

Profitability and the Roots of the Global Crisis: Marx's 'Law of the Tendency of the Rate of Profit to Fall' and the US Economy, 1950–2007

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Abstract

The relevance of Marx's theory of value and his 'law of the tendency of the rate of profit to fall' to the analysis of the financial crisis of 2007–8 and the ensuing global slump is affirmed. The hypertrophic growth of unproductive constant capital, including the wages of 'socially necessary' unproductive labour and tax revenues, is identified as an important manifestation of an historical-structural crisis of capitalism, alongside the increasing weight of fictitious capital and the proliferation of fictitious profits in the lead-up to the financial crisis. These phenomena have obscured the deepest roots of the global slump in the long-term profitability problems of productive capital – that is, in a crisis of surplus-value production. With these considerations taken into account, a better empirical assessment of trends in the composition of capital becomes possible, and with it a more accurate understanding of the impact of the ongoing displacement of living labour from production on the average rate of profit and the future of US and global capitalism.

Introduction¹

Since the onset of the financial crisis of 2007–8 and the ensuing Great Recession, radical political economists have debated the role of profitability in what has

1. The authors wish to thank the editors, especially Adam Hanieh, for their contributions to

been the most severe systemic crisis of global capitalism since the 1930s. While few, if any, have argued that the downturn that began in 2007 was triggered exclusively by a conjunctural fall in the average rate of profit (either globally or in the United States), radical-left commentators have generally adopted one of two divergent positions: 1) the severe profitability crisis of the 1970s and early 1980s prompted changes in capitalist investment strategies, state regulatory practices and patterns of capital accumulation that have not (or not yet) resolved the crisis entirely, but that did pave the way for a much-enlarged role for financial capital and therewith for the financial turbulence that crested in September 2008;² or 2) the profitability crisis was substantially overcome by the late 1980s, and therefore the latest crisis of global capitalism has much more to do with the contradictions of ‘financialisation’, conceived as a process that has been integral to the neoliberal project and largely beneficial to profitability in a new era of finance-driven capitalism.³ Proponents of Marx’s ‘law of the tendency of the rate of profit to fall’ (hereafter, ‘LTRPF’) tend to support the first position, while its critics on the radical left tend to support some variant of the second.⁴

In this article, we defend a particular version of the first position – one which takes seriously Marx’s LTRPF and regards it as central to a satisfactory account of the origins of the current crisis, but also recognises that this ‘most important law of modern political economy’⁵ has found evolving concrete expressions

2. See, among others, Smith 2010, Carchedi 2011, Freeman 2009, Shaikh 2010, and Harman 2009a.

3. Albo, Gindin and Panitch argue, *inter alia*, that the ‘onset of the crisis in 2007 was not rooted in any sharp profit decline or collapse of investment. . . . Rather it was rooted in the dynamics of finance.’ (Albo, Gindin and Panitch 2010, p. 42.) Choonara 2009 provides a survey of other accounts of the crisis that share this general approach.

4. A third, intermediate position is occupied by McNally 2011, who embraces Marx’s value-theoretic strategy and the LTRPF while agreeing with Albo, Gindin and Panitch that the neoliberal era has been a ‘very dynamic period of capitalism’ (Albo, Gindin and Panitch 2010, p. 33). McNally argues that ‘while neoliberal expansion (1982–2007) did not reach the heights of the Great Boom [of 1948–73], it compares most favorably with every other phase of capitalist history.’ (McNally 2011, p. 38.) However, McNally’s comparative historical analysis is based on figures for *world economic growth* for four discrete periods, and fails to discriminate between GDP growth in capitalist, pre-capitalist, semi-capitalist and post-capitalist regions of the world economy – regions whose specific weights and roles have varied enormously over the 130-year ‘capitalist history’ that he surveys. For example, China’s growth performance during its Maoist period is treated no less problematically as a component of *capitalist* ‘world economic growth’ than its performance since 1979 (the post-Maoist period) or its performance between 1870–1949, when it was burdened by feudalism and imperialist subjugation. Through this legerdemain, McNally obscures the historical significance of the sluggish rate of global capitalist growth in the neoliberal era.

5. Marx 1973, p. 748.

over the history of capitalism. Building on Murray Smith's analysis in *Global Capitalism in Crisis: Karl Marx and the Decay of the Profit System* (2010), the article reports our attempt to chart the fundamental Marxian ratios for the US economy between 1950 and 2007. In doing so, it reinforces three of Smith's central propositions: 1) the current crisis has its deepest roots in the persistent profitability problems of *productive capital* on a world scale; 2) these problems are an expression of Marx's LTRPF in an era that has been marked both by a persistently high organic composition of capital (involving the displacement of living labour from production) and by the growing weight of unproductive capital and 'socially necessary unproductive labour'; and 3) the profitability problems of productive capital, the hypertrophy of unproductive capital and the capitalist state, and the unprecedented growth of global debt over the past decade are interrelated expressions of an 'historical-structural crisis' of the capitalist mode of production (hereafter, 'CMP').

The Marxian theoretical presupposition of this argument is that economic value originates in social labour and must be conceptualised both in terms of the *class dynamics* of capitalism and *temporally*. For Marx, value is above all a *social relation*, the substance of which is abstract labour, the measure of which is socially necessary labour time, and the form of appearance of which is money. Marx's fundamental value-categories of constant capital, variable capital and surplus value are key to conceptualising the specifically capitalist mode of class exploitation, the process of capital accumulation, and the distribution of value in national income and gross output. But the Marxian theory of capitalist crisis – and especially any Marxian theory of the historical-structural crisis of the CMP – must also distinguish between three *temporal modes* of value: previously existing value (PEV), new or currently produced value (NV), and anticipated future (not-yet-existing) value (AFV).

In Marx's theory, the concept of constant capital corresponds to PEV, while variable capital and surplus value are two forms of NV whose relative magnitudes are, within certain limits, determined by class struggle. The concept of AFV is not developed by Marx in any systematic way but is nevertheless implicit in his discussions of the credit system and 'fictitious capital'. Stocks, bonds and debt obligations, together with more recent innovations in fictitious capital such as credit default swaps, constitute claims on current and previously existing value (NV and PEV) but also wagers on AFV – value that has yet to be, and that may never be, produced.⁶

6. Marx writes: 'With the development of interest-bearing capital and the credit system, all capital seems to be duplicated, and at some points triplicated, by the various ways in which the same capital, or even the same claim, appears in various hands in different guises. The greater part of this "money capital" is purely fictitious' (Marx 1981, p. 601). A contemporary instance is

Fictitious capital has long played an important role in the operations of capitalist economies, and should not be regarded as purely parasitic or predatory. Fundamentally, however, it is money capital seeking to enlarge itself through speculative claims on future income, signifying an attempt on the part of a fraction of the social capital, centred in the financial sector but involving other sectors as well, to liberate itself from the problems of the ‘productive economy’ and the constraints of the law of value. Our claim is that *the proliferation of forms of fictitious capital whose ‘temporal value composition’ is weighted more and more toward AFV has emerged as a hallmark of the historical-structural crisis of capitalism in the neoliberal era.*⁷

As the flow of constant capital (PEV) grows relative to the flow of NV (due to the declining role of productive labour in the capitalist economy), there is a corresponding tendency for representations of AFV to acquire increased importance. This process is manifested in the proliferation of *increasingly fictitious* forms of financial capital and a malignant growth of unsustainable debt. The result is that the true extent of the ‘valorisation crisis’ of late capitalism is concealed by the false appearance of (some) AFV as part of the ‘profit’ component of currently produced surplus value. Consequently, booked profits, as these appear in conventional national income accounts, reflect not only a determinate share of the new value produced by productive living labour, but also ‘fictitious profits’ that have no substantial foundation in the value-creation process.

the appearance of ‘money-capital’ at first as a mortgage and later as a mortgage-backed security. Later, Marx observes that ‘commodity capital largely loses its capacity to represent *potential* money capital in time of crisis, and generally when business stagnates. The same is true of fictitious capital, *interest-bearing paper*, in as much as this itself circulates as money capital on the stock exchange. As the interest rate rises, its price falls. It falls further, owing to the general lack of credit, which compels the owners of this paper to unload it onto the market on a massive scale in order to obtain money’ (Marx 1981, pp. 624–5, emphasis added). Carchedi observes: ‘Titles of credit/debt have no intrinsic value. However, they have a price. Take a bond. Its price is given by the capitalization of future earnings and thus depends on the rate of interest. Marx refers to this as the “most fetish-like form” of capital because it seems that it is capital that creates surplus value, not labour . . . If loan capital is fictitious, loan (financial) profits are fictitious too. They are fictitious not because they do not exist (as in some fraudulent accounting practices). They are the appropriation of a representation of value (money), and in this sense they are real. But they are fictitious because this appropriation is based upon a relation of debt/credit rather than of production. Financial capital sells valueless titles of debt for money’ (Carchedi 2011, pp. 5–6).

7. As Smith has observed, one of the consequences of the new investment strategy of the social capital in this era was ‘financialization – significantly increased investment in financial activity, the appearance of new financial instruments like derivatives and hedge funds, frenzied speculation surrounding a growing volume of fictitious capital, a massive overloading of the credit system and a generalized “irrational exuberance”’ (Smith 2010, p. 15).

To be sure, some profits that do not arise from the current exploitation of living labour represent *transfers* within the circuits of capitalist revenue (NV) or from certain streams of constant capital (for example, PEV flows originally earmarked for state expenditures). Such profits can be conceptualised as ‘profit upon alienation’ or ‘profit through dispossession’. But alongside such (non-NV) profits exists a growing mass of fictitious profits (above all in the financial sector) that constitute claims on AFV in the form of debt obligations – and therefore claims on income whose actualisation depends on the future performance of productive labour.⁸

The mechanisms whereby booked profit is bolstered by transfers involving one or another form of AFV are myriad and cannot be examined in detail here. Nevertheless, theoretical acknowledgement of this reality is vitally important to registering the significance of the long-term divergence between the rate of profit on productive capital and the rate of profit on financial capital. The more robust performance of the latter compared to the former has been one of the most striking features of capitalism in the neoliberal era. At the same time, however, it can be seen as constituting a new and rather significant ‘adulteration’ of Marx’s LTRPF – one which further complicates the already daunting task of evaluating this law through empirical analysis.

Notwithstanding these difficulties, we are convinced that Marxist analysis of the historical dynamics of the capitalist world economy ought not to dispense with serious attempts to measure such fundamental Marxian (value-theoretic) ratios as the average rate of profit, the rate of surplus value, and the organic composition of capital. To be sure, such attempts can never offer much more than rough approximations. Even so, we think that they are vitally important to charting and comprehending essential trends in the CMP – trends that can usefully inform, if only in a very general sense, the political-programmatic perspectives and tasks of Marxist socialists in relation to the broader working-class movement.

8. Harman notes: ‘The shock of the financial crisis of the last two years is now leading some bourgeois economic commentators to recognize that there were “fictitious profits” – and with them “fictitious economic growth” – in the mid-2000s, if not earlier. Most calculations of profitability try to circumvent this problem by restricting themselves to non-financial corporations (or, sometimes, the non-financial business sector). But many major non-financial corporations... became increasingly dependent on financial operations from the 1990s onwards’ (Harman 2009b, p. 3). Lapavistas and Levina 2010 point out that ‘financial profit remains redistributed loanable capital, hence, a part of the existing flows of value.’ Thus, while it encompasses redistributed profit from production, ‘it retains elements of profit upon alienation or expropriation’ as well. In official national-income accounts, no effort is made to distinguish financial profits that originate in flows of value newly created in production from those that originate in previously existing flows. The continual repackaging and re-selling of derivatives in recent years undoubtedly generated financial profits (upon alienation) of an especially fictitious character.

Our itinerary is as follows. In Section I, we discuss the main elements of Marx's LTRPF, the theoretical controversy surrounding it, and some of the major problems involved in empirically evaluating the actuality of the law. We then outline our own approach to theoretically specifying the value categories that comprise the Marxian ratios and discuss some of the controversial issues posed by this specification. In Section II, we consider these issues in greater depth and explore their implications for an analysis of the current crisis that traces the roots of the financial crisis of 2007–8 in the longer-term crisis of profitability of the advanced capitalist world. In Section III, we consider the same issues in relation to some recent analyses and debates among radical political economists concerning trends in the US economy with regard to the rate of profit, the output-capital ratio, the accumulation rate, the rate of surplus value, and the technical composition of capital. In Section IV, we present the findings of our own 'case study' of the US economy between 1950 and 2007, concluding in Section V with a few observations concerning the political-programmatic implications of our findings.

I. The rate of profit and the crisis of global capitalism

Marx's law of the tendency of the rate of profit to fall

Capitalism is dominated by historically specific laws that are rooted in its fundamental social relations of production, relations that are at once class-exploitative, competitive and formally egalitarian. The capitalist law of value regulates socio-economic reproduction by allocating resources in accordance with the principle that only living, commodity-producing labour can create new value. This new value finds expression in the wages of *productive* wage-labourers (variable capital – v) and in the surplus value (s) appropriated by the class of capitalist property owners. As the competitive dynamics of capitalist accumulation assert themselves, individual capitalist enterprises seek to improve their productivity and lower their costs of production/doing business by reducing their dependency on living wage-labour and relying on labour-saving technologies. The result is an increase in the technical composition of capital (TCC) – the ratio of means of production or 'constant capital stock' (C) to living labour, as well as an increase in the rate of surplus value (s/v) – the rate of exploitation of productive labour. To the extent that the increase in the former ratio finds expression in value/money terms, the consequence will be increases in the 'value composition of capital' (VCC, measured as C/v) and the 'organic composition of capital' (OCC, measured as $C/s+v$).

An increase in C/v will only lead to a fall in the average rate of profit (measured as s/C) if it rises faster than the rate of surplus value (s/v). However, inasmuch as any change in $C/s+v$ already manifests changes in s/v , an increasing organic composition of capital (OCC) *must* be associated with a falling rate of profit.⁹ This is the essence of Marx's LTRPF.

The capitalist law of value and the LTRPF are understood by Marx to involve and reflect a deepening structural contradiction between the development of the productive forces and the reproduction of capitalist social relations. Indeed, they inform and give expression to a growing incompatibility between the 'technical-natural' and 'social' dimensions of capitalism as an historical mode of production.¹⁰ Thus, while playing an important (though not always central) role in periodic crises of the capitalist economy, the LTRPF also finds long-term, 'secular' expressions and can be viewed as integral to capitalism's historical-structural crisis.

Marx's LTRPF provides a simple and remarkably compelling foundation for the argument that capitalism's capacity to develop the productive forces and promote human progress is historically limited. But precisely because it stands opposed to any notion that capitalism can enjoy a progressive, crisis-free evolution, it has been the target of repeated criticism from both defenders of the capitalist order and reformist leftists who envision a gradual, incremental transition to socialism. Having noted this important dialectic of programme and theory, we are nevertheless obliged to consider the scientific merit of the major theoretical objections to the LTRPF, since no empirical demonstration

9. This conceptualisation of the relationship between the fundamental Marxian ratios follows the approach suggested by Mage 1963 and differs from the influential treatment by Sweezy 1968. Smith summarises the approach as follows: 'The rate of surplus-value is the ratio of two *flows* of living labour (L), which together constitute the "net value" of the commodity product: surplus value and variable capital. Hence, $s'=s/v$. It follows from this that $s = L-v = L-(s'/v) = L/(1+1/s') = L(s'/1+s')$. Now, if the OCC is Q and this equals $C/s+v$, then $Q=C/L$, and the capital stock C equals $L \times Q$ ($C=LQ$). If the rate of profit is the ratio of surplus value to the capital stock (s/C), then through substitution we arrive at $r = L(s'/1+s')/LQ = s'/(Q(1+s'))$. In this formula, changes in the rate of surplus value will impact on both the rate of profit and the OCC, so that if the OCC increases, this must mean a fall in the rate of profit. An increase in the rate of surplus value contributes to maintaining or increasing the rate of profit only if it occurs without an increase in the OCC defined as $C/s+v$ ' (Smith 1994, p. 149.) Marx's own representation of the relationships between these ratios in *Capital* fails to distinguish between stock and flow expressions of constant capital. He also treats variable capital as part of the 'capital advanced', despite his observation that wages are paid out only after the value that they represent has been produced. On the latter point, see Mage 1963 and Reuten 2006. For further discussion, see footnote 76 below. For alternative definitions of the technical, organic and value compositions of capital, see Reuten and Williams 1989, Carchedi 1991 and Saad-Filho 2002.

10. Marx 1859; Smith 2010.

can establish its veracity so long as significant doubts about it remain at the theoretical level.¹¹

*The controversy surrounding the LTRPF*¹²

The most important objections to Marx's exposition of the LTRPF are to be found in four (somewhat overlapping) arguments: 1) the argument that the tendencies which Marx himself identifies as 'counteracting' the fall in the rate of profit are sufficient to effectively negate the 'law as such'; 2) the neutral technological progress argument, according to which technological innovation under capitalism can evince a 'capital-saving' bias just as easily as a 'labour-saving' one; 3) the 'rising technical composition/stable organic composition' argument, according to which the displacement of living labour from production and any concomitant increase in the TCC need not be reflected in a rising OCC; and 4) the 'choice of technique' argument, according to which Marx's theory fails to establish why individual capitalist firms would adopt techniques of production that lower the average rate of profit. Let us consider each of these in turn.

A. The law and its counteracting tendencies: In evaluating what Marx cites as counteracting tendencies to a falling rate of profit, we can begin by distinguishing those factors that contribute to an increase in the rate of surplus value from those that pertain directly to the OCC. With respect to the former we can identify (1) 'increases in the intensity of exploitation', (2) 'reduction of wages below their value', and (3) 'relative overpopulation'. With respect to the latter we can identify (4) 'the cheapening of the elements of constant capital' and (5) 'foreign trade'.¹³

'Increasing the intensity of exploitation' encompasses two distinguishable modes of increasing exploitation, only one of which can counter a fall in the rate of profit. In this connection, Marx points to methods employed by capitalists to increase labour productivity that do *not* involve investments in labour-saving technology conducive to a rising OCC. Such methods are generally associated with the production of 'absolute surplus value' and include speed-up and a prolongation of the working day – methods which run up against physiological limits, worker resistance and pressures to increase wages. Marx also mentions productivity-enhancing technical innovations as

11. Reuten and Williams 1989, p. 118, Addenda a.

12. The following discussion borrows heavily, though incompletely, from Smith 1994, Chapter 7. The collections edited by Bellofiore (Bellofiore (ed.) 1998) and Campbell and Reuten (Campbell and Reuten (eds.) 2002) also provide useful surveys of many of the controversial issues surrounding Marx's LTRPF.

13. Marx 1981, Chapter 14.

these are applied by individual capitalists ‘before they are universally applied’ and, presumably, before they have an impact on the economy-wide OCC.

As with the methods employed to increase the intensity of labour exploitation, ‘the reduction of wages below their value’ is generally an *ephemeral* factor in countering the fall in the rate of profit; for any permanent reduction would amount to a lowering of the value of the commodity labour-power, thereby compromising workers’ performance within the labour process and eventually inciting serious worker resistance. Thus, a long-term reduction of wages below their value can be envisioned only under conditions of severe anti-labour repression.

‘Relative overpopulation’ can also have a positive impact on the rate of exploitation by pushing down wages, but it encounters a significant barrier in the limited size of the working population. Only where capitalism is in the process of uprooting non-capitalist modes of production and constantly replenishing a massive ‘reserve army’ of the unemployed is it likely to have anything more than a short-term impact as a counteracting factor.

Conjuncturally, all three of the above factors can play a role in increasing the rate of surplus value without inducing a rise in the OCC. Even so, Marx’s apparent expectation that the rate of surplus value will show a *secular* tendency to rise is inseparable from his view that it will rise mainly due to an increased TCC. And such an increase, Marx assumed, will find a value expression in a rising OCC. Only if a rising TCC occurs without a concomitant increase in the OCC can this lead to a situation of rising productivity and exploitation with no falling rate of profit.

It is in just this connection that ‘the cheapening of the elements of constant capital’ assumes its exceptional significance as a counteracting factor. Marx writes: ‘[The] same development that raises the mass of constant capital in comparison with variable reduces the value of its elements, as a result of the higher productivity of labour, and hence prevents the value of the constant capital, even though this grows steadily, from growing in the same degree as its material volume, i.e. the material volume of the means of production that are set in motion by the same amount of labour-power.’¹⁴ Marx insists that the OCC will rise less impetuously than the TCC, but he does *not* assert that a rise in the OCC will be *prevented* by ‘a higher productivity of labour’. For a rise in the OCC to be fully blocked, the elements of constant capital must ‘increase [in mass] while their total value remains the same or even falls’.¹⁵ While the limitations of ‘constant capital saving’ as a factor inhibiting the fall in the profit rate are

14. Marx 1981, p. 343.

15. Ibid.

not well specified by him, it is reasonable to assume that Marx considered labour-saving innovation a *greater priority* for capitalists. After all, the drive by capitalist enterprises toward labour-saving innovation is deeply rooted in the *totality* of social production relations in which they are enmeshed – relations that impel them not only to cut costs per unit of output in order to meet the challenges of competition, but also to cut them in ways that simultaneously strengthen capital's hand in relation to labour.

Marx's fifth counteracting factor is 'foreign trade and investment' – a factor that is clearly germane to the performance of *national* rates of profit, but much less so to an increasingly internationalised rate of profit. Even so, this factor can play a role in elevating the average rate of profit of particular national economies only to the extent that the terms of trade *continue* to improve and/or the rate of return on capital invested abroad *continues* to rise from the standpoint of a given 'national' social capital. Accordingly, the results of foreign trade and investment need to be viewed as a two-edged sword, capable of depressing as well as raising national rates of profit.

This survey of the tendencies counteracting the LTRPF suggests that 'the law as such' and the counteracting tendencies to the law are not co-equal 'tendential laws'.¹⁶ While the 'countertendencies' are unquestionably key components of capitalist dynamics, all of the counteracting tendencies cited by Marx – with the possible exception of the cheapening of the elements of constant capital – have clearly defined *limits* as means to stemming a fall in the average rate of profit. On the other hand, the 'law as such' – a rising OCC, accompanied by a falling rate of profit – finds its limit only in economic crises that bring about a devaluation of capital assets. In Marx's theory, it is *capitalist crisis* that creates the conditions for a recovery of the profit rate and resumed accumulation. Moreover, it is precisely the *recurrence* of capitalist crises that induces the capitalist class to deploy ever-changing 'tactics' to increase the rate of profit, ensure the conditions of accumulation, and mitigate the destabilising influences of severe economic dislocations on capitalist society's 'class equilibrium'.

B. The 'neutral technological progress' argument: Marx's LTRPF postulates that technological progress under capitalism has an inherently *labour-saving bias*. Against this, several of his critics argue that, *given a constant real wage*, there are no good reasons to believe that capitalists will economise more on labour than on constant capital. But a constant real wage is by no means a 'given' in the real world, and it is precisely the real-world possibility of wage

16. Cf. Albo, Gindin and Panitch 2010, p. 39.

increases that outstrip the growth of labour productivity which ensures that technological progress must exhibit a labour-saving bias.

What needs to be emphasised here is that the labour-saving bias of capitalist innovation has its most fundamental roots in the ‘real subsumption of labour by capital’.¹⁷ Labour-saving technical innovation – the utility of which is to increase ‘relative surplus value’ – strengthens capital’s hand by rendering it as independent as possible of living labour in general and skilled labour in particular. This is the first ‘functional’ benefit accruing to capital from a rising TCC.

The second benefit of labour-saving innovation is more straightforward, and was alluded to earlier. Since the limited size of the working population is an obvious barrier to the accumulation process, capitalists must find ways to increase output in the face of labour shortages. Labour-saving technological innovation is by far the most effective solution to this problem. If technical change were to exhibit a neutral tendency or a constant capital-saving bias, capital’s dependence on the available working population would become ever greater, depleting the reserve army of labour and forcing up wages.

If Marx’s TCC refers to ‘what modern economists call “capital intensity,” the quantity of capital goods in real terms co-operating with each worker at some “normal” level of full employment’,¹⁸ then the TCC can be defined as the ratio of means of production expressed in ‘constant dollars’ to the number of production workers, or, better still, as the constant-dollar value of capital stock employed per hour worked. All theoretical speculation aside, empirical studies establish unmistakably that technological change does indeed exhibit a pronounced labour-saving bias in the long term and furthermore that this tendency entails a marked increase in the TCC.¹⁹

C. The ‘rising TCC – stable OCC’ argument: The most frequently encountered theoretical objection to the LTRPF concerns Marx’s expectation that a rise in the TCC (a ratio of ‘use-value’ magnitudes) will be accompanied by a rise in the OCC (a ratio of value magnitudes). As noted above, Marx acknowledges that the rise in the OCC will not be as pronounced as the rise in the TCC owing to productivity increases associated with the latter. His critics go further, however, arguing that productivity increases in industries producing means of production have the effect of reducing the value of constant capital, in this way deflating the value of the capital stock, the numerator of the OCC.

It can be demonstrated, however, that productivity increases cannot *completely* negate the tendency of the OCC to rise along with the TCC. As

17. See ‘Results of the Immediate Process of Production’, Appendix to Marx 1976, pp. 948ff.

18. Mage 1963, p. 72.

19. See Leontieff 1982, Shaikh and Tonak 1994, and Webber and Rigby 1996.

already noted, the rise in the TCC is attributable to a labour-saving bias in capitalist technical innovation – a notion rooted in Marx’s explicit recognition of the capital-labour relation as *antagonistic*. Such a notion is absent from the neoclassical theory of technical progress, and for just this reason it is difficult to see from the latter perspective that the use-value of a ‘capital good’ is a function not only of its ‘capacity-increasing effect’ but of its ‘labour-saving effect’ as well.²⁰ Once this *dual* function of capitalist means of production is recognised, it becomes clear that the TCC is neither proportional to nor quantitatively co-extensive with labour productivity.

Labour productivity is the ratio of *the mass of use-values produced* (output or capacity) to the number of hours worked. The TCC, on the other hand, refers to the ratio of *the use-value of the means of production* in relation to the number of hours worked. Accordingly, the use-value of the numerator of the TCC (the capital stock) encompasses *both* output/capacity-expanding and labour-saving effects. If technical innovation displays a labour-saving bias, for all the reasons pointed to by Marx, then the numerator of the TCC should increase at a *faster* rate than the numerator of labour productivity – since all positive changes in the latter will be reflected in the former but not all positive changes in the former will find expression in the latter. Since the OCC is the value expression of the TCC, it follows that a rise in the OCC will be restrained by increased labour productivity but not entirely blocked.²¹

D. The ‘choice of technique’ argument: If a rising OCC is compatible with a stable or rising rate of profit *for particular capitals*,²² the precise ‘micro-economic’ criteria by which individual capitalist firms choose different techniques of production need to be established. The much-cited ‘Okishio theorem’ attempts to show that the criteria actually employed by capitalists would rule out a fall in the *general* rate of profit.²³

Under competitive conditions, a capitalist enterprise will only adopt a specific technique of production if it lowers per-unit production costs or increases per-unit profits at prevailing prices. Such innovation enables the firm to achieve a ‘transitional’ rate of profit higher than the prevailing ‘general’ rate. Consistent with the dubious ‘neo-Ricardian’ presupposition of an absolute

20. Mage 1963, p. 159.

21. A more detailed development of this argument is presented in Smith 1984, pp. 144–8.

22. High OCC firms are able to achieve higher than average rates of profit due to their ability to capture surplus value produced by other firms. Capitalists tend to realise as profit a share of socially produced surplus value commensurate with their share of the total economy-wide capital investment. But individual capitals may realise above-average shares due to their superior competitive performance in the market – and this may be due to a higher TCC (and therefore OCC).

23. Okishio 1961.

tendency toward profit-rate uniformity, the Okishio theorem assumes that ‘the new average rate will be higher than the old average, due solely to the introduction of a cheaper technique (real wages being given)’.²⁴

In his response to this ‘choice of technique’ argument, Shaikh suggests that Okishio’s theorem merely underscores Marx’s own thesis that ‘the battle of competition is fought by the cheapening of commodities’ and that ‘the cheapest method of production will win out in the wars among capitals’.²⁵ But there is a crucial *difference* between the ‘cheapest method of production’ *per unit of output* and the ‘cheapest method’ from the standpoint of *capital invested*. In order to grasp this, the distinction between *flows* and *stocks* must be appreciated. The cheapening of commodities is predicated on the lowering of unit cost-price – that is, a reduction in the *flow* of capital used up in producing each unit of output. Marx’s argument is precisely that this reduction is generally accomplished through increased investment in the fixed-capital *stock*. The ‘increase in the productive powers [of labourers]’²⁶ – which brings about the lowering of unit costs – is paid for through an increased ‘roundaboutness’ of production. Elaborating on Marx’s point, Shaikh argues: ‘Once the difference between production costs and investment costs is grasped, it immediately follows that there in fact exist two different measures of profitability; profits in relation to capital used up in production . . . which I shall call profit-margin on costs, and profits in relation to capital advanced, or the profit rate. The former is a ratio of two flows, the latter a ratio of flow to stock.’²⁷ Since the Marxian rate of profit is a ratio of the surplus-value flow to the constant-capital stock, the increased fixed capital needed to cheapen commodities ‘will lower not only the maximum but also the actual rate of profit – precisely because this cheapening “necessitates a costly and expensive apparatus” [Marx]’.²⁸

24. Shaikh 1978, p. 242.

25. Shaikh 1978, p. 245.

26. Marx 1973, pp. 776–7.

27. Shaikh 1978, pp. 242–3.

28. Shaikh 1978, p. 244. For insightful critiques of the ‘choice of technique’ argument that are complementary but not identical to Shaikh’s, see Freeman 1998, and Reuten and Williams 1989, p. 117, who argue that ‘Once the theory is cast in dynamic terms, conditions of existence (or, appropriate “microeconomic foundations”) for the TRPF can indeed be provided, and the analysis of the Okishians reduced to a special case’. Reuten and Williams seek to provide such microfoundations *inter alia* by emphasising the issue of ‘capital stratification’ and centralisation as contributing to a rising composition of capital. They write: ‘. . . whilst the average rate of profit decreases, profit is “redistributed” from the bottom to the top of the stratification’ (Reuten and Williams 1989, p. 134).

Theoretical issues in empirical measurement

The above discussion establishes, we think, that the major theoretical objections to the LTRPF are by no means conclusive and that substantial grounds exist for affirming that this law has a real and significant impact on the macro-economic dynamics of capitalist economies and the actual history of capitalism. Nevertheless, significant theoretical problems still confront those seeking to empirically test the major hypotheses suggested by the LTRPF.

The first problem concerns the value-theoretic rectitude of measuring the value categories and the Marxian ratios in magnitudes of money. Some readings of Marx posit a dualism of labour-values and money-prices which enjoins the theorist either to reject in principle *any* empirical measurement of 'value' (a stance common to many 'value-form' theorists) or to insist upon the measurement of value in units of labour (a stance associated with Ricardian, neo-Ricardian and Sraffa-based interpretations of Marx's theory, but also some 'fundamentalist' Marxist ones). In counterpoint to such readings we affirm our general agreement with Moseley that Marx's concepts of constant capital, variable capital, and surplus value 'can be defined in terms of sums of money which function as capital. In principle, these concepts correspond to entries in the income statements and balance sheets of capitalist firms'.²⁹

A second problem has to do with the appropriate theoretical specification of the value categories of Marx's system and the empirical translation of these categories using conventional data sets (as furnished by capitalist states) – data sets that tend to be recalcitrant to Marxist concepts and especially to the critical distinction between productive and unproductive labour. As this problem is central to our concerns in the rest of this article, we will not dwell on it at this point.

The third problem concerns the appropriate 'unit of analysis' for disclosing the real trends of the fundamental Marxian ratios. Can meaningful results be achieved by analysing *national* capitalist economies, or must the analysis be conducted at the level of the world economy – a postulated 'international rate of profit'?

Certainly, as the internationalisation of capital proceeds, manifested through increased international capital mobility, the formation of international 'prices of production' and more pronounced tendencies toward profit-rate equalisation across national lines, one must acknowledge that processes of international surplus-value redistribution and 'unequal exchange' will play an increasingly important role in the realisation of profits within individual capitalist nation-states. Such processes will necessarily obscure *the transnational origin of some*

29. Moseley 1991, p. 30.

of the surplus value that appears as ‘domestic profit’ – and, to a certain extent, ‘delink’ the (increasingly ‘internationalised’) category of surplus value from the ‘nationally measured’ value categories of constant capital stock and variable capital.³⁰

However, the globalisation of the capitalist economy has not reached a point where one can speak of a ‘general’ or ‘uniform’ international rate of profit, and it is impossible, in any case, to measure an average rate of profit on an international scale. What is more, it can be assumed that, to the extent that processes involving transfers of surplus value through unequal exchange are operative on a world scale, these would tend to favour national capitalist economies exhibiting the highest rates of labour productivity and the highest organic compositions of capital. Therefore, if the LTRPF can be measured and recognised as operative in the world’s most powerful and productive economy, the USA, there can be little doubt that it is also operative on a world scale.³¹

Transfers of surplus value across national lines do not occur entirely or even mainly through processes of unequal exchange. They also occur through foreign direct investment and the ‘repatriation’ of corporate profits earned abroad. Over the past twenty years, US corporate profit earned ‘in the rest of the world’ has increased considerably as a percentage of total corporate profit. This too complicates any empirical test of Marx’s LTRPF because the capital investments ‘standing behind’ these profits are not easily measured. This issue will be returned to later, but we note here that the greatest share of these foreign investments was made in high-wage countries exhibiting high compositions of capital.³²

The foregoing considerations suggest that empirical measurement of the Marxian ratios in any national framework, even that of the United States, must always be scrutinised carefully and with many caveats in mind. That said, we think the exercise is still well worth doing.

30. For extended discussions of these issues, see Smith 1994, Chapter 9, on ‘international and inter-regional value transfers’, and Carchedi 1991, Chapter 7, on ‘production and distribution as worldwide processes’.

31. In this regard, Moseley has argued that the ‘most likely source of bias resulting from [estimating the Marxian variables more narrowly in terms of the US economy] is that the composition of capital may have increased slower in the U.S. than in the world capitalist economy’ (Moseley 1991, p. 182).

32. According to one analyst: ‘Typically, U.S. firms have placed the largest share of their annual investments in developed countries, primarily in Western Europe, but this tendency has increased since the mid-1990s. In the last half of the 1990s, U.S. direct investment abroad experienced a dramatic shift from developing countries to the richest developed economies: the share of U.S. direct investment going to developing countries fell from 37% in 1996 to 21% in 2000. [In 2009 d]eveloped countries received nearly 70% of the investment funds of U.S. multinational firms, while developing countries received about 30%’ (Jackson 2011, p. 4).

The LTRPF and the historical-structural crisis of capitalism

As previously indicated, the burden of the present study is to defend, on the basis of a value-theoretic analysis of the laws of motion of capital in the US economy, several arguments advanced by Smith in his 2010 book *Global Capitalism in Crisis*. Smith's overarching thesis was that 'the current crisis should be viewed against the backdrop of a historical-structural crisis of capitalism – as an extreme conjunctural expression of the decay of the profit system.'³³

To support this thesis, Smith explores three issues pertaining to the 'deepening structural contradiction between the development of the productive forces and the reproduction of capitalist social relations'.³⁴ The first is the negative impact on profitability of a rising or persistently high organic composition of capital in the capitalist core – the issue highlighted by Marx in his LTRPF.

The second issue is the impact of the growing specific weight of unproductive capital and of 'socially necessary unproductive labour' in the advanced capitalist economies – an issue that not only enormously complicates any empirical evaluation of the LTRPF, but also points to a certain corruption or *adulteration* of Marx's law and to the declining dynamism of the capitalist mode of production: 'If capitalism's tendency to promote the "objective socialization" of labour and of production once reflected its historically progressive role in developing the forces of production, it now *also* reflects a hypertrophy of the capitalist state and the sphere of circulation – a hypertrophy which impedes the advance of the productive forces by diverting enormous economic resources *away from* production.'³⁵

The third issue stressed by Smith is that the growing systemic costs associated with the expansion of unproductive capital relative to productive capital, involving a concomitant growth of the wage bill of socially (or 'systemically') necessary unproductive labour (hereafter, 'SNUL'), should be regarded as elements of the *constant capital flow*: '[If] the growth of constant capital in relation to newly created value once signified a growth in the productivity of labour, it now *also* signifies a relative diminution of productive labour in relation to socially-necessary unproductive labour.'³⁶ As a manifestation of an historical-structural crisis of capitalism, this phenomenon reveals that a growing share of economic resources is being used to sustain and perpetuate the distinctive institutional and class-antagonistic structures of capitalism.

33. Smith 2010, p. x. The discussion on the next few pages borrows from Smith 2011.

34. Smith 2010, p. 6.

35. Smith 2010, p. 90.

36. Smith 1994, p. 181.

It signifies, in other words, that the social relations of capitalist production and reproduction are standing more and more as an obstacle to the progressive development of *human productive capacities*.

II. The specification of Marx's value categories and the origins of the current crisis

Originally proposed by Mage, the value-theoretic specification of the unproductive 'overhead costs' of the capitalist system as elements of constant capital is controversial and stands opposed to an entrenched convention to treat such costs (that is, tax revenues and the wages of unproductive workers in general) as non-profit elements of social surplus value and/or as part of variable capital (if the relevance of the productive-unproductive distinction is denied).³⁷ In a series of publications, Smith has documented the uncertain status of these costs in Marx's own writings and defended a constant-capital specification of SNUL and tax revenues.³⁸

It is beyond the scope of this article to rehearse that argument in detail here. Adopting this approach, however, allows us to agree with the critics of the productive-unproductive distinction that such costs are indeed *systemically necessary* from the point of view of the social capital (and are therefore *not* elements of surplus value easily 'convertible' to profits),³⁹ while also agreeing with our fellow defenders of the productive-unproductive distinction that it is incorrect to treat the wages of workers employed in supervisory activity, book-keeping, finance, trade and many service industries as part of variable capital – that is, as capital that is exchanged with *productive labour*.⁴⁰ In dialectical fashion, the constant-capital specification of these systemic overhead costs allows us to recognise that unproductive capital and SNUL are at once *necessary* to overall capitalist profitability and *hazardous* to it.

37. Mage argues that the costs associated with unproductive labour in the spheres of production, circulation and the state should all be treated as part of constant capital, noting that the 'difference between variable capital and constant capital is founded on their differing modes of transferring value to the commodity-product; and in the case of constant capital this characteristic mode is precisely *the addition of previously existing values*.' (Mage 1963, p. 66.) An elaboration of this argument is to be found in Smith 2010.

38. See Smith 1993, 1994, 2010, and Smith and Taylor 1996.

39. See, for example, Laibman 1992.

40. See Moseley 1991, Shaikh and Tonak 1994, Shaikh 1999, and Mohun 1996. It should be noted that some Marxists view unproductive wage-labour as a phenomenon largely confined to the capitalist state. See, for example, Reuten and Williams, who write: 'The state ... constitutes a drain on value produced since it employs labour, the productivity of which cannot be regulated on mono-dimensional value criteria ...' (Reuten and Williams 1989, p. 272).

But to theoretically sustain this specification we are obliged to conceptualise the category of constant capital as the value expression not only of physical means of production (its definition at the level of abstraction in the first volume of *Capital*) but of *all* the expenses and investments implicated in the total process of capitalist production and reproduction, *with the singular exception of living, productive labour*, which is the sole creator of the *new value* that enters into profit-of-enterprise, interest and rent (the principal components of surplus value) as well as the productive-labour wage bill.

Such a conceptualisation of constant capital has enormous implications for empirical Marxist analysis. For it suggests that the *flow* of constant capital represents a much larger share of the total value of gross output than is usually thought – and this is especially true for the most developed capitalist economies with expansive state, commercial, service and financial sectors. Other things being equal, real growth in the SNUL wage bill and in tax revenues must produce an increase in what Smith calls the ‘value composition of output’ – $C^f/(C^f+V^f+S^f)$ – that is, the ratio of the annual flow of constant capital to the total value of gross product – an increase ‘likely to be associated with a declining average rate of profit.’⁴¹

These observations have found some indirect support in a number of studies that establish a strong statistical correlation between movements in the rate of profit and in the ‘output-capital ratio’ (the ratio of GDP to the value of the total capital stock).⁴² Freeman, for example, has shown that the output-capital ratio accounts for ‘75.7 per cent of the variation [in the US profit rate] between 1929 and 1996’.⁴³

In light of the theoretical perspective defended here, the reason that the output-capital ratio accounts for so much of the variation in the rate of profit over time might be that it captures the effects of movements in *both* the OCC (defined as $C^S/[S^f+V^f]$: the ratio of the *stock* of constant capital to the sum of the two flows of new value) and the value composition of output (which reflects changes in such ‘overhead costs’ of systemic reproduction as state expenditures and SNUL wages). However, assuming that total output is equal to the sum of the *three flows* of value identified by Marx (constant capital, variable capital and surplus value), analysis of movements in the output-capital ratio (in value-theoretic terms, $[C^f+V^f+S^f]/C^S$) cannot tell us whether Marx’s theory of a rising OCC leading to a falling rate of profit is empirically verifiable, even though a

41. Smith 2010, p. 89; see also Smith 1984. It should be noted that massive amounts of constant capital, understood as PEV, are also stored up in physical assets whose value is not represented in annually measured gross output.

42. See Brenner 1998, Duménil and Lévy 2004, and Freeman 2009.

43. Freeman 2009, p. 8.

falling output-capital ratio is entirely consistent with Marx's theory and may well reflect a rising OCC.

In defending Marx's account of a rising OCC leading to a falling rate of profit, Smith refers to the results of his own empirical study of the Canadian economy from 1947 to 1991.⁴⁴ This study, based on the specification of Marx's value categories outlined above, produces an almost 'ultra-Marxist' set of conclusions regarding the long-term dynamics of capitalist development between 1947 and 1975: a falling rate of profit, a gradually increasing rate of surplus value and an impetuously rising OCC. In the ensuing 1976–91 period of capitalist restructuring in response to the profitability crisis (a period marked by a determined mobilisation of the 'counteracting tendencies' to the LTRPF), the trend lines for the rate of profit and the OCC stabilise and the rate of surplus value rises sharply.

Smith's analysis and empirical findings are in many respects unique compared to those of other participants in Marxist debates on post-World War Two profitability trends. It is distinctive, above all, because Smith rejects a measure of 'gross surplus value' that includes tax revenues and/or SNUL wages, while also postulating that the LTRPF expresses itself in an 'adulterated' form in what he considers an epoch of capitalist decline.

How, then, does this analysis assist us in understanding the process of financialisation and the proximate causes of the financial crisis of 2007–8? In brief, the profitability crisis of the 1970s, particularly as it afflicted productive capital in the core capitalist countries, was never fully resolved due to the determination of capital and capitalist states to a) avoid the kind of deep global depression that would involve widespread bankruptcies and a significant devaluation of capital stocks, and b) restore profitability through a *gradual* increase in the rate of exploitation, but in ways that would not provoke a major politico-ideological crisis for world capitalism in the era of the Cold War. Furthermore, to sustain effective demand and to mitigate crises of overproduction, the credit system was overhauled and extended in ways that allowed for the accumulation of dramatically larger volumes of debt across the world economy. Along with the globalisation of capitalist production and the creation of significant new sites of surplus-value production in Asia and Latin America, the expansion of the debt bubble helped restore profitability and conferred upon financial capital a much enhanced role in maintaining the conditions of capital accumulation and economic growth, even as the rate of new capital formation and the growth rate of global GDP slowed in the

44. Smith and Taylor 1996.

1980s and the 1990s.⁴⁵ Under these circumstances, fictitious capital and profits became much more significant phenomena within global capital markets.

The proliferation of fictitious capital and the build-up of ever-greater debt between 2001 and 2007 stimulated an anomalously high rate of profit in the US and robust global economic growth. But the escalating financial panic of 2007–8 signalled a growing recognition that the rising value of an array of dubious financial assets (collateral debt obligations and other derivatives) was wildly out of line with the ‘economic fundamentals’ (the precarious realities of the US sub-prime mortgage market, the profitability problems of productive capital, the stagnancy of real wage growth, etc.). In the end, the capitalist law of value asserted itself as a kind of gravitational force, pulling down the financial house of cards and precipitating the worst global recession since the 1930s.

This analysis suggests that the current slump is by no means a typical periodic crisis of capitalism, but rather an extreme manifestation of a longer-term crisis of capitalist profitability rooted in a persistently high organic composition of capital in the ‘advanced capitalist’ core of the world economy. Short of a complete collapse of the latter into deep depression, the immediate prospect is for a major escalation of the offensive by capital against labour on a world scale in order to both boost surplus-value production and reduce systemic overhead costs, all with a view to restoring the conditions of profitability and arresting the burgeoning debt crisis.⁴⁶

III. Some recent findings and debates concerning profitability in the US economy

While a conjunctural fall in US profitability was not the exclusive or even the main trigger for the crisis of 2007–8, we argue that the factors contributing to the profitability crisis of the 1970s and 1980s (above all, a high organic composition of capital) forced the average rate of profit in the US economy into a *relatively low range* for an extended period. The lackluster profitability of productive capital set the stage for ‘financialisation’ and related processes that made both the US and global economies increasingly susceptible to a steep debt build-up, a proliferation of dubious forms of financial capital, and, in the upshot, a financial panic – the global sell-off of mortgage-backed securities and

45. ‘Between the fourth quarter of 1981 and that of 2008, credit market debt in the U.S. mushroomed from 164 percent to 370 percent of GDP’ (Smith 2010, p. 9).

46. ‘Confidence’ must not only be restored in the ability of the system to generate adequate profits but also in its ability to ‘make good’ on the Anticipated Future Value (AFV) represented by a mountain of debt – now estimated at over \$40 trillion for the OECD countries alone.

other exotic debt-instruments sparked by the collapse of the Lehman Brothers investment bank.

Some radical political economists have argued, however, that, by the early 2000s, the average rate of profit in the US economy had been restored to much healthier levels – with the possible implication that reform of the ‘global financial architecture’ might be all that is needed to set the world-capitalist economy back on a reasonably stable path of robust growth. In our view, these commentators have underestimated the degree to which the heightened profitability of the period 2002–6 (and, to a somewhat lesser extent, much of the 1990s) was *anomalous* and critically dependent on an explosion of fictitious capital and profits associated with an orgy of unrestrained ‘financial innovation’ and double-dealing.⁴⁷

Our limited purpose in this section is to briefly survey some of the findings and arguments of those Marxists who have conducted empirical research on the rate of profit in the US economy in recent years. While few of these researchers have attempted to provide direct empirical data on the OCC or the rate of surplus value, their findings have often had a close bearing on these fundamental Marxian ratios.

Fred Moseley

Moseley, a long-time proponent of the LTRPF, is prominent among those who argue that there was ‘a very substantial and probably almost complete recovery of the rate of profit in the United States’ in the period leading up to the crisis.⁴⁸ Moseley’s figures suggest that ‘the rate of profit is now approaching the peaks achieved in the 1960s’. Significantly, however, Moseley tempers his analysis with the important observation that his estimates ‘include a large and increasing percentage of profits from the financial sector... much of which will probably turn out to be fictitious’.

47. In line with our argument in the Introduction, it is worth emphasising that ‘fictitious capital’ and ‘fictitious profits’ can evince *varying degrees of fictitiousness*. To the extent that the specific weight of fictitious capital and profits in relation to total capital and profits increased significantly over the past thirty years, and especially in the 2002–6 period, this could only have skewed official data in such a way as to suggest a higher rate of profit and a lower organic composition of capital than was actually the case.

48. Moseley 2009.

Anwar Shaikh

Shaikh, another well-known proponent of the LTRPF, proposes an alternative way of assessing US profitability trends.⁴⁹ Like Moseley, Shaikh examines the *before-tax* rate of profit, registering his fidelity to the convention that treats tax revenues as a component of gross surplus value. However, unlike Moseley, Shaikh excludes the financial sector from his analysis, calculating a ‘rate of profit-of-enterprise’ (the difference between the interest rate and the rate of return on active investment) which ‘drives active investment’.⁵⁰ His rate of profit for US non-financial corporations is defined as the ratio of their profit ‘before interest and profit taxes’ to ‘the beginning of year current cost of their plant and equipment’.⁵¹ On this basis, Shaikh discloses a falling trend for the rate of profit from 1947 to 1983 and a very modestly rising trend from 1983 to 2010, with a steep fall in 2006–9 followed by a jump in early 2010. He then points to two main factors in arresting the decline in the rate of profit after 1983: ‘an unparalleled slowdown in real wage growth’ and ‘the extraordinary sustained fall in the interest rate which began at more or less the same time’.⁵² The first factor suggests a considerable increase in the rate of surplus value, as does his graph showing a continuously widening gap between hourly productivity gains and hourly real compensation after 1983.⁵³ However, Shaikh makes no attempt to assess the trend for the OCC.

Ergodan Bakir and Al Campbell

Bakir and Campbell report findings that are broadly similar to those of Shaikh. Their analysis focuses on ‘structural changes’ in capitalism resulting in an *after-tax* rate of profit that has been ‘lower in the neoliberal period than in the previous period’.⁵⁴ These changes are associated with an increased transfer of profits from the productive circuits of capital into financial circuits, with a simultaneous drop in the rate of capital accumulation – findings that refute ‘the neoliberal claim that increased finance has improved the conditions for accumulation’.⁵⁵ However, Bakir and Campbell provide no explanation either for the ‘increased finance’ of the neoliberal period or for the profitability crisis that preceded – and likely encouraged – the process of financialisation.

49. Shaikh 2010.

50. Shaikh 2010, p. 46.

51. Shaikh 2010, p. 48. We note that Shaikh does not attempt to justify his implicit notion that the before-tax rate of profit, rather than the after-tax rate, ‘drives active investment’.

52. Shaikh 2010, p. 50.

53. Shaikh 2010, p. 49.

54. Bakir and Campbell 2010, p. 324.

55. Bakir and Campbell 2010, p. 325.

Simon Mohun

Mohun's study is concerned with trends in 'aggregate capital productivity' in the US economy from 1964 to 2001 and their relationship to the rate of profit, the profit share of national income, and the rate of surplus value.⁵⁶ The major focus is on 'the ratio of labour productivity to capital intensity'.⁵⁷ Mohun takes seriously the distinction between productive and unproductive labour, and his findings are clearly relevant to an evaluation of 'capital intensity' (Marx's TCC) and, indirectly, the OCC.

Reporting a before-tax rate of profit that fell sharply between 1964 and 1982 and rose gradually from 1982 to 2001, Mohun affirms that the 1964–82 period 'has some elements of a classical period *à la Marx*', by which he means that 'capital productivity fell steeply because a rising TCC could only generate rising labour productivity at a lower rate (and the rate of surplus value was constant)'.⁵⁸ The rate of profit was driven down by both falling capital productivity and the rising wage-share of unproductive labour. These empirical findings seem broadly consistent with Marx's theoretical expectations as well as Smith's study of the Canadian economy.

In addition, Mohun finds that in the second period (1982–2001) the 'TCC was roughly constant, but labour productivity was rising so that real capital productivity rose sharply, driving up the rate of profit'.⁵⁹ This is in general accord with Smith's argument that, in response to the crisis of profitability, capital and the state effectively mobilised many of the counteracting tendencies to the LTRPF, among them various methods for increasing 'absolute surplus value' through the intensification and reorganisation of the labour process (such as speed-up, 'lean production' methods, etc.). Contrary to Mohun's implication, however, we think that this response was not at all inconsistent with Marx's theoretical expectations. What Mohun calls the 'exceptionalism' of the later period – characterised by 'sustained annual increases in labour productivity in the absence of capital deepening'⁶⁰ – was precisely what was needed to arrest the decline in the rate of profit during that conjuncture. In the 1980s, the only viable alternative strategy from the perspective of capital would have been to allow a massive devaluation of capital assets, risking a descent of the US and global economies into a severe depression at a time when the capitalist West was still facing down its Soviet adversary.

56. Mohun 2009.

57. Mohun 2009, p. 1025.

58. Mohun 2009, p. 1041.

59. Ibid.

60. Ibid.

Andrew Kliman (versus Michel Husson)

This last point brings us to a consideration of the work of Kliman,⁶¹ whose analysis supports the claims that ‘the long-term build-up of debt that led to the current crisis is in turn the result of a longstanding profitability problem’, and that ‘capital was not destroyed during the slumps of the 1970s and early 1980s to a degree sufficient to reverse the decline in the rate of profit’.⁶² The first claim is one with which we can agree, but the second should be approached with considerable caution. While we accept that, for a variety of reasons (the Cold War, the strength of organised labour during the 1970s and 1980s, etc.), the strategists of the social capital sought to avoid a slaughtering of capital values on a scale adequate to quickly restore a *dramatically higher* rate of profit, we believe that the evidence is overwhelming that the rate of profit was stabilised in the 1980s and began a *gradual* rise thereafter. This was accomplished by extracting greater surplus labour from productive workers through methods that did not require large increases in the TCC, the result being a considerable rise in the rate of surplus value.

While he denies the reality of an increase in the rate of surplus value, Kliman is able to do so, we think, only by entirely ignoring the distinction between productive and unproductive labour, treating tax revenues as either surplus value or variable capital, and failing to disaggregate after-tax wages and salaries into their variable-capital, surplus-value and constant-capital components.

To his credit, Kliman is critical of analysts such as Duménil and Lévy who have insisted that ‘the structural crisis is over’ and that poor accumulation rates can be blamed simply on neoliberal economic policies (a position that lends itself to reformist political prescriptions and one with which we are not in sympathy).⁶³ But his refusal to recognise the ‘exceptionalism’ of the post-1982 period cannot be justified by the implied claim that his analysis is *uniquely resistant* to the idea that the crisis is a ‘purely financial one’. Analytically, a ‘middle position’ between Duménil-Lévy on the one side and Kliman on the other is not only possible but scientifically indicated – and such a position is clearly occupied by proponents of a variety of political perspectives.

Kliman also makes much of his commitment to ‘historical-cost’ measures of the capital stock and therefore of the rate of profit, as opposed to the ‘current-cost’ measures that are much more commonly used by Marxists. We think it is useful to measure, analyse and compare both historical-cost and current-cost

61. Kliman 2010a, 2010b.

62. Kliman 2010b, p. 9.

63. Duménil and Lévy 2004.

rates of profit. At the same time, however, we agree with Husson that choosing between them ‘does not have enormous empirical implications’.⁶⁴

We also agree with Husson that Kliman’s claim that the wage share of national income in the US has remained essentially constant is badly compromised by his failure to recognise that a sizable and rising share of ‘wages and salaries’ in the national-income accounts is actually a disguised form of profit (surplus value): namely, the salaries of corporate executives. As Husson observes quite correctly: ‘It is enough to exclude one per cent of the highest wages to find a fall in the share of wages as marked in the U.S. as in Europe’.⁶⁵

IV. The rate of profit, the rate of surplus value and the OCC in the US economy, 1950–2007

In this section, we apply the theoretical perspectives outlined in Sections I and II to an empirical analysis of the US economy from 1950 to 2007. This case study represents the first attempt of which we are aware to ‘test’ Marx’s LTRPF for the US economy in a way consistent with a constant-capital specification of tax revenues and SNUL since Mage’s pioneering study of 1963. We hasten to add, however, that our results have a somewhat inconclusive character owing to numerous technical problems associated with the translation of official economic data into the Marxian value categories. This translation problem is especially evident in our calculations of surplus value (after-tax profits and elite salaries) and variable capital (after-tax wages of productive workers).

The National Income and Product Accounts (NIPA) tables published by the US Bureau of Economic Analysis (BEA) include no data for *after-tax* wages or *the corporate-officer share* of ‘wage and salary accruals’ (an income stream that properly belongs to surplus value), rendering the calculation of after-tax wages of productive workers (‘variable capital’ or V) problematic. Nor do these data sets allow us to easily discriminate between productive and unproductive labour, either within economic sectors/industries or between them.

In addressing these problems, we have been obliged to apply a crude ‘average tax rate on personal income’ in order to derive our estimates of variable capital (V). In addition, we have derived a rough estimate of corporate-officer compensation by defining the top one per cent of wage and salary earners as recipients of such compensation for every year from 1950 to 2007. This estimate, based on figures provided by Saez,⁶⁶ was subtracted from after-tax

64. Husson 2010, p. 2.

65. Husson 2010, p. 6.

66. Saez and Piketty 2011.

wage and salary incomes and added to after-tax corporate profits to obtain our measure of surplus value (S). Inasmuch as the proportion of total wage and salary accruals received by the top one per cent increased considerably between the 1960s and the 2000s, the growth of this (revenue) component of surplus value contributed to the upturn in the rate of profit over the past thirty years while doing little to improve the rate of capital accumulation.

In distinguishing between productive and unproductive labour, we have followed the classification system suggested by Shaikh-Tonak and Mohun,⁶⁷ defining as entirely unproductive the following divisions represented in the BEA/NIPA tables: wholesale trade, retail trade, finance, insurance and real estate, business services, legal services, miscellaneous professional services, other services, private households and general government. All other divisions, including construction, manufacturing, transportation and several service industries, were defined as *entirely* productive.⁶⁸ This compromise procedure – that is to say, the treatment of *all* labour employed by productive capital as productive – may skew our results for the rate of surplus value and the composition of capital to the extent that the ratio of supervisory to non-supervisory labour and, more generally, the ratio of unproductive to productive labour in these productive divisions vary over time. Nevertheless, we think it is reasonable to assume that the basic long-term *trends* revealed for these ratios would not be affected substantially by more exact measurements that captured such changing ratios within the productive divisions.

Notwithstanding these difficulties and compromises, our estimates should be of considerable interest to those who recognise the importance of empirically operationalising the productive-unproductive distinction in the analysis of the fundamental Marxian ratios, and particularly to those persuaded of the need

67. See Shaikh and Tonak 1994 and Mohun 2005.

68. Integrating estimates of the ratio of productive to unproductive labour in different sectors and industries is a notoriously difficult and arduous task. Clearly, the financial, insurance and real-estate (FIRE) sector is reasonably regarded as unproductive in Marxist terms, as are retail and wholesale trade, whose workers are involved essentially in ‘changing titles of ownership’ to commodities that have already been produced. But it is certainly true that many ‘personal service’ firms produce ‘useful effects’ that assume the commodity form and represent surplus value. At the same time, however, many workers employed by productive capital (from book-keepers and marketing specialists to supervisory personnel) are clearly not involved directly in producing commodities or surplus value and should therefore be treated as SNUL. Among the NIPA divisions producing ‘service commodities’ that we have defined as productive and as employing productive labour are hotels, personal services, auto repairs, motion pictures, amusement and recreational services, miscellaneous repair services, health services, educational services, and social services. This classification system represents an advance over the system used by Smith and Taylor 1996 and reported in Smith 1999 and 2010, which involved the treatment of *all* Canadian service divisions as entirely unproductive.

for a constant-capital specification of taxes and SNUL wages – a specification which effectively *removes* these flows from the calculation of the rate of profit, the rate of surplus value and the OCC.

A detailed account of our methods and sources for calculating the basic variables of this study is provided in Appendix A at the end of the article.

The main findings

The principal findings of our study can be summarised concisely and are presented in a series of charts below.

First, with respect to **the rate of profit** (ROP), the current-cost ROP and the historic-cost ROP both display a downward trend over the entire period from 1950 to 2007 (see Chart 1, which depicts the current-cost ROP). As expected, both ROPs fall rather dramatically between 1950 and the 1980s, but then begin to climb sharply from 1990 to 2007, the eve of the Great Recession.⁶⁹ Furthermore, a truly remarkable increase in both ROPs is observable following the recession of 2001. Indeed, each approaches a postwar peak (14.5% and 24%, respectively) in 2006.⁷⁰

That said, there are compelling grounds for regarding the strong performance of the ROP between 2002 and 2006 as *anomalous* and based to a considerable extent on ‘fictitious profits’ booked in the finance, insurance and real estate sectors, and perhaps also by many firms operating in the productive economy (as indicated in footnote 8). This suspicion is reinforced by the performance of Shaikh’s before-tax ‘non-financial’ ROP, which shows a steep rise between 2002 and 2006 but only to a peak of 12%, a level that remains about one-third below its postwar high in 1966.⁷¹ Our own *after-tax* non-financial ROP (presented in Chart 2 below) reaches a peak during this period of just under 7% in 2006, fully

69. The trend line for the current-cost rate of profit (S/C) between 1950 and 2007 falls slightly, while the historic-cost rate of profit (S/C₂) registers a marginally steeper decline. If we distinguish between two phases of this 57-year period, we find that in the first, longer phase (1950–82) the unstandardised regression coefficient for S/C is 0.002, a statistically significant result. In the second, shorter phase (1983–2007), this coefficient is 0.003.

70. Appendix B displays our results for the ROP and other ratios when ‘profits from the rest of the world’ are added to the domestic corporate profit estimates to obtain S. The charts indicate that these additional profits have a positive impact on the ROP trend line, and this is particularly so for the neoliberal period. The difficulty with simply adding these ‘repatriated’ profits to the numerator, however, is that the value of the capital stocks standing behind them in ‘the rest of the world’ should be added to the denominator of the revised ROP. We are unaware of any reliable data on such stocks.

71. Chart 2 displays our modified version of Shaikh’s ‘Profit-of-Enterprise’ ROP (Shaikh 2010, p. 48) – the rate of profit for US nonfinancial corporations measured as the ratio of *after-tax* profits to the beginning-of-year current cost of their plant and equipment.



Chart 1: The Rate of Profit, USA 1950–2007 (S/C)

half its postwar highs in 1950 and 1966. Moreover, the unprecedented growth in the mass of profits during this period was accompanied by rates of new capital formation that were unusually sluggish in the context of an allegedly booming economy,⁷² as well as by a relatively low taxation rate on corporate profits.⁷³ As investment in capital stocks stagnated, already-high levels of public and private debt soared under the combined impact of the costly Iraq War and the expanding housing bubble. And so, of course, did profits. The conclusion is obvious: the anomalously high mass and rate of profit of the 2002–6 period was made possible only by the accumulation of an enormous volume of debt obligations – that is to say, of fictitious capital understood as claims on future income.

The anomalous 2002–6 ROP was, then, both illusory and unsustainable. The ROP was bound to fall dramatically, and this was duly accomplished over 2007–9. With higher profits in 2009–10, the ROP returned to a level closer to its long-term trend line. Overall corporate revenues remained low, however, suggesting that enterprise cost-cutting (and some devaluation of capital stock) was responsible for the improved profit rate. The NIPA estimates for after-tax domestic corporate profits of \$614 billion in 2008 and \$710 billion in 2009 stood well below the record \$1.09 trillion registered in 2006. A sharp spike to an estimated \$1.04 trillion in 2010, however, suggested continuing volatility in the mass of profits, the ratio of financial to non-financial profits and the average ROP.⁷⁴ Indeed, this spike was due in good part to the remarkable recovery of

72. See Bakir and Campbell 2010.

73. See McIntyre and Nguyen 2004.

74. This estimate of after-tax domestic profits for 2010 was calculated from data provided in a Bureau of Economic Analysis News Release on corporate profits (to the third quarter of 2010) released on 22 December 2010.

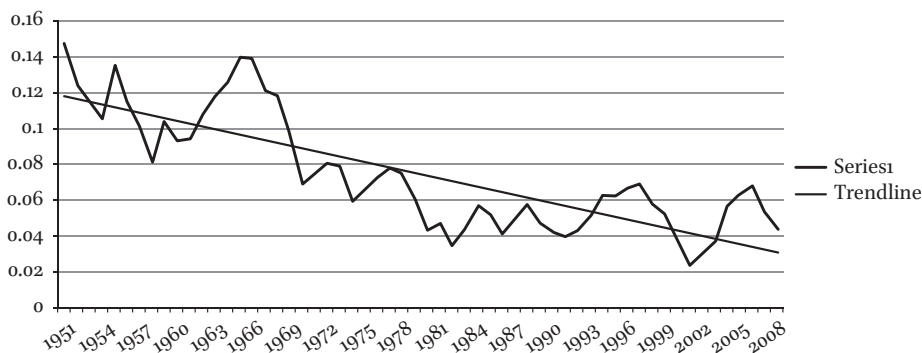


Chart 2: Non-Financial Corporate Rate of Profit (After-Tax), USA 1950–2007

financial profits made possible by the government-funded bailout of the big banks as well as the massive infusion of liquidity into the banking system by the US Federal Reserve at zero per cent interest.

Second, with respect to **the rate of surplus value (S/V)**, we find an overall increase in the trend line from 27 to 50% between 1950 and 2007 (see Chart 3). While S/V is essentially flat between 1950 and the 1970s, it falls after 1978, reaching its lowest point in 1986. It then embarks on a strongly upward trend between 1986 and 2007. These findings support the proposition that the decline in the ROP was arrested in good part due to a significant increase in the rate of exploitation of productive labour (S/V), with a long-term decline in corporate taxation playing a supplementary role. This increased exploitation, as we have seen, is reflected in the widening gap between the growth of labour productivity and the growth of hourly real wages, which itself must be explained in terms of changes in the labour process, on the one hand, and falling or stagnant real wages, on the other. Again, however, to the extent that it reflects a massive growth of fictitious financial profits, the sharp spike in S/V between 2002 and 2006 should be viewed as anomalous.⁷⁵

Finally, with respect to **the organic composition of capital (OCC)**, which is understood by Marx to be the *value expression* of the ratio of ‘dead to living labour in production’,⁷⁶ we find that the current-cost OCC displays a strong

75. The trend line for S/V is flat in the 1950–82 phase, but registers a strong, statistically significant rise in the 1983–2007 phase (its unstandardised regression coefficient in the latter phase is 0.016).

76. In Chapter 25 of *Capital, Volume I*, Marx writes: ‘I call the value composition of capital, in so far as it is determined by its technical composition and mirrors the changes in the latter, the *organic composition* of capital. Wherever I refer to the composition of capital, without further qualification, its organic composition is always understood.’ (Marx 1976, p. 762, emphasis added.) For the OCC to mirror changes in the TCC in value terms, it needs to be conceived as the value ratio of ‘the mass of the means of production employed’ to ‘the mass of labour necessary for their

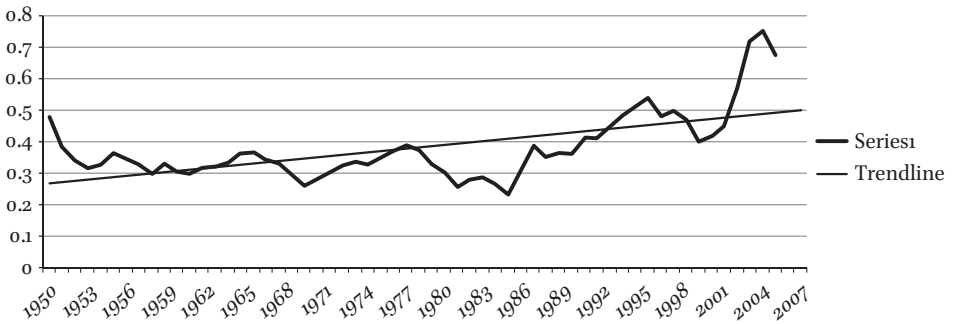


Chart 3: The Rate of Surplus Value, USA 1950–2007 (S/V)

upward trend between 1950 and 2007, reaching a peak of 3.93 in 1982 compared to a postwar low-point of 2.18 in 1950 (see Chart 4). The upward trend for the historical-cost OCC is even more pronounced, with the latter reaching a peak of 2.43 in 2000 compared to 1.16 in 1950. Much of this increase occurred after the onset of the profitability crisis of the 1970s. However, the OCC exhibits a very gradual long-term declining trend between 1982 and 2007. The stabilisation of the OCC during this period (in a range that is nevertheless well above that of 1950–75) suggests that one of the underlying causes of the profitability malaise of the past thirty to forty years continues to assert itself. This conclusion is reinforced by the upward trends of both current-cost and historic-cost estimates of the **value composition of capital** (C/V), which effectively remove both actual and fictitious profits from the picture (see Chart 5 for the current-cost C/V).⁷⁷

The steep fall in the OCC in the early 2000s coincides with comparably steep rises in the ROP and S/V. We think that this fall is associated with the proliferation of fictitious capital and profit, the super-profits realised by US ‘defence’ contractors following the invasions of Afghanistan and Iraq, and the anomalously slow pace of new capital formation during the Bush-era ‘boom’. With the mass of profits and wages falling after 2007, it is reasonable to think

employment’ – that is, as the value of the constant capital stock in relation to the total new value (s+v) produced by living labour. Means of production include circulating constant capital as well as fixed capital – but it is the tendency for the value of the fixed constant capital to rise in relation to the living labour performed that is the cornerstone of the LTRPF. Smith 1984 found that a calculation of the capital stock that included circulating constant capital did not produce *trends* for the rate of profit or the OCC between 1947 and 1980 in Canada that were different from one which included only fixed capital. In the present study of the US economy, as in Smith and Taylor 1996, only a fixed-capital measure of the capital stock was employed.

77. For the first (1950–82) phase the regression coefficients for the OCC and the VCC are 0.04 and 0.05 respectively, while for the second (1983–2007) phase it is 0.03 for the OCC. In the second phase, the VCC registers a flat trend.

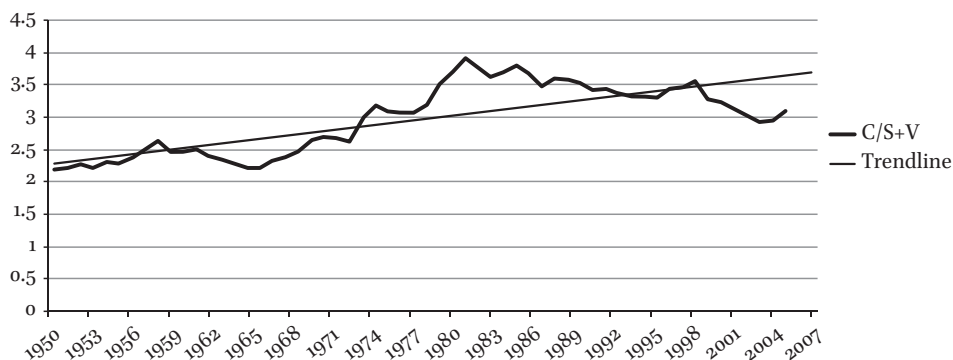


Chart 4: The Organic Composition of Capital, USA 1950–2007 (C/S+V)

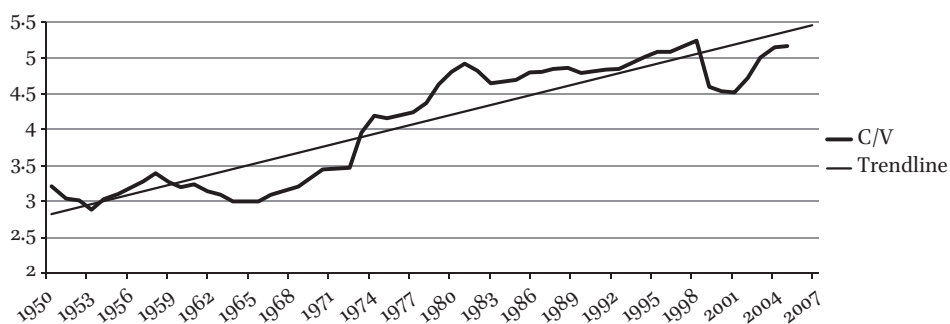


Chart 5: The Value Composition of Capital, USA 1950–2007 (C/V)

that the path of the OCC, like that of the ROP, may be returning to its historic trend-line, at least in the short term.

V. Concluding remarks

The results of this case study of the US economy lend considerable support to the thesis that the crisis of global capitalism that erupted in 2007–8 is due to the persistent profitability problems of productive capital, and that these problems are at the root of the ‘financialisation’ phenomenon and debt crises that are now destabilising the world system. Furthermore, our findings reinforce the argument that the global capitalist slump is unlikely to be overcome without much more savage attacks on labour by capital than those that characterised the pre-2008 neoliberal era, and without a quite significant devaluation of capital stocks involving widespread bankruptcies and persistently high levels of unemployment. In some significant measure, the super-profits reaped by Wall Street and European banks in the wake of the government bailouts of 2009 must also be seen as having been purchased through an increase in state

debt obligations, a form of fictitious capital. To stem this rising tide of debt, draconian austerity measures and increased levels of exploitation are now being imposed on the international working class.⁷⁸

Reports for 2010 and 2011 concerning profits, wages and the value of the capital stock in the US suggest that the period we are now entering marks a critical turning-point within (or beyond) the neoliberal era. Barring the eruption of serious working-class resistance and the emergence of a consciously anticapitalist labour movement, a major restructuring of capital values and class relations seems imminent – one that is likely to augur well for profitability (and perhaps capital accumulation) but that will produce devastating results for the working class of the developed capitalist world.

This new period – one which might be dubbed ‘neoliberalism with a vengeance’ – is clearly fraught with great perils, including the likelihood of intensified rivalry among the major economic powers, the rise of right-wing populism, and an accelerated assault on the rights and living standards that working people took for granted in the liberal-democratic West for decades after World War Two (and even well into the neoliberal era). The conclusion is unavoidable. Now, more than ever, socialists must declare boldly and without equivocation that the time has arrived to replace a socio-economic order geared toward generating profits for the few with a socialist system of production to meet the needs of the many.

Appendix A: Data sources and methods for Charts 1, 3, 4 and 5

Constant capital stock (C): Value of the Net Stock of Private Assets measured according to current-cost (C) and historic-cost (C2) criteria. C = current-cost net stock of private fixed assets, year-end estimates (BEA Fixed Assets, Table 6.1, line 2). C2 = historic-cost net stock of private assets, year-end estimates (BEA Fixed Assets, Table 6.3, line 2). Figures in spreadsheet for each year correspond to the historic-cost figure at the beginning of the year, i.e. the end of the prior year. (For example, the 1980 figure in the BEA table is our spreadsheet figure for 1981.)⁷⁹

78. After fluctuating between 69 and 76% between 1993 and 2005, the total financial liabilities of OECD governments as a percentage of the OECD's combined GDP rose rapidly between 2006 and 2011, from 74.5 to 102.4%. The total deficit for OECD countries saw a six-fold increase as a percentage of combined GDP between 2006 and 2010 (-1.3% to 7.7%). (OECD 2011.)

79. This is the procedure also followed by Kliman 2010b.

Surplus value (S): Corporate Profits after Tax, for Domestic Industries, taken from BEA NIPA Table 6.19 B, line 2 plus the after-tax earnings of the top 1% of the recipients of ‘wage and salary accruals’ = S. The proportion of earnings represented by the top 1% of wage and salary earners was obtained from Saez and Piketty 2011. Appendix B contains selected charts for the rate of profit, the rate of surplus value and the OCC calculated with total profits (Table 6.19 B, line 1) – that is to say, with ‘rest of the world’ profits included.

Variable capital (V): Total Wages and Salary Accruals (NIPA Table 6.3B, line 1) *minus* line 50 (wholesale trade), line 51 (retail trade), line 52 (finance, insurance and real estate), line 63 (business services), line 69 (legal services), line 74 (miscellaneous professional services/other services), line 75 (private household services) and lines 72 and 83 (general government services, federal, state and local) = before-tax wage bill of productive labour. V = before-tax wage bill of productive labour *minus* estimated tax deductions calculated by multiplying the ‘effective tax rate on income’ by the productive-labour wage bill. The effective tax rate was calculated as the ratio of personal current taxes (NIPA Table 3.1, line 3) to personal income (NIPA Table 2.1, line 1).

Appendix B: Alternative calculations of S/C, S/V and C/(S+V)

The Fundamental Ratios in Charts 1, 3, and 4 have been recalculated below by adding After-Tax Corporate Profits from the ‘Rest of the World’ (r) to total domestic profits (d). See footnote 70 for a discussion of the serious pitfalls associated with these measurements.



Chart 1 (a): The Rate of Profit, USA 1950–2007 (S^{d+r}/C)

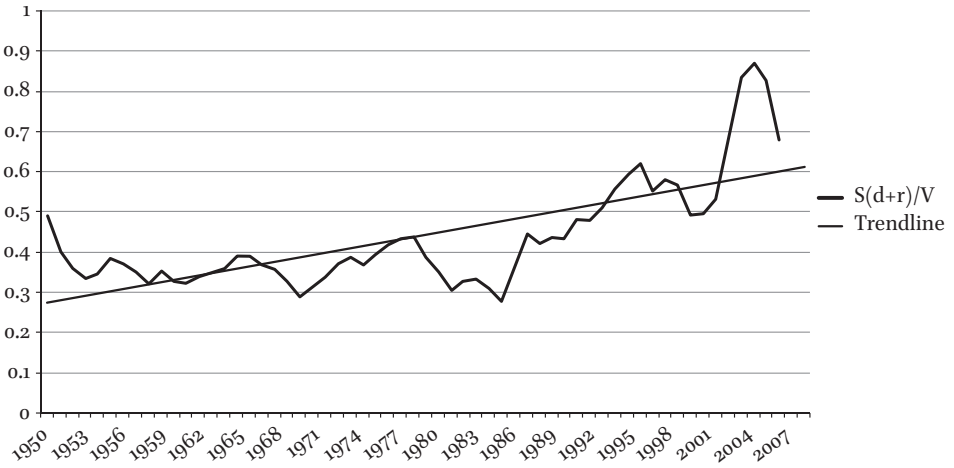


Chart 3 (a): The Rate of Surplus Value, USA 1950–2007 (S^{d+r}/V)

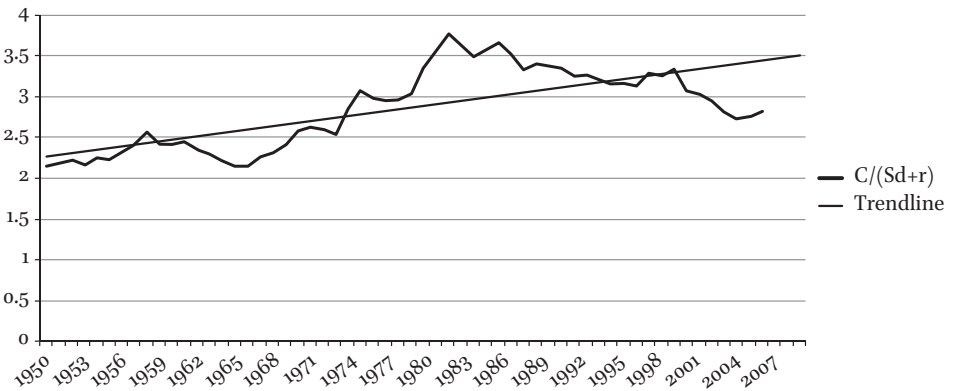


Chart 4 (a): The Organic Composition of Capital, USA 1950–2007 (C/S^{d+r})

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