitions of the rate of surplus value and the composition of capital in equation (3) are different from those in equation (2). Table 5 describes US post-war profit cycles in terms of this decomposition.

[Table 5 about here]

As with the previous story, within each cycle, the composition of capital rises in the downswing and falls in the upswing, but, unlike in the previous story, over each cycle as a whole, and over both cycles taken together, movements in the composition of capital dominate. Over each cycle as a whole and over the whole period, the composition of capital and the rate of surplus value move in the same direction, although the movement of the rate of surplus value in the second cycle's downswing remains anomalous. Table 6 shows the same decomposition, but over NBER dated cycles.

[Table 6 about here]

Once labor employed in circulation activities is considered unproductive, then over the whole period the rate of profit falls by some 49 per cent, accounted for by a rise in the composition of capital by some 53 per cent, and a rise in the rate of surplus value by 40 per cent which is offset by a rise of 70 per cent in the wage ratio of unproductive to productive labor. The only cycle in which the rate of surplus value does not rise is 1969-73 cycle, which both sees the end of the 'golden age' in the international context and is perhaps the most turbulent period of US post-war history. With the exception of the 1969-73 and the 1981-89 cycles, the composition of capital rises and the rate of surplus value rises across each cycle; and the only significant falls in the rate of surplus value are in the upswing of 1970-73 and the downswing of 1975-79. And the substantial rise in the rate of profit during the 1980s is accounted for by a long sustained rise in the rate of surplus value and a large increase in capital productivity as the composition of capital falls steadily. All of this is compatible with standard Marxist theory. There is little evidence in the data for any strength of the US working class vis-à-vis capital. Rather, the wage ratio of unproductive to productive labor, which rises in every phase except the upswings of 1970-73 and 1975-79, provides information on the changing structure of the US economy, as increasing amounts of surplus value are required to convert commodity capital into money capital and thence into productive capital.

Turning now to volatility, Table 7 shows that the variance in the annual rate of growth of the composition of capital, when not all labor is productive, is nearly double that when all labor is assumed productive. Annual rates of change in the rate of surplus value and the wage ratio of unproductive to productive labor are considerably lower, although their difference (the numerator of equation (3)) is high.

[Table 7 about here]

In terms of associations between the series, the correlation matrix in Table 8 tells a similar story.

[Table 8 about here]

In annual growth rate terms, the numerator of equation (3) is less positively correlated with the rate of profit than the numerator of equation (2), and the denominator more negatively correlated. As one would expect, the annual rate of growth of the rate of profit is positively correlated with that of the rate of surplus value, and negatively correlated with that of the wage ratio of unproductive to productive labor, and with that of the composition of capital. Moreover, the growth in the rate of surplus value and the growth in the composition of capital are both positively associated with the growth in the wage ratio of unproductive to productive labor (correlation coefficient of 0.46 and 0.75 respectively). This suggests a story, at least until the early 1980s, of productivity growth driven by labor-saving capital-using technological change, combined with growing difficulties in the sphere of circulation; labor is displaced from employment in the production of value and simultaneously is sucked into employment in the sphere of circulation. Such labor is financed by the rise in productivity in the productive sector, leaving little net gain for capital overall. Hence the rise in the composition of capital drives the rate of profit down.

By contrast, following the trough of 1982, the negative effects of strong growth in the wage ratio of unproductive to productive labor are swamped by the rise in capital productivity and the associated rise in the rate of surplus value, a restructuring of US capital after some thirty years of decline, which produces a large rise in the rate of profit.

Finally, in Mohun (1996, p.51, equation (12)) I proposed a decomposition of what I have called above 'the rate of surplus value when all wage labor is productive', calling it the 'class distributive' rate of exploitation $e(d)$, which I reproduce here:

$$e(d) = \frac{W(p)}{W(u) + W(p)} \left(\frac{S}{V} - \frac{W(u)}{W(p)} \right) \quad (4)$$

The three constituent ratios and $e(d)$ are illustrated in Chart 4.

[Chart 4 about here]

Contrary to Laibman's scepticism (Laibman 1999, p.70), I maintain my assertion that this does indeed "provide a starting point for a rich agenda of empirical investigation" (Mohun 1996, p.51), for it explicitly directs attention to the interaction between the rate of surplus value on the one hand, and structural change on the other.

Conclusion

This paper has had the aim of investigating the extent to which the historical record of some forty years of US capitalism provides broad evidence for the Marxian theory of capital accumulation. Implicit in the paper is the argument that decomposing the rate of profit into constituent elements and investigating movements of these latter is a legitimate accounting exercise. The paper contrasts two such decompositions, one in which all private sector wage labor is productive, and the other in which only some such labor is productive. Of course, the wage ratio of unproductive to productive labor in equation (3) is not a ratio to which capitalists relate; but then neither is the profit share of national income, nor the composition of capital, nor the profit-wage ratio. The point is to use a decomposition that is informative. Critics of the productive/unproductive labor distinction argue that it is arbitrary and hence not informative. But the empirical evidence argues for the opposite. The paper concludes that abandoning the distinction between productive and unproductive labor, and defining all private sector wage labor as productive, at the same time as maintaining the broad outlines of the Marxian theory of capitalism, is not possible, unless some implausible immunising stratagem is proposed. If one thinks that Marxian theory provides a vision that is in some sense true, and one includes in that vision definitions of productive and unproductive labor, then the empirical measurement of such definitions yields results which are broadly consonant with what the Marxian theory of capitalist development would lead one to expect, at least for the longest and most sustained period of accumulation in the history of capitalism. This is not in itself evidence that the theory is true. But it is suggestive that a Marxian theory built on ignoring the distinction between productive and unproductive labor is not very useful.

Yet the contrast sketched in this paper is too crude. It is over-schematic, indeed ‘undialectical’, to contrast a worldview in which all labor is productive and ‘class struggle’ determines everything, with one in which not all labor is productive and ‘capital’ determines everything. For in the former, the tendential laws of capitalist development disappear, and in the latter, class struggle is reduced to an epiphenomenon of the self-expansion of capital. A theory in the Marxian tradition which is empirically informative must clearly embrace both. In pursuit of this, the paper suggests that one interesting way in which the changing structure of the US economy can be examined using Marxian categories is through the wage ratio of unproductive to productive labor (or equivalently through the wage ratio of productive to total labor). This opens up an area of conjunctural analysis that has been little explored. Within a different but related framework, Moseley (1991, ch.5) has suggested a focus on commercial labor and its relatively slower productivity growth compared with that of productive labor, which required a rising proportion of the labor force to sell the more rapidly growing output of productive labor. And Duménil and Lévy (1999) have more generally proposed a periodization that sees the emergence of a new ‘managerial’ mode of production, as management is separated from property ownership, and finance and credit relationships assume a greater predominance. But more remains to be done, both for the US and for other developed capitalist economies, both to investigate and to develop the claims of Marxian theory as a guide to the analysis of developed capitalism.

Appendix: Data Sources

The data is annual, and is all taken from secondary sources, which suffices for the purposes of this paper. The major difficulty in the primary sources lies in the calculation of the wage bills of productive and unproductive labor. I have relied on the calculations presented by Shaikh and Tonak (1994), which are sufficiently similar to what I would need to calculate along the lines of Mohun (1996). But I have excluded Wages to Government Workers from the series for Wages to Unproductive Workers. While there is some element of arbitrariness empirically in making the productive/unproductive distinction, I do not believe that marginally different choices would alter significantly the argument of the text.

Series for *GNP*, *NNP*, *GDP*, Imputed Rent, and Wages to Government Workers, to Productive Workers and to Unproductive Workers are all taken from the appendices to Shaikh and Tonak (1994). The Capital Stock series is from

Duménil and Lévy (1993). The dating of NBER cycles is taken from Romer (1999). The unemployment rate is from BLS. *MVA* is computed as *GDP* less capital consumption (taken as the difference between *GNP* and *NNP*) less Imputed Rent less Wages to Government Workers. Annual and total rates of growth are computed as differences in natural logs divided by the time span over which the growth is taken. All calculations were performed using Microsoft Excel in Office 97.

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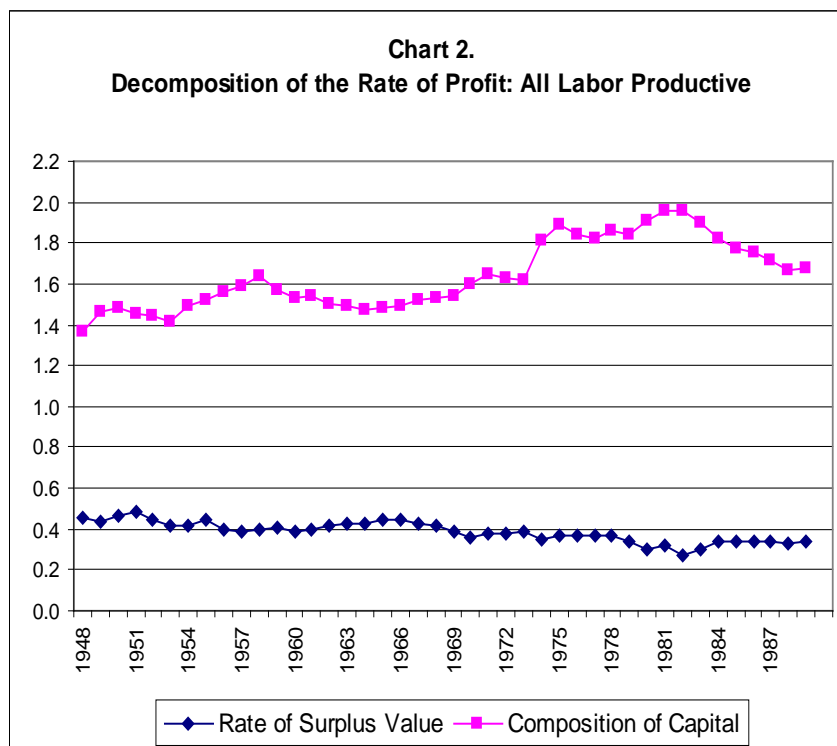
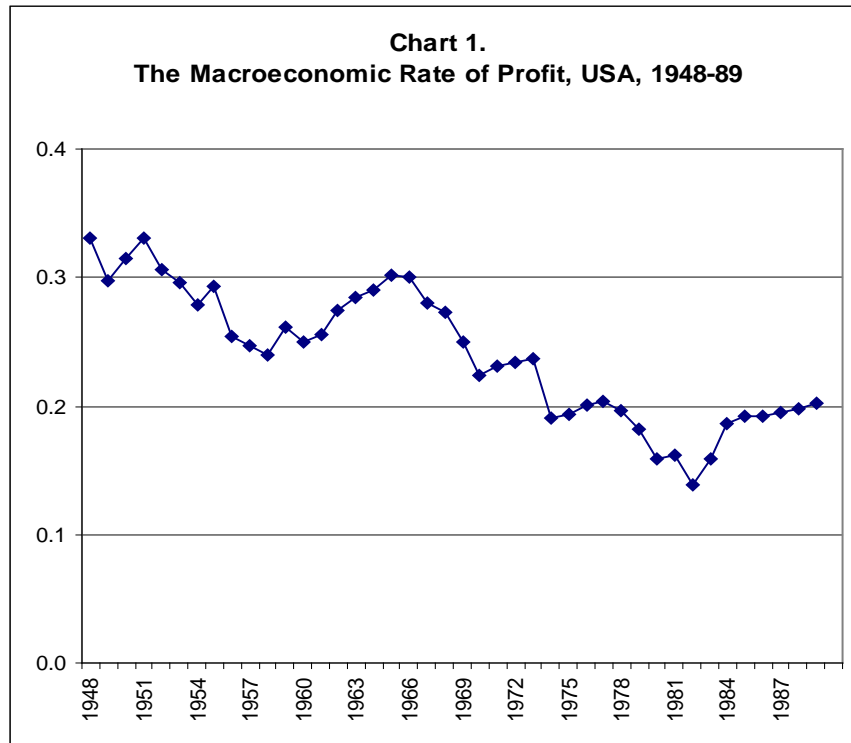
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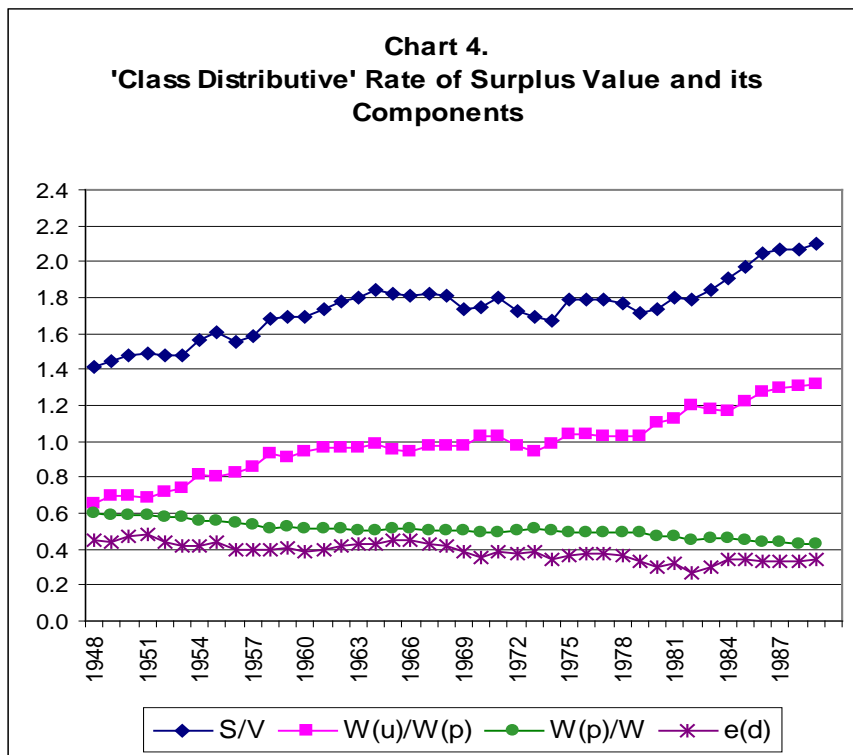
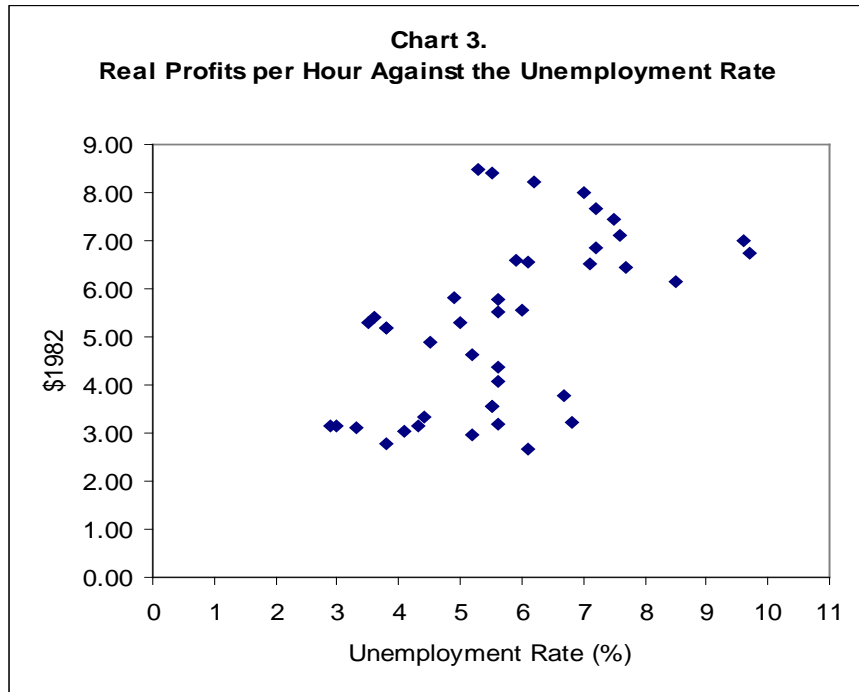


Table 1**Decomposition of the rate of profit over profit cycles: all labor productive.**

	Average annual change (%)			Total change (%)		
	Rate of Profit	Profit-Wage Ratio	VCC Proxy	Rate of Profit	Profit-Wage Ratio	VCC Proxy
1948P-1958T	-3.20	-1.43	1.77	-32.05	-14.35	17.70
1958T-1965P	3.29	1.90	-1.39	23.06	13.33	-9.73
1948P-1965P	-0.53	-0.06	0.47	-8.99	-1.02	7.97
1965P-1982T	-4.60	-2.99	1.62	-78.28	-50.75	27.53
1982T-1989P	5.45	3.23	-2.22	38.15	22.63	-15.52
1965P-1989P	-1.67	-1.17	0.50	-40.14	-28.12	12.02
1948P-1989P	-1.20	-0.71	0.49	-49.13	-29.14	19.99

Table 2**Decomposition of the rate of profit over NBER cycles: all labor productive.**

	Rate of Profit ($\Delta\%$)	Profit-Wage Ratio ($\Delta\%$)	VCC Proxy ($\Delta\%$)
1948P-1949T	-10.58	-4.17	6.41
1949T-1953P	-0.39	-3.44	-3.06
1948P-1953P	-10.97	-7.61	3.35
1953P-1954T	-6.16	-0.92	5.24
1954T-1957P	-12.06	-6.04	6.02
1953P-1957P	-18.22	-6.95	11.26
1957P-1958T	-2.87	0.22	3.08
1958T-1960P	4.19	-2.29	-6.48
1957P-1960P	1.32	-2.08	-3.40
1960P-1961T	2.07	2.59	0.52
1961T-1969P	-2.47	-2.77	-0.30
1960P-1969P	-0.40	-0.18	0.22
1969P-1970T	-11.13	-7.30	3.83
1970T-1973P	6.00	7.54	1.54
1969P-1973T	-5.13	0.25	5.37
1973P-1975T	-20.17	-4.76	15.40
1975T-1979P	-6.19	-9.12	-2.93
1973P-1979P	-26.36	-13.89	12.47
1979P-1980T	-13.30	-9.57	3.74
1980T-1981P	1.54	3.91	2.37
1979P-1981P	-11.76	-5.65	6.11
1981P-1982T	-15.77	-15.65	0.12
1982T-1989P	38.15	22.63	-15.52
1981P-1989P	22.38	6.98	-15.40
1948P-1989P	-49.13	-29.14	19.99

Table 3

Variance-covariance matrix for the rate of profit: all labour productive
(annual rates of growth)

	r	Π/W	K/W
r	55.9029		
Π/W	41.6419	36.1010	
K/W	-15.2279	-6.0078	9.8731

Table 4

Correlation matrix for the rate of profit: all labour productive
(annual rates of growth)

	r	Π/W	K/W
r	1.0000		
Π/W	0.9269	1.0000	
K/W	-0.6482	-0.3182	1.0000

Table 5

Decomposition of the rate of profit over profit cycles: not all labor productive.

	Rate of Profit	Rate of Surplus Value	Average annual change (%)		VCC Proxy
			W(U)/W(P)	S/V-W(U)/W(P)	
1948P-1958T	-3.20	1.78	3.44	0.07	3.28
1958T-1965P	3.29	1.12	0.31	2.06	-1.24
1948P-1965P	-0.53	1.51	2.15	0.89	1.42
1965P-1982T	-4.60	-0.11	1.36	-2.28	2.32
1982T-1989P	5.45	2.30	1.37	4.00	-1.45
1965P-1989P	-1.67	0.59	1.36	-0.45	1.22
1948P-1989P	-1.20	0.97	1.69	0.10	1.30
			Total Δ%		
1948P-1958T	-32.05	17.84	34.36	0.74	32.78
1958T-1965P	23.06	7.85	2.18	14.39	-8.67
1948P-1965P	-8.99	25.69	36.54	15.12	24.12
1965P-1982T	-78.28	-1.91	23.13	-38.81	39.47
1982T-1989P	38.15	16.07	9.60	27.97	-10.17
1965P-1989P	-40.14	14.17	32.73	-10.84	29.29
1948P-1989P	-49.13	39.86	69.27	4.28	53.41

Table 6

Decomposition of the rate of profit over NBER cycles: all labor productive.

	Rate of Profit	Rate of Surplus Value	Total $\Delta\%$ W(U)/W(P)	S/V-W(U)/W(P)	VCC Proxy
1948P-1949T	-10.58	2.12	6.25	-1.64	8.94
1949T-1953P	-0.39	2.20	5.58	-1.11	-0.72
1948P-1953P	-10.97	4.32	11.83	-2.74	8.22
1953P-1954T	-6.16	5.97	8.86	2.95	9.11
1954T-1957P	-12.06	1.30	5.57	-3.50	8.55
1953P-1957P	-18.22	7.27	14.43	-0.55	17.66
1957P-1958T	-2.87	6.25	8.09	4.03	6.90
1958T-1960P	4.19	0.13	1.50	-1.57	-5.76
1957P-1960P	1.32	6.38	9.60	2.47	1.14
1960P-1961T	2.07	2.56	1.82	3.48	1.40
1961T-1969P	-2.47	0.34	2.02	-1.78	0.69
1960P-1969P	-0.40	2.90	3.84	1.70	2.10
1969P-1970T	-11.13	0.56	4.65	-4.97	6.16
1970T-1973P	6.00	-3.37	-8.40	3.38	-2.62
1969P-1973T	-5.13	-2.80	-3.75	-1.59	3.54
1973P-1975T	-20.17	5.39	9.49	-0.04	20.12
1975T-1979P	-6.19	-4.23	-0.63	-9.44	-3.25
1973P-1979P	-26.36	1.16	8.86	-9.49	16.87
1979P-1980T	-13.30	1.73	6.61	-6.16	7.15
1980T-1981P	1.54	3.07	1.96	4.95	3.40
1979P-1981P	-11.76	4.80	8.57	-1.21	10.55
1981P-1982T	-15.77	-0.25	6.30	-12.27	3.50
1982T-1989P	38.15	16.07	9.60	27.97	-10.17
1981P-1989P	22.38	15.82	15.90	15.70	-6.68
1948P-1989P	-49.13	39.86	69.27	4.28	53.41

Table 7

Variance-covariance matrix for the rate of profit: not all labour productive
(annual rates of growth)

	r	S/V	W(U)/W(P)	S/V-W(U)/W(P)	VCC Proxy
r	55.9029				
S/V	6.5445	6.4638			
W(U)/W(P)	-14.1616	3.7547	10.6487		
S/V-W(U)/W(P)	34.3531	9.6392	-4.6909	29.7822	
VCC Proxy	-21.7929	3.0563	9.9976	-5.9966	17.3644

Table 8

Correlation matrix for the rate of profit: not all labour productive
(annual rates of growth)

	r	S/V	W(U)/W(P)	S/V-W(U)/W(P)	VCC Proxy
r	1.0000				
S/V	0.3529	1.0000			
W(U)/W(P)	-0.5949	0.4639	1.0000		
S/V-W(U)/W(P)	0.8630	0.7121	-0.2700	1.0000	
VCC Proxy	-0.7170	0.2957	0.7536	-0.2703	1.0000
