Productive and Unproductive Labour and the Profit Share in the U.S. Economy, 1964-2001

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Abstract

How fundamental to macroeconomics is social class? Specifying the labour theory of value in a way that distinguishes productive from unproductive labour, this paper analyses the aggregate profit share in the U.S. economy between 1964 and 2001. Trends in productive and unproductive labour are presented in ftes, hours and money. After 1979, there was a large shift of money value (not matched by a shift in either hours or employment) away from the wages paid to productive labour and to the wages paid to supervisory labour. Since the wage share in money value added of nonsupervisory labour in unproductive sectors was approximately constant, the 1980s and 1990s saw profits squeezed by the labour income of supervisory workers. If supervisory workers are treated as the bearers of the capital relation, and their labour incomes aggregated with profits, then this expanded profit share in money value added was approximately constant from 1964 to 1979, and rising thereafter. Focusing on class shares rather than factor shares renders the time trend of the rate of profit little different, but the proximate accounting for that trend significantly different. This is explored in terms of a macroeconomics of class struggle in the U.S. over the last three decades of the century.

Keywords: productive labour, unproductive labour, profit share, US economy.

JEL classification: C82, E24, O51
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1 Introduction

This paper attempts to show that social class is both qualitatively and quantitatively fundamental to a macroeconomics set within the Marxian-inspired surplus-based tradition. The object of this tradition is the description and explanation of the average rate of profit and its trend over time. The measurement conventions of this paper produce for the U.S. economy a rate of profit whose time trend is very similar to that found by other studies (for example, Duménil and Lévy 1993, 2002, Moseley 1991, 1997, Shaikh and Tonak 1994, Wolff 2001, 2003), and is shown in Figure 1, with the BEA measure of the rate of return to property income of domestic nonfinancial corporations also shown for comparison.\footnote{BEA is the Bureau of Economic Analysis, an agency of the U.S. Department of Commerce. The BEA figures are from Larkins (2002). Note that property income makes no allowance for the wage component of the self-employed.} The rate of profit fell from 1965 to 1982, rose from 1982 to 1997, and has been falling since then. By 1982, compared with 1965, the rate of profit more than halved. There was a sharp bounce back from 1982 to 1984, followed by a broadly constant trend until 1991. The rate of profit then rose through the 1990s, peaking in 1997, but only at around three quarters of its 1965 level, and fell sharply thereafter, so that by 2001 it was just under 57\% of its 1965 level.

These are large changes, occurring over a sufficiently extended period to think of them as secular rather than cyclical. A common approach to explanation begins by decomposing the profit rate. If \( r \) is the average rate of profit, \( \Pi \) is aggregate non-labour income, \( MVA \) is aggregate value added in money terms, and \( K \) is the aggregate of nonresidential fixed capital stock and work in progress, then

\[
 r = \frac{\Pi}{MVA} \frac{MVA}{K} \tag{1}
\]
This separation of the profit rate into the product of the profit share ($\Pi/MVA$) and the productivity of capital ($MVA/K$) separates proximate distributional issues from a proximate focus on the production process. Profit rate, profit share and capital productivity are illustrated in Figure 2, each series indexed to its 1964 level. Variations in both profit share and capital productivity contribute to the variation of the profit rate. In the downswing to 1982, they contribute 52.5% (profit share) and 47.5% (capital productivity) to the profit rate decline. In the upswing to 1997, these proportions are more than reversed to 43% (profit share) and 57% (capital productivity). In both downswing and upswing, capital productivity shows much less variability around trend than does the profit share. Finally, the post-1997 collapse in profitability is almost entirely attributable (89.7%) to a collapse in the profit share (although capital productivity also declined for the first time since 1982).

The modern Marxian-inspired literature analysing these trends is divided as to what parts of the classical surplus-based tradition to embrace and what to discard. In particular, there is no unanimity on how to address the distinction between productive and unproductive labour. The development of such a distinction was important to classical economists, because they were interested in accumulation, hence net investment, and hence the surplus out of which it was found. They were therefore concerned with what determined both the size of the surplus (identifying which labour produced it) and its distribution (so that ‘productive’ and ‘unproductive’ uses could be contrasted). But in the revival of the classical tradition among heterodox economists in the last third of the twentieth century, the

\footnote{Within neoclassical economics, there is almost unanimous agreement that the distinction is not meaningful: any labour is productive if someone derives utility from the consumption of its product, and nothing will be produced if someone does not derive utility from its consumption.}
categories of productive and unproductive labour have been among the most contested.³

In empirical work, Moseley (1991, 1997) uses the categories in a way which is central to his findings, and for Shaikh and Tonak (1994) too the categories are central ones. But comparing these studies is difficult, because the results in each case are sensitive to the assumptions made in the construction of their respective data sets. For example, Moseley (1991) excludes all self-employment, and assumes that half of the nonsupervisory workers in Wholesale and Retail Trade, all of the nonsupervisory workers in Legal Services, and all of the employees in Agriculture, Forestry and Fisheries are productive. These are different assumptions from those made by Shaikh and Tonak (1994), despite a broadly similar methodology of calculation.⁴ On the other hand, for Duménil and Lévy (1993, 2002), the categories are not helpful ones because they have no definite empirical purchase; in particular, they elide what for Duménil and Lévy is the important class differentiation between managerial and clerical personnel, which they see as creating new class contradictions in capitalism. And while earlier work by Wolff (1987) explored the categories empirically (on the basis of still different assumptions in constructing the data), the precise ways in which they impacted on profitability was not explicitly explored, and the distinction between productive and unproductive labour is not used in his later work (Wolff 2001, 2003).

The paper is structured as follows. The next section summarizes the theoretical framework originally specified in English by Foley (1982), and in so doing, distinguishes productive from unproductive labour.⁵ Section 3 considers how this theoretical specification can be operationalised, and proposes a procedure for incorporating general government. The following section combines the theory with the data to explore trends in productive and unproductive labour, first as proportions of total labour (in ftes, hours and money), and second, in wage terms, as proportions of money value added. Some issues with respect to the distinction between productive and unproductive labour on the one hand, and class struggle on the other, are highlighted, and the section also pursues a further concretisation of the analysis by explicitly contrasting pre- and post-direct-tax-and-transfer measures. The main results (which differ from those in the literature cited above) are as follows.

- After 1979, there was a large shift of money value away from the wages paid to productive labour and to the wages paid to supervisory labour.

- From 1964 to 2001, the wage share in aggregate money value added of nonsupervisory labour in

³For an outline and survey of the distinction, see Mohun (2003).
⁴For a detailed exploration of the methodology of calculation employed by Shaikh and Tonak, see Mohun (forthcoming).
unproductive sectors was approximately constant.

- The 1980s and 1990s saw profits squeezed by the labour income of supervisory workers.

- The tax and transfer activities of the state made some significant difference to pre-tax-and-transfer trends in wage shares in the 1970s and in the early 1990s, but otherwise served to work in the same direction as pre-tax-and-transfer trends.

- If supervisory workers are treated as the bearers of the capital relation, and their labour incomes aggregated with profits, so that a factor shares approach is replaced by a class approach, then this expanded profit share in money value added was approximately constant from 1964 to 1979. Hence the decline in the (expanded) rate of profit is entirely accounted for by a decline in capital productivity. In the upswing of the (expanded) rate of profit from 1982 to 1999, more than two thirds of the rise is accounted for by the recovery in capital productivity.

The paper concludes that the distinction between productive and unproductive labour can be operationalised in a way that creates a nondegenerate and significant research agenda for the study of the U.S. economy in the last third of the twentieth century.

2 Theoretical Framework

2.1 Productive and unproductive labour

Productive labour is labour that directly produces surplus value. Workers employed in firms transform non-labour inputs into commodity outputs. As nonlabour inputs are thereby physically consumed, their commodity value is transferred to the outputs; simultaneously, workers create more value than they are paid, and, once the outputs are sold, the value difference between what workers create and what workers cost is appropriated as surplus value by the owners of the firms. In this manner labour is productive if it is wage labour employed in production for the market.

Production here is used in two senses simultaneously. In a narrow sense, it is the transformation of inputs into outputs. It does not matter whether consumption of the output temporally follows its production (as with a physical output) or whether it is contemporaneous with it (as with a service). Either way, it is the creation of new, or the alteration of existing, use-values, in privately owned production processes. However, production also has a wider sense, as an activity that produces surplus value from a social point of view. This social property of value has two consequences.
First, what is marketed has a different significance from what is not marketed: activities that are not marketed create no value and hence no surplus value. This is controversial, because it appears to deny that such non-waged, non-marketed activities as housework contribute to the value of labour power. It is also entangled with the quite separate issue of power in gender relations, so that the apparent denial of social validity to the activities of (mostly) women is provocative. Similar issues arise with such waged but non-marketed activities as general government provision of education, training and health care, both with respect to the value of labour power, and to the apparent denial of social validity to the activities of the social democratic state. For all non-marketed activities, the very terminology (‘unproductive’) does not add clarity because of its suggestion that such activities are not essential but superfluous. This paper adopts the view that social validity with respect to the production of value is a narrow issue that is different from issues of social validity around the production of use values, and that to identify the two is just a category mistake. Non-marketed activities create no value and hence no surplus value.

Second, from a social perspective, not all marketed activities reflect the creation of value. Activities purely involving the sale of the output and the purchase of inputs (commercial activities), or the mobilizing of sums of money and credit to finance production (financial activities) are not part of production. For all that these activities employ large numbers of people in wage labour relationships, they are concerned with alterations of the form in which produced value exists, or with organizing precommitments and claims on future produced value. That is, they circulate value rather than create it, and in this sense are unproductive. This is controversial, because it appears to construct an arbitrary distinction between activities that are in all other respects identical. This paper adopts the macro perspective that the distinction at the aggregate level between the production of value and the circulation of value is a meaningful one. On this basis, at less than the overall macro level, the profits (as the money form of surplus value) that accrue to commercial and financial activities are understood as a redistribution from productive sectors through unequal exchange in the market. In sum, labour is productive if it is wage labour employed in production for the market and producing surplus value from a social point of view. Call the sectors employing such labour ‘productive sectors’, and the commercial and financial sectors ‘unproductive sectors’.

In embedding this framework within a class sociology of workers and capitalists, the treatment of class follows Marx’s remark in his Preface to the First Edition of Volume 1 of Capital,

... individuals are dealt with here only in so far as they are the personifications of economic categories, the bearers [Träger] of particular class-relations and interests. My
standpoint...can less than any other make the individual responsible for relations whose creature he remains, socially speaking, however much he may subjectively raise himself above them. (Marx 1976 [1867], p. 92)

Call those who sell their labour-power for a wage, and work under the supervision and control of others, the ‘working class’, and those who perform functions of supervision and control and thereby act as bearers of the capital relation, the ‘capitalist class’. The working class performs both productive labour (producing surplus value) and unproductive labour (altering the form in which value exists in circulation). The wage relation compels all members of the working class to perform surplus labour, subject to the same pressures from their employers’ pursuit of profitability. But not all of the unpaid labour of the working class is monetised. Only that of productive workers achieves a monetary form, as money surplus value. The wages and profits arising out of circulation activities are a share of this monetised unpaid labour, paid out of the gross revenues of circulation activities which ultimately derive from their relation to productive sectors. As regards the capitalist class, their labour of supervision and control is entirely unproductive, and hence their monetary income derives only from money surplus value.

However, this treatment of the capitalist class is not straightforward. The separation of ownership and control that began towards the end of the nineteenth century made functions of control the prerogative of an increasingly ‘professionalised’ management during the twentieth century. Companies are managed by employees in an hierarchical pyramidal structure, at the apex of which, ‘management’ is supposed to deliver a performance satisfactory to shareholder-owners. This raises complex issues of class structure. For while senior management personify what might be called the ‘collective capitalist’, purely capitalist functions extend a long way down (embracing for example junior accountants or even cash clerks). Functions of control permeate the whole pyramid, and productive functions of coordination of the collective worker, while different from the unproductive functions of control, are also intertwined with them, so that administrative and supervisory hierarchies of the production process cannot be separated from technical hierarchies. For technology is not some neutral specification upon which the capital relation is sociologically imposed. Rather, production of relative surplus value ensures that technological development is always shaped by the imperatives of capital. For this reason, administration, supervision and authority cannot usefully be separated.

These definitions of class are concerned with structure rather than agency, and hence ‘class-in-itself’ rather than ‘class-for-itself’. The great majority of the capitalist class are employees, and the discussion of hierarchy above entails that even quite junior accountants and cash clerks are included
as members of the capitalist class. This only serves to emphasise that the notion of class requires considerable refinement. For agency cannot be ignored, as class location also depends crucially upon issues such as internalised identification, whose stability is historically contingent. Nevertheless, the refinement of the notion of class to embrace issues of class-for-itself is not pursued here. Class in this paper is a matter of structure only, and Table 1 illustrates. Thus unproductive labour is a complex category, comprising both working class and capitalist class components.

### 2.2 Labour values and monetary prices

The way in which production is theorised follows the framework proposed by Foley (1982). The market commensurates different activities by measuring them all in terms of money, and the aggregate of such transactions going to final demand measures in monetary terms how much new value is produced. All such value added is a result of the activities of productive labour, and its location in unproductive sectors is attributed to the market mechanism of unequal exchange. It follows that total value added in money terms and the total hours worked by productive labour are two different expressions of the same activity. Value added in money terms, or ‘money value added’ (MVA) measures in dollars exactly what the total hours of productive labour (H_p) measures in terms of time. They are different ways of representing the same quantity of abstract labour. Because they measure the same thing, they can be equated, but, because they are differently denominated, their equation requires a variable which converts the one unit of measure into the other. Define the value of money (VM) as the hours of productive labour time per dollar (its inverse, the number of dollars represented by one hour of productive labour-time, is sometimes called the monetary equivalent of labour-time). Then

$$MVA = \frac{H_p}{VM} \quad (2)$$

The aggregate relationship of equivalence between a value and a price category expressed by equation (2) does not in general apply to individual commodity outputs, for the (tendential) equalization of the rate of profit enforced by competition entails that commodities produced with different compositions of capital cannot in general sell at prices proportional to their labour values. This does not however apply to the capacity to work, or labour power. Labour power is an attribute of people that

<table>
<thead>
<tr>
<th>Table 1: Location, Function and Description of Labour</th>
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<tbody>
<tr>
<td><strong>Working class</strong></td>
</tr>
<tr>
<td><strong>Productive sectors</strong></td>
</tr>
<tr>
<td><strong>Unproductive sectors</strong></td>
</tr>
</tbody>
</table>
is sold for defined periods of time. It is not produced in a capitalist production process, and neither are the people of whom it is an attribute. No composition of capital, no prices and no equalization of the rate of profit are involved in the (re)production of people. Hence there is no reason to think that labour power is not on average sold at its value. Let the value of labour power per hour of labour hired be denoted by $VLP$, and the hourly wage rate of productive labour by $w_p$. Then

$$w_p = \frac{VLP}{VM} \quad (3)$$

Assuming that the hours of labour hired are the hours of labour worked, combining equations (2) and (3) immediately determines the value of labour power as the share of productive wages in money value added:

$$VLP = \frac{w_p H_p}{MVA} = \frac{W_p}{MVA} \quad (4)$$

Multiplying the value of labour power per hour of labour hired by the number of hours hired defines aggregate variable capital, and hence immediately from equation (3) aggregate wages of productive labour are equal to their labour time equivalent (aggregate variable capital) divided by $VM$. Since the capitalist class appropriates as surplus all value that is not paid to productive labour, it follows that surplus value in money terms ($MSV$) is

$$MSV = (1 - VLP)MVA = MVA - W_p \quad (5)$$

which is equal to surplus value measured in hours divided by $VM$. In sum, the value of money equates first, $MVA$ and total hours worked by productive labour, second, $W_p$ and aggregate variable capital measured in hours, and third, $MSV$ and aggregate surplus value measured in hours. This motivates the approach taken here to use monetary aggregates to measure their corresponding labour value aggregates. Finally, while total money surplus value is produced by productive labour, it is redistributed through the market, and some of it appears as the revenue accruing to commercial and financial activities out of which the labour employed in such activities is paid. For total wages ($W$) are the sum of wages paid to productive labour ($W_p$) and to unproductive labour ($W_u$), and since $MVA$ is the sum of total wages and profits ($\Pi$), equation (5) implies

$$MSV = \Pi + W_u \quad (6)$$

Thus total wages paid to unproductive labour are a deduction from total money surplus value.

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Which is to gloss over an important site of daily class struggle.
2.3 Class struggle

Within this framework, describing class struggle analytically is not simple. First, there is conflict at the point of production, between capital and productive labour over the extraction of surplus value. Second, there is struggle over the distribution of surplus value. While these notions of struggle are conceptually distinct, in practice they are not so and inter-class and intra-class struggles are intertwined. The struggle between the working class in unproductive sectors and their employers is an inter-class conflict, for all that its outcome must ultimately be financed by the surplus value produced by productive labour. There is no difference between the class experience of one worker in a productive sector and another in an unproductive sector. Both are compelled to work in excess of the time required to reproduce a money value equivalent of their wages. The fact that the monetisation of that time is for one the production of value and for the other an appropriation of a portion of that value in struggle with their employers is just a peculiarity of how capitalism works.

Also complicated is the intra-class struggle over the distribution of the remainder of surplus value between the various fractions of capital (landed, commercial, financial and industrial). As part of this, there is a distribution to supervisory labour in both productive and unproductive sectors. The activities of supervisory labour constitute the way in which the coercive functions of capital as a social relation are maintained. Supervisory labour is the ‘bearer’ of capitalist relations (in however an unstable a way), the agency whereby the structural relationship of capital and wage-labour is maintained. Hence there is always some tension between structural and agency aspects of capital over what is profit and what is the labour income of supervisory workers.

A final complication is the struggle in the democratic arena over the tax and benefit policies of the state. These latter impinge directly on the value of labour power, the monetisation of surplus labour time and its distribution. Moreover, while the state is a capitalist state, the political arena generally retains some autonomy, such that different class interests over tax and benefit incidence can be represented in the political arena as subordinate to a ‘national interest’ captured by a transient hegemony of some particular class interest (or indeed fractional class interest). Hence post-direct-tax-and-benefit measures are the outcome of two quite distinct types of struggle that one often wants to distinguish: that between individual capitals and the labour they employ, over the wage and immediate conditions of employment, and that between sections of the population (operating through political parties and pressure groups), over the tax and benefit system. Labour market outcomes and direct tax and benefit outcomes are inter-related, but the types of struggle involved in each outcome and the forces that can be deployed in pursuit of those outcomes are rather different. This is obscured in
looking at post-direct-tax-and-benefit outcomes. Struggles between labour and particular capitals are direct and immediate. Struggles within and against the state as embodiment of ‘capital in general’ are highly mediated. Further, labour market outcomes and direct tax and benefit outcomes are strongly inter-related, in sometimes unpredictable ways. Hence any functional specification of overall outcomes in terms of the ‘needs’ of capital requires considerable care.

3 Empirical Data Issues

3.1 Accounting for productive labour

The basic data used are the National Income and Product Accounts (NIPA) data produced by the BEA, broken down by industrial division according to the 1972 SIC (1964-87) and 1987 SIC (1987-2001), and labour statistics data produced by the Department of Labor’s Bureau of Labor Statistics (BLS). In general, the procedure is first to calculate the number of productive workers by major SIC division, and then to calculate a relevant wage so that multiplying the two together gives variable capital in money terms.

First, each major SIC category is allocated to a position in the circuit of capital according to whether it involves the production of new value or whether it is located entirely in the circulation part of the circuit, embracing exclusively commercial and financial functions. This allocation is listed in Tables 2 and 3.

Second, within each SIC division or subdivision, BLS data are used to identify all nonsupervisory labour together with working supervisors. The data exclude proprietors, the self-employed, unpaid volunteer or family workers, farm workers, domestic workers and non-civilian government employees; they also exclude all those on lay-off, on unpaid leave, on strike, and newly hired but not yet reported. BLS identify working supervisors and all nonsupervisory labour as “production and related workers” in mining and manufacturing, “construction workers” in construction, and “nonsupervisory employees” in private service-producing industries (U.S. Department of Labour, Bureau of Labour Statistics 1994, p. 1221). In this paper all three categories together are called ‘production workers’. For each SIC division and subdivision, the ratio of BLS production workers to all BLS employees is calculated. Applying this ratio to the NIPA employment data (‘persons engaged in production by industry’, comprising full-time employees, part-time employees converted to a full-time basis, and the self-employed and small proprietors) gives the number of production workers in each SIC division. Productive labour is then the total of production workers in productive sectors.
Table 2: Productive and Unproductive Divisions (by SIC)

<table>
<thead>
<tr>
<th>Divisions with some productive labour</th>
<th>Divisions with no productive labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing</td>
<td></td>
</tr>
<tr>
<td>Mining</td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
</tr>
<tr>
<td>Transportation and public utilities</td>
<td>Wholesale trade</td>
</tr>
<tr>
<td>Retail trade: Eating and drinking places (58)</td>
<td>Remainder of Retail trade (5 less 58)</td>
</tr>
<tr>
<td>Remaining of Retail trade (5 less 58)</td>
<td>Finance, insurance and real estate</td>
</tr>
<tr>
<td>Productive services</td>
<td>Unproductive services</td>
</tr>
<tr>
<td>Government enterprises</td>
<td>General government</td>
</tr>
</tbody>
</table>

This procedure applies the BLS ratio for employees to the self-employed in each division. It also entails that in a particular productive SIC division, unproductive workers will be those above working supervisor level engaged in the process of managing the activities of productive workers. This will not only involve direct management functions, but also all of those activities which are essentially commercial (all activities concerned with transforming commodity capital into money capital), or financial (all activities concerned with organizing the financial structure of the activities of the company), or legal (all activities surrounding the definition and enforcement of property rights). But a consequence of the intertwining of the technical, administrative and supervisory hierarchies of the production process mentioned earlier is that for the category ‘supervisory worker’ it is impossible to disentangle direct management from commercial, financial and legal functions. However, the advantages of specialisation mean that there will be some tendency over time for commercial, financial and legal functions to be contracted out to specialist companies in those areas, and to that extent, the category of supervisory worker will tend more precisely over time to express the authoritarian structure of the capitalist management pyramid.

The third step then applies annualised BLS production worker weekly wages to the numbers of production workers determined to be productive, adjusting so as to include employee and employer superannuation payments and the like. And the final step applies annualised BLS production worker weekly hours worked to the numbers of production workers to determine the hours figures. Further
### Table 3: Productive and Unproductive Services (by SIC)

<table>
<thead>
<tr>
<th>Service with some productive labour</th>
<th>Services with no productive labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotels and other lodging places (70)</td>
<td>Unproductive business services:</td>
</tr>
<tr>
<td>Personal services (72)</td>
<td>Advertising (731)</td>
</tr>
<tr>
<td>Productive business services:</td>
<td>Credit reporting and collection (732)</td>
</tr>
<tr>
<td></td>
<td>Mailing, reproduction, stenographic (733)</td>
</tr>
<tr>
<td>Services to buildings (734)</td>
<td>Misc. equipment rental and leasing (735)</td>
</tr>
<tr>
<td>Computer and data processing (737)</td>
<td>Personnel supply services (736)</td>
</tr>
<tr>
<td>Photofinishing laboratories (7384)</td>
<td>Other Misc. business services (738 less 7384)</td>
</tr>
<tr>
<td>Auto repair, services, and parking (75)</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous repair services (76)</td>
<td></td>
</tr>
<tr>
<td>Motion pictures (78)</td>
<td>Legal services (81)</td>
</tr>
<tr>
<td>Amusement and recreation services (79)</td>
<td></td>
</tr>
<tr>
<td>Health services (80)</td>
<td></td>
</tr>
<tr>
<td>Educational services (82)</td>
<td></td>
</tr>
<tr>
<td>Social services; membership organizations (83, 86)</td>
<td></td>
</tr>
<tr>
<td>Productive Misc. professional/Other services:</td>
<td>Unproductive Misc.professional/Other services:</td>
</tr>
<tr>
<td>Engineering, architectural and surveying (871)</td>
<td>Museums, botanical and zoological gardens (84)</td>
</tr>
<tr>
<td>Other Research and testing services (873 less 8733)</td>
<td>Accounting, auditing, bookkeeping (872)</td>
</tr>
<tr>
<td></td>
<td>Non-commercial research organisations. (8733)</td>
</tr>
<tr>
<td></td>
<td>Management and public relations (874)</td>
</tr>
<tr>
<td></td>
<td>Services n.e.s. (89)</td>
</tr>
<tr>
<td></td>
<td>Private households (88)</td>
</tr>
</tbody>
</table>
Applying these empirical measures to Table 1, the working class is comprised of production workers, and the capitalist class of supervisory workers. Production workers are divided between productive sectors (productive labour) and unproductive sectors (unproductive labour), and supervisory workers are similarly divided between productive and unproductive sectors (but all supervisory workers are unproductive).

### 3.2 Accounting for general government

There is however a serious difficulty in identifying the location of people with the location of flows of value. That is, while Tables 2 and 3 identify the location of productive and unproductive workers, further adjustment is necessary to calculate the wages they are paid. This adjustment concerns the treatment of general government, whose activities are not (on the whole) marketed, and whose employment producing those activities is financed out of taxation and government debt.

Consider again the difference between productive and unproductive workers in terms of the wages they are paid. Productive workers produce a value equivalent of their labour power plus a surplus value; hence they produce (at least) their own wages. Since unproductive workers produce no value, they are paid out of the gross revenues accruing to the firms in which they are employed, and these gross revenues, in the aggregate, wholly derive from the labour of productive workers through processes of unequal exchange between individual firms in the market. But general government is different. Not only do general government workers produce no value, they also do not produce anything that commands a price in the market, so that unequal exchange considerations do not apply. Unlike any other workers, general government workers are paid out of taxation revenues. To see how this causes problems, consider further equations (5) and (6). From the value added side

\[ MVA = W_p + MSV \]  

(7)

and from the income side

\[ MVA = W_p + W_u + \Pi \]  

(8)

If general government workers are paid out of taxation revenues, then their wages are already implicitly included on the right hand side of equation (8) because the variables there are expressed gross of tax.

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7Henceforth the adjective ‘nonproduction’ will simply be denoted by ‘supervisory’, with the qualification ‘above working supervisor level’ understood.

8The intertemporal complication of government debt and its financing is ignored in this paper.
For example, $W_p$ denotes the gross wages paid to productive workers, which are their net wages plus (via taxes) a portion of general government wages. What private capital pays to productive labour is different from what productive labour receives. Only an after-direct-tax-and-transfer perspective creates room in equation (7) for general government wages as a component of $MSV$ (with the further implication that all direct taxes are ultimately paid by capital). Only an after-direct-tax-and-transfer treatment of incomes creates the space in equation (8) for the inclusion of general government wages as a component of $W_u$. Explicitly including $W_g$ in a pre-tax analysis counts their wages twice. Since between 1964 and 2001 general government employee compensation fluctuated between a low of 15.8% (in 2000) and a high of 20% (in 1975) of total employee compensation in domestic industries, potential double-counting in value terms is significant.

This is dealt with in the following way. Suppose there are $n$ categories of employed labour (excluding general government), subscripted by $i$, who pay direct taxes (including employer and employee contributions to superannuation) less transfers $T_i$ out of their gross wages $W_i$ leaving them with a post-direct-tax-and-benefit wage $W_i^*$. That is, for each such category of worker,

$$W_i = W_i^* + T_i$$  \hspace{1cm} (9)

Summing over $i$, equation (9) can be written as

$$\sum_i W_i = \sum_i W_i^* + W_g^* + \left( \sum_i T_i - W_g^* \right)$$ \hspace{1cm} (10)

and using equation (8) and rearranging,

$$MVA = \sum_i W_i^* + W_g^* + \Pi + \left( \sum_i T_i - W_g^* \right)$$ \hspace{1cm} (11)

Each $T_i$ defines a tax-less-benefit rate $t_i$ for each category of labour according to

$$t_i = \frac{T_i}{W_i} = \frac{W_i - W_i^*}{W_i}$$ \hspace{1cm} (12)

Because of the redistributive nature of the direct tax and benefit system, these tax rates will be different according to how each category of labour is situated with respect to overall income distribution. Provided such tax rates can be measured, post-direct-tax-and-benefit wages can be measured for each category of worker, and then post-direct-tax-and-benefit wages for productive and unproductive labour calculated.

However, a major conceptual difficulty is that wages are paid to individuals, whereas benefits accrue to households. This is resolved by a fairly drastic set of assumptions. Census Bureau data

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9This is only a problem for the accounting of flows of money value. The situation is quite different (and more conventional) if the purpose is to represent use-values in money terms.
divide households by mean income into quintiles and give tax and benefit information for each quintile. Assume that the bottom quintile contains no household members in employment, the middle three quintiles embrace the employed working class, and the top quintile comprises the capitalist class in the sense of this paper. On the basis of these (heroic) assumptions, tax-and-benefit-rates can be calculated for the middle three quintiles taken together, and are used to determine the post-tax-and-benefit wages of production workers. Similarly, those of the top quintile are used to determine the post-tax-and-benefit wages of supervisory workers.\footnote{See the Appendix for further details.}

Finally, pre-tax profits $\Pi$ can be split into the sum of post-tax profits $\Pi^*$ and taxes on profits (net of monetary transfers from state to industry) $T\Pi$. Then equation (11) becomes

$$MVA = W_p^* + W_a^* + W_g^* + \Pi^* + (T - W_g)$$

(13)
since $W_g^* = W_g - T_g$, $\Pi = \Pi^* + T\Pi$ and $T = \sum_i T_i + T_g + T\Pi$.

This provides a consistent accounting on the income side. Notice that if direct taxes less benefits on labour income, plus direct taxes less subsidies on profits, is greater than gross general government wages, then general government is an income recipient alongside wage earners and profit earners, and financed out of money surplus value. Conversely, if the inequality goes the other way, net profits (being the residual) are reduced.

From the output side accounting is simpler: surplus value in money terms is a residual, being everything that productive workers do not receive. They do not receive the direct taxes they pay; they do not receive their superannuation payments (while in the labour force); but they do receive monetary transfers from the state. Thus productive workers produce a value equivalent of their own post-tax-and-benefit wages, and a value in excess of this, so that, if this surplus value in money terms is denoted by $MSV^*$,

$$MVA = W_p^* + MSV^*$$

(14)

and money surplus value has to ‘finance’ net private sector unproductive wages, and net general government wages, leaving net profits as a residual.

In conventional macroeconomic terms, this is only a partial conversion to a post-tax environment. It does not account for indirect taxes, the financing of government debt, government nonwage consumption expenditures, and most transfer payments (which go to the non-employed). So it is far from accounting for general government as a whole, and a long way from estimating whether the working class as a whole receives net benefits from the state. But it does create an accounting space
in which double-counting is eliminated and post-direct-tax-and-benefit general government wages can be explicitly counted as unproductive. In sum, the existence of the state drives a wedge between the pre-tax wage payments (inclusive of all superannuation payments) that capital pays, and the post-direct-tax-and-benefit payments (net of all superannuation payments) that productive labour receives, and accounting explicitly for general government wages requires focusing on the latter, not the former.

4 Productive and Unproductive Labour 1964-2001

4.1 Productive labour to total labour

Figure 3 describes the time trends of the ratio of productive labour to total labour, expressed in terms of employment, hours and ATB wages. In 1964, 48.6% of employment was productive, working 49.2% of total hours, and received 44.3% of total wages. These ratios all fell through the second half of the 1960s and then behaved cyclically through the 1970s (rising in the early 1970s boom, then falling to 1975 and rising to the late 1970s). In the business cycle peak year of 1979, 47.4% of employment was productive, working 46.7% of total hours, and receiving 42.4% of total wages. Relative to 1964, by 1979 all three series had fallen, but hardly dramatically. Matters were very different after 1979. While the productive employment and hours ratios fell gently through the 1980s and then rose to 1997, so that in the peak year of 2000, 46.1% of total employment remained productive, and worked 44.8% of total hours, the productive wages ratio collapsed, falling to 34.2% by 2000.

11Henceforth, wage figures will always be qualified by BTB (before direct tax and benefits) or ATB (after direct tax and benefits).
This history can be broken down into the four categories of Table 1: production workers in productive sectors (productive labour), production workers in unproductive sectors, supervisory workers in productive sectors, and supervisory workers in unproductive sectors. This is illustrated in Table 4, where each cell is expressed as a proportion of the total of each measure (and wages are ATB). Several features are noteworthy.

1. In terms of both ftes and hours, there was a small shift from production workers to supervisory workers, most of the change occurring in the earlier part of the period. In terms of wages, the shift was very much larger, with most of the change occurring after 1979.

2. Within the production worker category, those working in unproductive sectors (just over a third of all employment) saw very little change in their relative position, whether in numbers, hours or wages.

3. Supervisory workers in productive sectors (a stable proportion of 11-12% of total employment) saw their share of total wages rise by nearly a quarter, to just over a fifth of all wages.

4. Supervisory workers in unproductive sectors, less than 7% of total employment by 2000, almost doubled their wage share to more than 18% of all wages.

5. The wage shift from production workers to supervisory workers has been primarily at the expense of the wage share of productive labour. First, there has been a direct shift within productive sectors from production labour to supervisory labour. Second, there has been a major market-based shift towards supervisory labour in unproductive sectors, and this too has been ‘financed’ by the deterioration in the relative position of productive labour, (and not particularly by any large change in the relative position of production labour in unproductive sectors).

The change in wages can be decomposed in a different way, by considering total real wages (ATB product wages at 1996 prices) as the product of the number of ftes employed, the hours each fte on average works, and the real wage per hour each fte is paid. This is shown in Table 5. In the later period compared with the earlier, and across all categories of labour, employment growth is slower, and the decline in hours worked is slower. But for production workers in unproductive sectors, hourly real wage growth halves; and for productive workers it is tiny (and what little growth there is, is entirely due to the redistributive effects of the tax and benefit system). By contrast, for supervisory

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12Because of data difficulties, the deflator used is the implicit NDP deflator from the NIPA. While this is not quite the desired MVA deflator, the effect of any difference is unlikely to be large.
Table 4: Productive and Unproductive Labour to Total Labour, ftes, hours and $, selected years, U.S.A.

<table>
<thead>
<tr>
<th></th>
<th>Production workers</th>
<th>Supervisory workers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Productive sectors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ftes</td>
<td>48.6</td>
<td>47.4</td>
</tr>
<tr>
<td>hours</td>
<td>49.2</td>
<td>46.7</td>
</tr>
<tr>
<td>wages</td>
<td>44.3</td>
<td>42.4</td>
</tr>
<tr>
<td><strong>Unproductive sectors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ftes</td>
<td>36.0</td>
<td>35.0</td>
</tr>
<tr>
<td>hours</td>
<td>32.1</td>
<td>31.7</td>
</tr>
<tr>
<td>wages</td>
<td>29.2</td>
<td>28.3</td>
</tr>
<tr>
<td><strong>All sectors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ftes</td>
<td>84.6</td>
<td>82.4</td>
</tr>
<tr>
<td>hours</td>
<td>81.3</td>
<td>78.4</td>
</tr>
<tr>
<td>wages</td>
<td>73.5</td>
<td>70.6</td>
</tr>
</tbody>
</table>

Table 5: Decomposition of Total ATB Wage Growth, U.S.A., Selected Periods

<table>
<thead>
<tr>
<th>Average annual rates of growth (%)</th>
<th>Total wages ($1996)</th>
<th>Total ftes</th>
<th>Hours per fte</th>
<th>Hourly wage rate ($1996)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1964-1979</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Productive production workers</td>
<td>3.5</td>
<td>2.2</td>
<td>-0.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Unproductive production workers</td>
<td>3.6</td>
<td>2.1</td>
<td>-0.3</td>
<td>1.7</td>
</tr>
<tr>
<td>Unproductive supervisory workers</td>
<td>4.5</td>
<td>3.2</td>
<td>-0.3</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>1979-2000</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Productive production workers</td>
<td>1.7</td>
<td>1.5</td>
<td>-0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Unproductive production workers</td>
<td>2.5</td>
<td>1.8</td>
<td>-0.1</td>
<td>0.8</td>
</tr>
<tr>
<td>Unproductive supervisory workers</td>
<td>4.0</td>
<td>1.7</td>
<td>-0.1</td>
<td>2.3</td>
</tr>
</tbody>
</table>
workers, annual hourly real wage growth is almost half as much again as in the earlier period, and more than seven times higher than the concurrent annual hourly real wage growth of productive workers.

4.2 Proportions of Money Value Added

Divide equation (8) through by $MVA$ and consider the resulting proportions $W_p/MVA$, $W_u/MVA$, and $\Pi/MVA$. The wage numerators are both BTB in order to focus on what capital pays out, residual profits are also BTB, and the time trends of the three ratios are shown in Figure 4. The wage share of productive labour in $MVA$ was broadly constant until 1979 (with a mean of 35.8% and a coefficient of variation of 1.47%) and then fell by about a fifth by the end of the century. The wage share of unproductive labour in $MVA$ was around a tenth higher in the late 1970s compared with 1964, but after 1979 increased sharply, reaching 51.2% of $MVA$ by 2000. The share of profits in $MVA$ fell by around a third from 1964 to 1982, recovered about half of this fall by 1997, before falling so steeply that by 2001 at 19.8% it was below its previous 1982 trough. The shift in share from productive wages to money surplus value has not thereby accrued to profits, but rather to unproductive wages. However, matters are not quite so straightforward, and each of the three series merits further examination.

4.2.1 The wage share of productive labour in $MVA$

By equation (4), the wage share of productive labour in $MVA$ measures the value of labour power. This can be considered in BTB terms, when it measures the share of $MVA$ that capital has to pay, or it can be considered in ATB terms, when it measures the share of $MVA$ that productive labour receives. The two series are shown in Figure 5.
Considering the value of labour power is equivalent to considering the rate of surplus value, since by dividing equation (5) through by productive wages and using equation (4),

\[
\frac{MSV}{W_p} = e = \frac{1 - VLP}{VLP}
\]

so that

\[
VLP = \frac{1}{1+e}
\]

From the perspective of capital, from 1964 to 1979 the value of labour power was fluctuating with increasing amplitude around a flat trend. This suggests a stalemate in class struggle, with increasing attempts by capital to wrest an advantage which it was not powerful enough to make permanent. After 1979, there is a major change, and the value of labour power fell every year thereafter (apart from a small rise in the first half of the 1990s and again in 2000-01). From the perspective of labour, the effects of the tax and benefit system made little difference to the general trend, except for two periods. First, the value of labour power rose continuously (by some 2 percentage points of MVA) from 1968 to 1974 and then fell (rather than rose) through the second half of the 1970s. Overlaying the stalemate in class struggle at the point of production was a tilting of state activity towards labour in the late ‘60s and early ‘70s during the Nixon presidency, which was then sharply reversed during the Carter presidency in the second half of the ‘70s. In this manner, state activity laid the groundwork for a sharp assault by capital on labour in the Reagan years of the 1980s. And second, there was a rise the value of labour power (by 1 percentage point of MVA) from 1989 to 1994. Clinton’s aphorism in the twilight of the Bush presidency (‘It’s the economy, stupid’) was true, but not quite in the way it was generally perceived. These two periods, 1968-74 and 1989-94, demonstrate that the state is not a
simple representation of capital in general.

Consider further the value of labour power from the perspective of capital. Since $MVA$ is the product of a price variable ($p_{mva}$) and money value added in real terms ($RMVA$), and total wages paid to productive workers are the product of the hourly BTB wage rate they are paid ($w_p$) and the number of hours they work ($H_p$), then

$$VLP = \frac{w_p H_p}{p_{mva} RMVA}$$

which can be rewritten as

$$VLP = \frac{w_p}{p_{mva} RMVA} \frac{H_p}{H_p}$$

Hence the value of labour power is the ratio of the real (product) wage to labour productivity, so that the value of labour power rises if real wage growth exceeds productivity growth, and falls if productivity growth exceeds real wage growth. Figure 6 shows the two series in equation (17), indexed to 1964 and expressed in natural logs. This makes explicit the nature of the turning point at the end of the 1970s.

Figure 6: Labour Productivity and the Real (Product) Wage (Indexed to 1964, in Logs), U.S.A., 1964-2001

For productivity growth was virtually zero from 1978 to 1980 and the level of the real wage peaked in 1979; while the two series moved together before 1979 (apart from a brief period in the mid-1970s, soon corrected), after 1979 they behaved completely differently. Productivity growth resumed after 1980, but the real hourly wage rate showed no growth at all for two decades (a mean of $14.60 per hour at 1996 prices, and a coefficient of variation of 0.85%).
4.2.2 The wage share of unproductive labour in MVA

Turning to the wage share of unproductive labour in MVA, Tables 4 and 5 have shown the necessity of distinguishing production workers in unproductive sectors from supervisory workers.

Productive workers in unproductive sectors The BTB wage share of production workers in unproductive sectors in MVA shows little variation. Over the whole period, it averaged 13.2%, with a coefficient of variation of 3.1%. The ATB measure shows similar rises to the wage share of productive labour in the early ‘70s and early ‘90s, but overall shows a similar flat trend as the BTB measure, with a mean of 22.8% and a coefficient of variation of 3.5%.¹³ This constancy of share is striking, and is completely different from the behaviour of the wage share of supervisory workers.

Supervisory workers The BTB wage share of supervisory workers in MVA was 22.2% in 1964 rising to 26.3% in 1979, some 4 percentage points in 15 years. Thereafter the rise accelerated, reaching 35.6% in 1992, and, after a mid-1990s fall, 37.2% by the end of the century, a rise of some 11 percentage points over the 21 years since 1979. The ATB pattern is similar until 1992 (although between 2.5 and 3.5 percentage points lower); it peaked at 33% in 1992, and this was followed by a steeper fall and less pronounced rise than the BTB measure. Hence the rising wage share of unproductive labour in MVA shown in Figure 4 is almost entirely attributable to the rising wage share of supervisory workers.

4.2.3 The share of profits in MVA

The share of profits (both BTB and ATB) in MVA is shown in Figure 7. The share of BTB profits in MVA fell from 30.6% in 1965 to 20.2% in 1982. This loss of a third of its total share occurred in two roughly equal phases, 1966-70 and 1978-82. After a sharp rebound from 1982-84, the downward trend resumed to 1991. The share then rose from 21.1% to 24.7% in 1997, followed by a collapse to 19.8% in just four years. The share of ATB profits followed a similar path. On either measure, despite the pressure on the wages of production workers (whether productive or unproductive), there has been no sustained recovery of the profit share since its 1982 trough, and indeed by the end of the century (2001 for the BTB measure, 2000 for the ATB measure) the profit share was lower than its 1982 nadir.

¹³The large difference in means is due to the explicit inclusion of ATB general government production worker wages in the ATB measure, rather than them being spread across all BTB wages.
By rearranging equation (8), the profit share can be written as

\[
\frac{\Pi}{MVA} = \frac{RMVA}{H_p} - \frac{w_p}{p_mva} - \frac{W_u(pn)}{MV_A} - \frac{W_u(s)}{MV_A}
\]  

(18)

where \((pn)\) denotes production workers and \((s)\) supervisory workers. Because profits are a residual, the profit share is determined by the difference between \(MVA\) and wages, and more specifically by the difference between labour productivity and the real wage (of productive workers), less what is absorbed by the wages of unproductive labour. This latter has been the focus of some discussion in the surplus-based literature. The basic idea is that because the wages paid to unproductive labour reduce the funds available for investment, this must constrain accumulation possibilities.

For example, Moseley’s explanation (Moseley 1991, 1997) for the decline in average profitability in the U.S. runs in terms of the relative growth of unproductive labour, most of which he identifies as the relative growth of the commercial sector. But the evidence in Table 4 does not support this. Indeed, over the whole period, employment of production workers in unproductive sectors averaged 36% of total employment, with a coefficient of variation of only 1.1%. Their share of \(MVA\) (mentioned above) displays a similarly flat trend. Thus there was no significant increase in the absorption of money value by production workers in unproductive sectors. Indeed, the rising financial ‘burden’ of unproductive labour in the last third of the twentieth century was almost entirely due to the rise in the proportion of total wages paid to supervisory workers. Moreover, much the greater part of this shift occurred over the period after 1982 when supervisory employment was a constant share of total employment and the rate of profit was broadly rising. Thus the argument that trends in profitability are explicable in terms of trends in the wages paid to unproductive workers is not convincing.
What is striking about the trends outlined is how little of the excess of hourly productivity over the hourly wage rate of productive labour accrued to profits. Neither was this excess absorbed by the wages of production workers in unproductive sectors. Instead it was largely absorbed by the wages of supervisory workers. The growing extraction of surplus value out of productive labour, that is so marked a feature of the U.S. economy after 1979, was appropriated not in corporate profits, but primarily in the labour incomes of supervisory workers. In this sense, the relatively feeble recovery of the profit share from its 1982 trough is testament to a profits squeeze, but by the wages of the 18% of the employed labour force who were supervisory workers, not by the 82% who were production workers, whether in productive or in unproductive sectors. That is, the bearers of U.S. capital took the surplus value extracted from productive labour as increases in their personal labour incomes rather than as increases in corporate profitability.

4.3 A redefinition of the profit share

The previous section has suggested that it is not helpful to aggregate the wages of supervisory workers with those of production workers in unproductive sectors, for all that they are both financed out of the surplus labour time of productive workers. The common nomenclature of ‘wages’ to describe both the labour income of production workers and that of supervisory workers is misleading. If supervisory workers are the bearers of the capital relation, then their labour earnings are a part of what accrues to capital, just as profits are. The effect of aggregating supervisory wages with profits into one sum accruing to capital as a class is an expanded profits share, and is illustrated in Figure 8. Since

\[ MVA = W_p + W_u(pn) + W_u(s) + \Pi \]  

(19)
then

\[ 1 = \frac{W_p}{MVA} + \frac{W_u(pn)}{MVA} + \frac{W_u(s) + \Pi}{MVA} \]  

(20)

Consider the terms on the right hand side. The first term is the \( VLP \), from equation (4). The second term, the share of wages of production workers in unproductive sectors, was shown above to be approximately constant throughout the period. The third term is the expanded, or class, profit share. Accordingly, this latter share and the \( VLP \) are almost exactly inversely related, so that, by equation (16) the expanded profit share reflects the rate of surplus value. Hence changes in the expanded profit share provide one indication of the changing balance of class forces. Class struggle here is waged at two different levels, first, at the level of employment, between capital acting through supervisory labour on the one hand, and production workers on the other, and, second, at the level of society, over the tax and benefit policies of the state. The BTB share captures the former, while the ATB share combines the effects of struggle at both levels.

There was little change in trend in the BTB expanded profit share for the fifteen years after 1964; while there were fluctuations, the share was broadly constant until 1979 at around 51.3\% (with a coefficient of variation of 1.25\%). Despite significant ebbs and flows in the balance of class forces, there was no clear winner. After taxes and benefits are taken into account, this constancy of share remained the case, but with greater volatility. The fifteen years after 1964 saw increasingly aggressive attempts by capital, both at the point of production, and through tax and transfer effects on the take-home wage, to alter the balance of power, but these were broadly successfully resisted. But in a war of attrition, the odds in the long run favoured capital. For labour relations in the U.S. had long been characterized by decentralized wage bargaining, little employment security, limited statutory provision of labour benefits, a highly supervised work environment and obstacles to union organizing. The mid- to late 1970s saw increasingly effective anti-working class lobbying (by, for example, the Business Roundtable) in the political arena, a major victory being the decisive defeat of the Labor Law Reform Act of 1978. By the end of the 1970s, there was a much more favourable political climate for capital, which helped produce the Reagan presidential victory in November 1980. An aggressive approach by capital at the level of production, joined to the state-sponsored weakening of the working class position, then produced a decisive shift in the balance of power towards capital.

An important marker of this shift was the union breaking stance towards the air traffic controllers’ union, early in the Reagan presidency. Equally significant were the more conservative appointees to the National Labor Relations Board. The decisions of the latter provide another index of the change in climate. As regards the adjudication of complaints against corporations of unfair labour practices, an
average of 52% were upheld in 1984-85, compared with an average of 84% nine years earlier. Similarly, as regards complaints about corporate actions in union organizing and elections, 35% were upheld in 1984-85, compared with 65% nine years earlier. The success of this two-pronged attack on the organized working class, by state and by private capital, can be measured in terms of the proportion of wage and salaried workers covered by unions, which fell from 23.3% in 1983 to 18.3% in 1990, or, for the private sector alone, from 18.5% to 13.2% over the same period. The statistics for work stoppages and the percentage of estimated working time lost tell a similar story. As regards the unorganized working class, the collapse of the minimum wage in real terms from the late 1970s lowered the floor to wages, and the growth in ‘contingent’ (involuntary part-time, and temporary) employment pushed significantly larger numbers of workers towards this falling floor (Gordon 1996, pp. 211-19, 223-34). The 1980s were thus a triumph for capital at all levels.

At the end of the 1980s there were some significant changes. The BTB share continued to rise until 1992, fell back by less than 0.5% of MVA to 1994, and then resumed its upward path to a peak of 58.2% in 1999 (before falling away by a percentage point by 2001). As in the 1980s, the continued trend towards the dominance of capital in the production process itself was reflected in a further fall of the proportion of wage and salaried workers covered by unions, from 18.3% in 1990 to 14.9% in 2000, or, for the private sector alone, from 13.2% to 9.8% over the same period. But accounting for direct taxes and benefits shows some differences, illustrated in Figure 9. The ATB share reached a peak of 51.5% in 1992, and then fell by some 3.75 percentage points by 2000. But this fall was not attributable to any success by labour at the expense of capital. For the working class wage share (that

Figure 9: ATB Class Shares in MVA, U.S.A., 1964-2001

peak of 51.5% in 1992, and then fell by some 3.75 percentage points by 2000. But this fall was not attributable to any success by labour at the expense of capital. For the working class wage share (that

15 The data are from U.S. Census Bureau 2002, Tables 627 and 628.
of all production workers) reached a peak in 1994 and then fell by 4.75 percentage points by 2000. The achievement of ‘fiscal responsibility’ by the state in the years after 1992 had a negative impact on the shares of both capital and labour, albeit somewhat greater on the latter than the former. Much of the political rhetoric of the last two decades of the twentieth century has centred on the ‘necessity’ of tax reductions (for the rich) and welfare reductions (for the poor). The implementation of these in the ‘balanced budget’ regime of the Clinton years appears to have had perverse effects on capital’s share, but assessing the overall effects on state finances require consideration of indirect taxes and non-employment related expenditures that are beyond the scope of this paper.

One consequence of considering profits plus supervisory wages as the class income of capital is a redefinition of the rate of profit, as the ratio of the class income of capital to the capital stock. This pre-tax expanded profit rate is illustrated in Figure 10, where the conventionally defined pre-tax profit rate from Figure 1 is also shown. The two rates have a very similar trend until the late 1970s; thereafter the profit squeeze by supervisory wages creates a significant difference, as it depresses the upswing of the conventionally defined rate. Finally, with profits replaced by the class income of capital, the decomposition of equation (1) can be applied. Figure 11 is the counterpart to Figure 2. But there are some interesting differences. Until the trough of the profit rate in 1982, the expanded profit share, and hence the rate of surplus value, was approximately constant, so that movements in the class rate of profit were almost entirely determined by movements in the productivity of capital. And in the upswing, the rising productivity of capital was more than twice as important as the rise in the rate of surplus value.\footnote{If $y = xz$, then $\Delta y = x' \Delta z + z' \Delta x$, where $x' = (x_1 + x_2)/2$ and $z' = (z_1 + z_2)/2$, the subscripts indicating the start year and finish year of the period over which the change is measured.}

Table 6 summarizes. The change in empirical perspective from a conventional
factor shares approach to a class approach throws a particular light on the importance of movements in capital productivity in the explanation of profit rate changes.

5 Conclusion

This paper has attempted three tasks. First it has presented a general theoretical framework within which issues of macroeconomic development from a surplus-based perspective can be considered. Second, it has described how this theoretical framework can be empirically used, and further suggested how the activities of general government can be explicitly considered. And third, it has described the time trends that emerge from operationalizing the theoretical framework, focusing on how the distinction between productive and unproductive labour bears on the class struggle between labour and capital.

These estimates provide further evidence that there has been a watershed in the macroeconomic history of the U.S., and that this watershed is structural in the sense that what followed was completely different from what preceded it. How it is dated depends upon the object of study. From the perspective of the relationship between real wage growth and productivity growth, it was 1979. From the perspective of profit rate, profit share and capital productivity, the watershed was 1982. One area for further research is the extent to which the volatility of share produced by class struggle in the 1970s was an indication of the end of the ‘golden age’ of the post-war boom. Another is the extent to which the state has acted as proxy for capital, leading class struggle rather than reflecting it. The effects on state finances of such activities are also important, even though this paper only considers between
Table 6: *Decomposing the Percentage Points Change in the Profit Rate*

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>conventional profit rate</td>
<td>-7.80</td>
<td>3.86</td>
<td>-2.26</td>
</tr>
<tr>
<td>conventional profit share</td>
<td>-4.10</td>
<td>1.66</td>
<td>-2.03</td>
</tr>
<tr>
<td>capital productivity</td>
<td>-3.71</td>
<td>2.20</td>
<td>-0.23</td>
</tr>
<tr>
<td>%tage contributions of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>conventional profit share</td>
<td>52.53</td>
<td>42.96</td>
<td>89.68</td>
</tr>
<tr>
<td>capital productivity</td>
<td>47.47</td>
<td>57.04</td>
<td>10.32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>expanded profit rate</td>
<td>-7.81</td>
<td>8.01</td>
<td>-1.13</td>
</tr>
<tr>
<td>expanded profit share</td>
<td>-0.29</td>
<td>2.56</td>
<td>-0.43</td>
</tr>
<tr>
<td>capital productivity</td>
<td>-7.52</td>
<td>5.45</td>
<td>-0.70</td>
</tr>
<tr>
<td>%tage contributions of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>expanded profit share</td>
<td>3.72</td>
<td>32.00</td>
<td>38.39</td>
</tr>
<tr>
<td>capital productivity</td>
<td>96.28</td>
<td>68.00</td>
<td>61.61</td>
</tr>
</tbody>
</table>

62% and 72% of state current receipts and current expenditures. Still another area of research is to explain the trends in capital productivity (untouched upon in this paper), for these account for about half of the movement in the conventional rate of profit, almost all of the downswing in the expanded, class rate of profit, and more than two thirds of its upswing.

One conclusion of this paper is that the distinction between productive and unproductive labour can be set within a general theoretical framework and operationalised empirically. A related conclusion is that it is essential to distinguish different categories of unproductive labour and their effects upon profitability, and that failure to do so generates misleading results. In general, the interaction between categories of productive and unproductive labour on the one hand, and class on the other is complex. The distinction between productive and unproductive labour is a structural one about the creation of value, while the balance of class struggle can more generally be illustrated by considering the wages of production labour on the one hand, and those of supervisory labour together with profits. The precise mechanisms whereby each of these categories receives income is different, and failure to account for this fails to account for the complexities of capitalism. Further, the distinction drawn between gross incomes, and incomes after direct taxes and transfers produces further complexities in the analysis.
of trends. But it also opens an avenue for the exploration of the interaction between economics and politics, which defines the subject matter of political economy.

Finally, perhaps the most striking conclusion is the relative constancy of the wage share in \textit{MVA} of production workers in unproductive sectors across the whole period. This implies that class shares can be considered directly without having to take account of the productive-unproductive labour distinction. Whether this is a temporally contingent result, a property confined to the U.S. economy in the last third of the twentieth century, is an important issue for further investigation.

\section*{A Appendix}

\subsection*{A.1 Electronic Data Sources}

\textbf{NIPA:} Bureau of Economic Analysis, National Income and Product Accounts:

\url{http://www.bea.gov/bea/dn/nipaweb/SelectTable.asp?Selected=N}

\textbf{FAT:} Bureau of Economic Analysis, Fixed Assets Tables:

\url{http://www.bea.gov/bea/dn/faweb/AllTables.asp}

\textbf{FoF:} Federal Reserve, Flow of Funds Account:

\url{http://www.federalreserve.gov/releases/Z1/Current/data.htm}

\textbf{BLS:} Bureau of Labor Statistics, National Employment, Hours and Earnings:

\url{http://data.bls.gov/labjava/outside.jsp?survey=ee}

\textbf{ID:} Census Bureau: Income Distribution by Household Quintile:

\url{http://www.census.gov/hhes/income/histinc/rdi8.html}

Classification by industry is by the 1987 Standard Industrial Classification (SIC) for 1987-2001, and the 1972 SIC for 1964-87. At the level of aggregation at which data are employed in this paper, the changes in classification produced by the change in SIC are assumed to be insignificant. Note that the data do not include the 2003 comprehensive revision of the NIPA, and do not take account of the conversion of the estimates of income and employment-by-industry to the 1997 North American Industry Classification System.

\subsection*{A.2 MVA and GDP}

To construct \textit{MVA} out of \textit{GDP} requires subtracting those flows of use-values evaluated in money terms which are not flows of money value added. These are the consumption of fixed capital, the activities of general
government, and those flows of resource which are not matched by any monetary payment at all, but to which the NIPA impute a set of matching monetary flows. The largest imputation is the rent that owner occupiers are deemed to pay to themselves, which is the gross product of owner-occupied housing, but there are several others (lines 172-8 of Table 8.21 in the NIPA). Care has to be taken not to exclude the consumption of fixed capital twice, and employment related imputations are multiplied by the ratio of total employee compensation excluding general government employee compensation, to total employee compensation. A good case can be made for excluding all activities by private households and non-profit-making institutions, but because of the difficulties of identifying them in the data, they are included in $MVA$ in this paper. In terms of orders of magnitude, $GDP$ overestimates $MVA$ by between 35.9% in 1965 and 52.1% in 1991. There is a clear increasing trend of overestimation until 1991, but not thereafter.

### A.3 The Pre-Tax Rate of Profit

The pre-tax rate of profit is the ratio of profit to the capital stock. Profit is $MVA$ less total BTB wages. The capital stock is the sum of net fixed assets and inventories. Net fixed assets are private fixed assets (excluding owner occupied housing) at current replacement cost, and are from FAT, Table 3.1ES, adjusting for the stock of owner-occupied housing in Agriculture from Table 5.1, and adding in the stock of fixed assets in government enterprises from Table 7.1. Inventories are from FoF, Tables B102 and B103.

### A.4 Productive Labour

#### A.4.1 Benchmark Estimates

For numbers and wages, see Mohun (forthcoming). Total hours are adjusted for self-employment by dividing by fte employees and multiplying by persons engaged in employment (NIPA Table 6.8) for every SIC division. This assumes that an average self-employed person works the same hours as an average fte employee, which is doubtful. Self-employment is significant, being 13.7% of total employment in private industries in 1964 and 8.5% in 2001, and clustering in Agriculture, Forestry and Fisheries and Construction (78.0% in 1964 and 55.9% in 2001). Hence it is likely that total hours, and hence productive and unproductive components of total hours, are underestimated. For hours of productive labour, take the appropriate BLS average hours per week worked by relevant production workers, and multiply by 52 and by the number of fte production workers.

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17By contrast, there is no difficulty with the gross product of tenant-occupied housing, for these are a set of genuine market transactions. It is possible of course to exclude the gross product of tenant-occupied housing as well. This makes little difference to $MVA$, the ratio of the ‘no housing measure’ to the measure used in this paper has a mean of 0.9766 and a standard deviation of 0.0023.
for each SIC division defined as productive. Hours of unproductive labour are determined by subtraction of productive hours from total hours.

A.4.2 Approximations

A description of the procedures used to resolve the missing data in numbers, wages and hours is available from the author on request.

A.5 Tax and Transfer Rates

Direct tax and transfer rates are calculated from ID. The top quintile is assumed to reflect the situation of supervisory workers, and the next three quintiles together are taken to reflect the situation of production workers. The bottom quintile is assumed not to be in employment. Cash transfers for all except the bottom quintile are adjusted to exclude benefits to the non-employed (by using a ratio constructed from NIPA (Table 3.12: lines 5 + 22 + 26 – 27 – 39 – 41, to lines 1 – 24). where earned income credit is excluded because it is separately accounted for). There are no ID data prior to 1979. The 1979 ID aggregate tax and transfer rates are divided by the 1979 NIPA ratio of (total wages + transfers - income tax - social security contributions) to total wages, and this 1979 ratio is used on the NIPA ratio to construct the missing 1964-78 data. The use of household data rather than data for individuals, the imprecise correspondence between the top quintile of households and the 18% or so of individuals who are supervisory workers, and the calculations and extrapolations just mentioned, imply that the ATB data in the paper are very approximate.

References


