AN AUDIT OF THE NEW RATE OF PROFIT.

The previous article titled: "Introducing a More Concrete Rate of Profit" was the first of a two-part series. In this linked article, an audit of the accuracy of this new rate is undertaken. Marxists like Paul Mattick Jnr maintain that capitalist data is indecipherable. Others like Guglielmo Carchedi, in his August 2015 article CRISES AND MARX'S LAW, misunderstands Marx's treatment of unproductive labour in the determination of that most concrete rate of profit – the enterprise rate of profit. Despite its faults, the SNA provides a record of the real economy, where the connection between the production of value and surplus value may be stretched, but is unbroken. The science of interpreting this data, lies in modifying our assumptions to account for these aberrations.

The issue of productive and unproductive labour is vexing. Productive labour refers to those workers producing value and surplus value. They are the workers whose labour power is purchased and whose resulting labour is sold as a commodity. The conversion of their labour power into social labour involves two distinct exchanges, and both must be present to constitute the capitalist social relation. The first begins with the purchase of the factors of production, especially labour power, needed to set production in motion. The second exchange results from the sale of the proceeds of that production. The relation begins with money going out and new money coming back in (containing the surplus).

Unproductive labour involves only one exchange - the purchase. It can take two forms. Firstly, functionally unproductive labour such as administrative staff, sales staff, payroll staff, or in other words, that category of worker generally found in offices or shops who account for and circulate the commodities that productive workers have produced elsewhere. The second and smaller group of workers are the servants of the capitalist class, either in the factories and offices – supervisors and managers – or outside the factories and offices - their personal servants, advisers and so on. The labour of these workers does not add to profits but detracts from profits, which is why Marx called them unproductive. They are unproductive of profits despite the majority being exploited.

Carchedi expresses it thus. "*Besides all these differences, the NIPA data make it impossible to compute 'real' profitability. They do not record tax evasion, nor the profits generated in mental production. They are unsuitable to compute the income of managers. Official statistics make no difference between those who perform the function of capital and those who perform the function of labour (and are thus labourers) even if they perform the work of co-ordination and unity of the labour process. Moreover, the great majority of those who perform the function of capital are not managers but members of the army of agents whose task is that of supervision, like the first line supervisors."* We will see that quite the contrary, real profitability, that is enterprise rates of profit includes these deductions. What would be unreal would be a rate of profit stripped of these deductions. Where Carchedi is correct, is our inability to separate out the financial profits made by the treasuries of the larger cash rich corporations (through financial investments and speculation) from the industrial profits they make.

A thorough reading of Parts IV and V of Volume 3 shows that Marx and Engels had a different approach to the treatment of unproductive labour. "The other costs are reducible to variable capital that is advanced for commercial employees." (page 402 Penguin Edition chapter 17) Commercial workers, or those workers engaged in the circulation of commodities, not their production, are by and large unproductive. On page 408 Marx affirms that the cost of the outlay on commercial employees must be included as part of the commercial capital that enters into the equalisation of the rate of profit. On page 512, Part V, Marx and Engels go further, they insist that the salaries of top managers are also paid out of variable capital not enterprise profit. (Chapter 23, *Interest and Profit of Enterprise*.)

Chapter 23 is a most important chapter and one which lifts the confusion surrounding the Marxian treatment of unproductive labour. Engels as an accomplished businessman understood full well, that what determines investment is the enterprise rate of profit, and that profit, if it was to be meaningful, had to incorporate all the deductions that results in its yield. Accordingly, the rate of enterprise profit is real, not because it excludes unproductive labour, but because it includes it.

Of course, the greater the weight of unproductive labour relative to productive labour, the greater the deductions from the mass of profits, the lower the resulting rate of enterprise profit. This is the beauty of the new rate of profit, whose denominator is now fixed and circulating capital. Circulating capital captures the growth in unproductive labour and its movement, in a manner C+v cannot.

This needs elaboration. The reader is undoubtedly familiar with outsourcing. Most manufacturing corporations have outsourced a number of their functions, both front office and back office, such as accounting, I.T. services, payroll or marketing. Specialist firms both nationally and internationally have emerged and evolved to provide these functions. They have done so because they can provide these functions more cheaply than when they are undertaken in-house. These new providers are an expression, on the one hand, of the socialisation of these activities and, on the other, the continual drive by capitalism to reduce the cost of these functions which they recognise reduces their profits.

The problem with using C+v to prepare the rate of profit is that it does not capture this movement. In fact, it can give a false positive reading. Suppose that outsourcing has led to a 10% fall in the number of workers employed in manufacturing. This would reduce v by more or less the same amount, giving rise to a higher rate of profit, because total capital would be reduced by that amount. But total capital is not reduced by that amount. Manufacturing entities must now buy in these services to replace their lost workers. These services form intermediate sales provided by industries outside the manufacturing sector. Let us say that the cost of these additional intermediate sales is the equivalent of 80% of the 10% fall in v. This would mean that the capital expended has fallen not by 10% of v, but only by 2%.

This is captured by the new rate of profit because circulating capital incorporates all these intermediate sales. That is why this denominator is larger than that provided by C+v and why it therefore yields a lower rate of profit. As outsourcing has become more common, so this movement has affected C+v negatively and working capital positively. (1) Both cannot be right. Scientifically, the rate of profit based on fixed and circulating capital is more reflective of the real-world enterprise rate of profit than is C+v whose merits lie elsewhere and whose importance I do no devalue in any way.

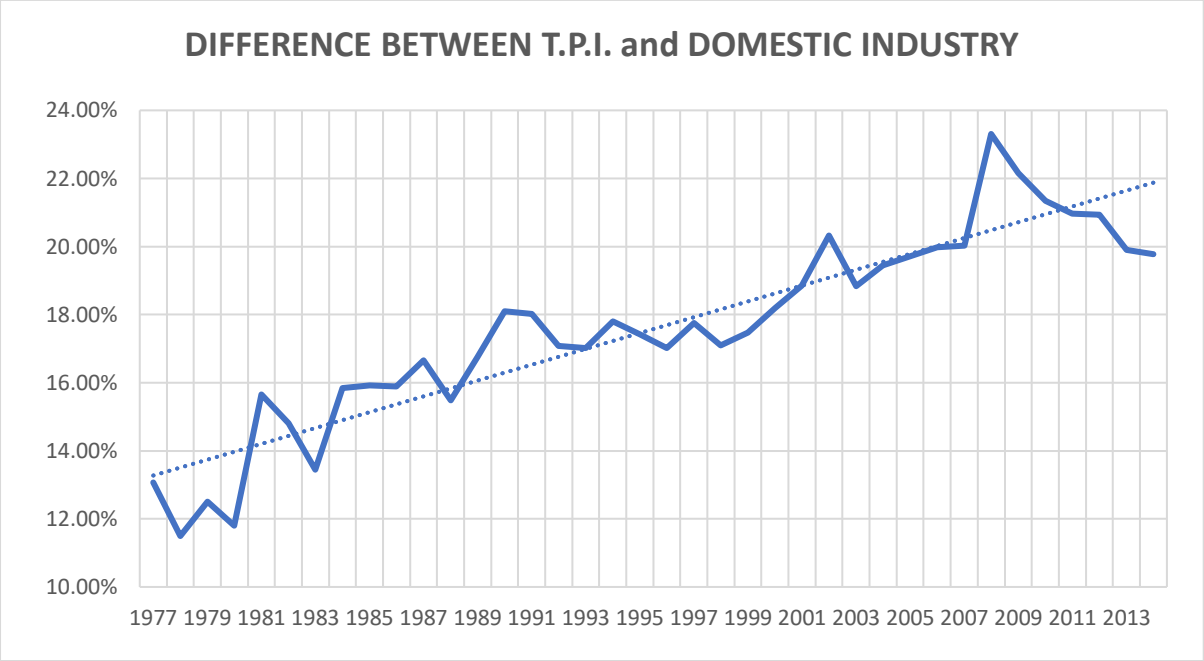
The problem with the SNA is not whether its unduplicated prices reflect real values within the series. Over the course of the business cycle they do. The problem is duplication, or more precisely the violation of the rule on which the SNA is built. This transgression occurs whenever intermediate sales are absent or when final sales are invented (imputed). Under these conditions recorded prices are inflated above total values. In my estimation, GDP or net value plus depreciation is inflated by between 20 and 25%. This does not mean that total prices in the actual economy exceed total values by 20 - 25%, and this is most important, it is because they are often recorded more than once.

It is for this reason we need to confine our analysis to those sectors of the economy where duplications are at a minimum. We cannot use whole economy figures or Total Private Industries (TPI). In Graph 1 below, which has appeared previously on this website, an illustration of the growth in duplicated value is identified. TPI is equal to Domestic industry plus “social services and membership organizations” plus the “household sector”. It is in these latter two sectors that duplication abounds.

The growth of TPI relative to Domestic Industry reflects both the rise in inequality and the concomitant reduction in state provision. It marks the increase in servants to the capitalist class as well as the rise

of charities looking after the working poor (while at the same time administering to their spiritual needs in these testing times). Since the 1980s TPI relative to Domestic Industries has grown by the equivalent of 8% of GDP and this 8% represents not a growth in value, but a growth in "production for use", together with duplication as imputed household rents have soared.

Graph 1.



(Sources: BEA Interactive Data, GDP-by-Industry, KLEMS, Composition of Output)

Nor can Domestic Industry be used to determine the rate of profit because it includes non-corporate business. This is not due as much to duplication, as it is to the treatment of the surplus in this sphere. All the income of partnership and sole proprietors is taken to be a surplus. This is problematic, especially with regard to sole proprietors, as many of them earn less than the average wage. Setting a rate of profit for non-corporate business yields a rate of profit more than double that of the corporate sector because of the miscasting of this surplus.

This leaves only the corporate sector within which the bulk of manufacturing resides. Even here duplication remains problematic with the inclusion of "industries" such as Finance and Real Estate which "contribute" 23.5% to gross value added compared to the 13.5% contributed by manufacturing (measured against TPI). Clearly this is a nonsense. Much of the value added by this "industry" is fictitious especially those activities described as *trading on own account* or trading on *client's account.* This is just speculation chasing its own tale, M.M[+] and not worth commenting on except to say it represents the squandering of an over-large portion of society's surplus and talent.

This leaves only selected industries where duplication is at a minimum. The largest of which is manufacturing to which we now turn our attention. In this article the rate of profit in all cases is:

$$\frac{\text{Pre-tax corporate profits}}{\text{Fixed + circulating capital}} = \textbf{enterprise rate of profit.}$$

Manufacturing is arguably the most researched of the industries compiled by the BEA. The predominant form of production here is value production and it is also the industry where intermediate sales are treated most comprehensively. It thus yields robust results even when the malign effect of the capitalisation of R&D and in-house software is considered. Those readers familiar with my writings know I have raged against the 2013 revisions which changed the treatment of R&D

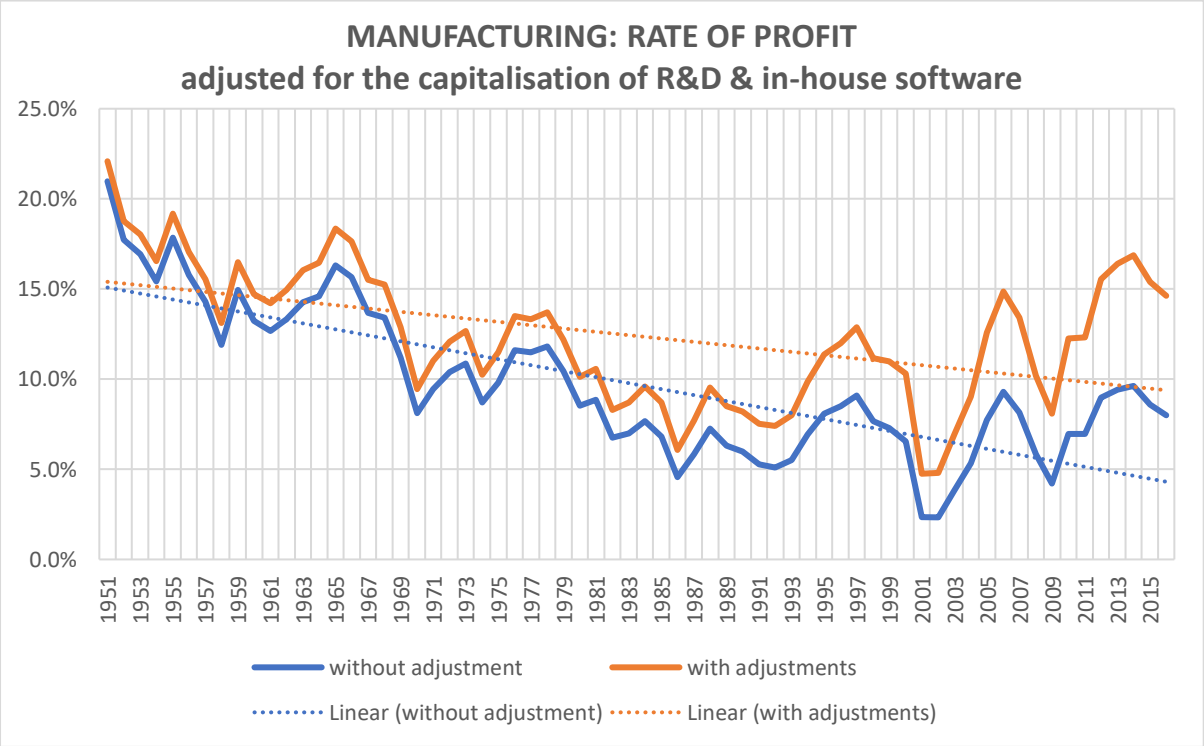
and in-house software. Today they make up the largest share of I.P. The BEA has justified this change by claiming we live in the information age and immaterial production. We could easily retort that this is not material. All periods of production contained their knowledge element. Instead what the BEA has enabled, is the avoidance of taxation by the multinationals, through the abuse of depreciation.

Removing the effect of the capitalisation of R&D and in-house software.

Fortunately, the BEA provides figures for both R&D and in-house software capital, enabling us to compensate for this revision. The first step is simply to remove these elements from the current cost of produced assets employed in manufacturing which forms fixed capital. This has the effect of reducing fixed capital by about 22% when using Table 2.1 (under Fixed Assets on the BEA website). This is two thirds of total Intellectual Property (I.P.), and I.P. in turn equals 33% of total fixed assets.

The treatment of the depreciation that flows from this capitalisation is less straightforward. This depreciation contains two elements. Firstly, the actual expenditure on R&D and in-house software each year which is a cost of production. Secondly, that element which represents patents or goodwill, and, which by guaranteeing a monopoly price can be written off each year as though it was a produced asset earning its own discreet income. As it is impossible to separate out the one from the other, the method used is as follows: The BEA provides the historical average age of R&D and in-house software "capital". In 2016 it was 4.5 years. Accordingly, this depreciation is reduced to a single year by dividing it by the average age. This should yield an approximation of the actual cost of R&D and in-house software expenditure for that year. This actual expenditure will be less than the depreciation figure which the BEA deducts from profits. Once the difference is added back, profits are increased. This yields a higher rate of profit, because the denominator, fixed capital has been reduced, and because, corporate profits will have been increased by the reduction in the amount of depreciation.

Graph 2.



(Sources: BEA Fixed Asset Table 4.1 for fixed capital at current cost, Table 4.7 for depreciation, Table 4.10 for average age of assets, Table 2.1 for adjustments. National Income & Product Tables 6.16B&C&D for pre-tax corporate profit.)

At the outset it must be noted that the **original graph** is based on unadjusted pre-tax corporate profits divided by fixed and circulating capital, and not C+v, where C stands for fixed capital plus inventories and v for variable capital. At no time is C+v used in this posting. Indeed, this posting should be read in conjunction with the previous posting: *"Introducing a More Concrete Rate of Profit."*.

There are three observations that are important. Firstly, we note that the two long-term downward trends differ. The unadjusted rate of profit falls faster and further than the rate adjusted for Intellectual Property (I.P.) capitalisation/depreciation. Secondly, over the last two decades, the rate of profit stages a more significant recovery with the 2014 peak approximating the peak in 1965. Finally, as expected, the two rates have diverged significantly over the last two decades due to the "epidemic" of information technology. The higher rate in 2014 was 16.9% while the lower rate was 11.5% or just over two thirds the level of the adjusted rate.

Is the adjusted rate a legitimate rate of enterprise profit? The answer is yes and no. Clearly the unadjusted rate of profit would be the headline figure. However, analysts do dig below the headline figure to determine the underlying health of the business. They tend to deduct EBITA from the pre-tax rate of profit to see how much cash the business is actually generating. For reference EBITA stands for "earnings before interest, taxes and amortisation (depreciation)" Graph 5 in this posting titled "RATE OF CASH FLOW", does something similar, but it excludes interest payments.

Adjusting for compensation of the top 1% of wage earners.

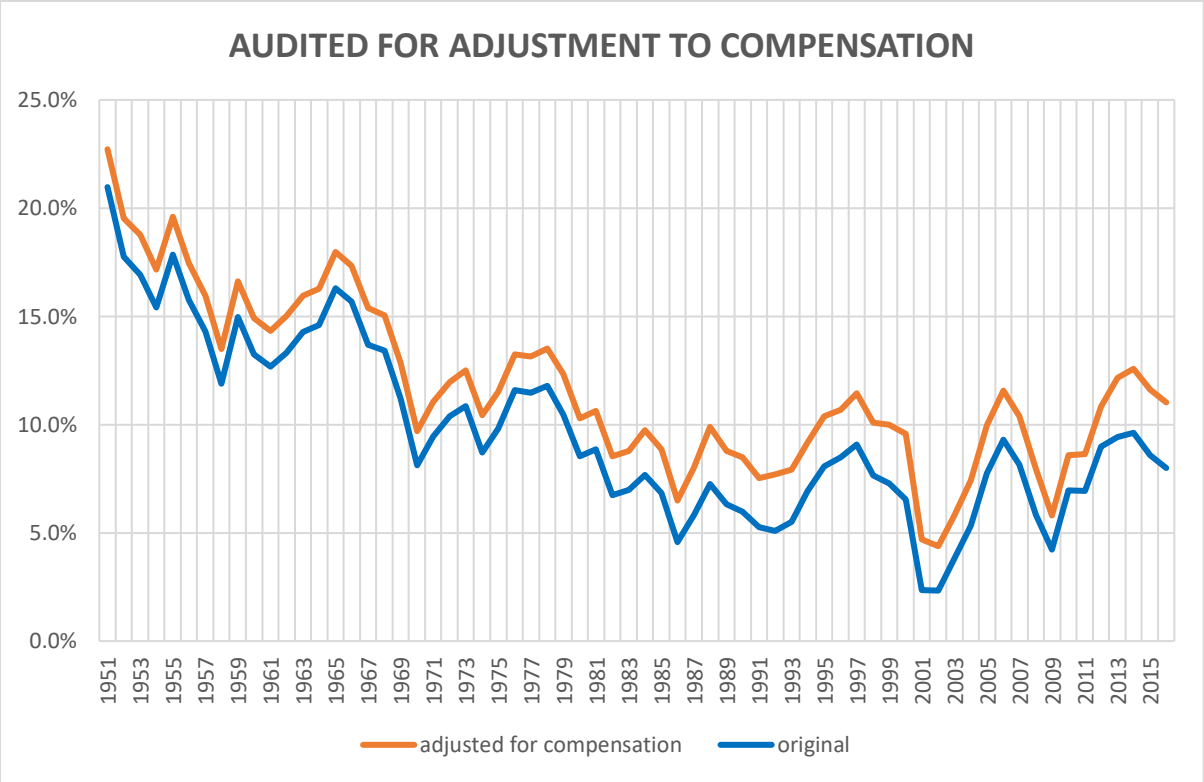
At the outset this adjustment is illegitimate. Marx and Engels made the point in Volume 3, that while changes to top managers remuneration significantly effects the rate of enterprise profit, this did not allow their income to be moved from the cost side to the profit side. My purpose for doing so is different. Marx never included this element of pay in his list of counter-vailing factors effecting the rate of profit. However, it is clear, that should a significant industrial recession occur which reduces corporate profits, then shareholders will undoubtedly claw back some of this increase in income.

This increase is significant. In 1962, when Saez and Zucman began their series, the share of compensation of the top 1%, as a proportion of total wage compensation, was only 3.3%. By 2007, it has nearly tripled to 9.4%, and by 2015 it had recovered and risen to 11.4%. (3.3% is extrapolated for the period 1951 to 1962, and data for 2013-2016 is provided by the US Office of the Chief Actuary online at https://www.ssa.gov/cgi-bin/netcomp.cgi?year=2015). This 8.8% relative increase conforms to the latest paper produced by Saez, Zucman and Pikkety titled: DISTRIBUTIONAL NATIONAL ACCOUNTS: METHODS AND ESTIMATES FOR THE UNITED STATES Published 25 September 2017.

In numerical terms, the increase from 3.3% to 11.4%, amounts to $148.4 billion in 2016. This is equal to 56% of the post-tax enterprise profit of $267.2 earned that year (Table 6.19D). If the amount of remuneration paid to the top 1% was reduced by only one third, such that it now yielded only 7.6% or the same as in the late 1990s early 2000s, then post-tax enterprise profits would rise by around $50 billion or 19%, giving a significant lift to the enterprise rate of profit. That is why it should be included in the list of counter-vailing factors that could be engaged to offset the fall in the rate of profit. In the meantime, Graph 3 below, shows the effect on enterprise rates of profit of moving this income from the cost side to the profit side, which reduces v and increases s by the same amount.

Data for compensation is provided by BEA's Table 6.2B&C&D under National Income and Product. Changes to the top 1% from data provided by Saez & Zucman and the Office of the Chief Actuary of the United States.

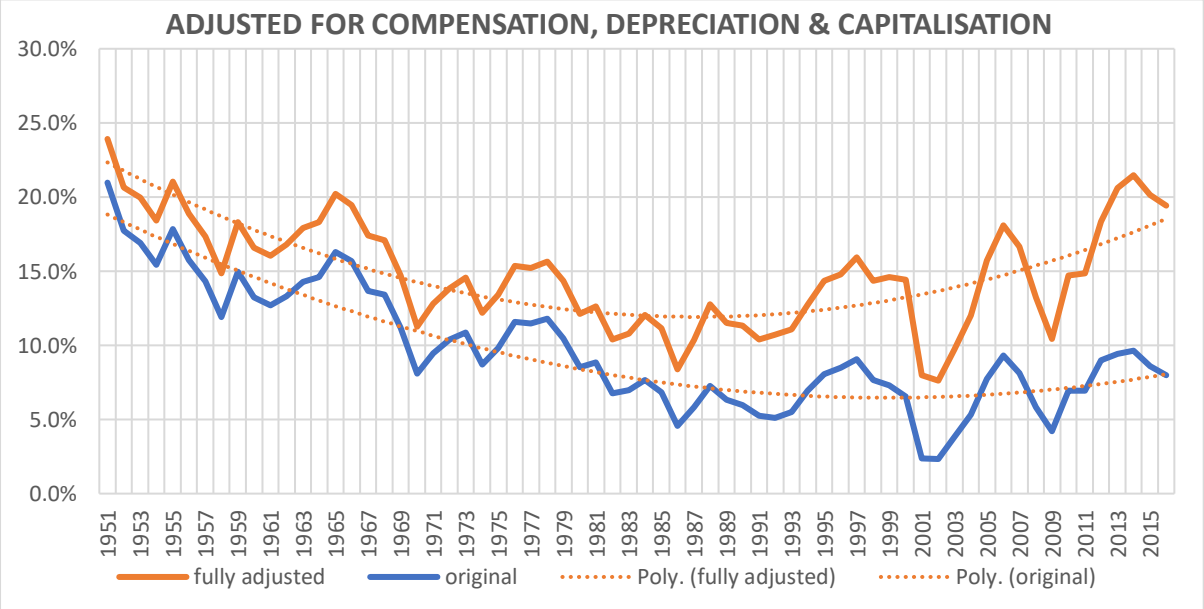
Graph 3.



The effect of adjusting for the income of the top 1% does not increase the rate of profit as significantly as does the adjustment for the capitalisation of R&D and in-house software. Nevertheless, it accentuates the improvement in the profit rate from the early 1990s such that each subsequent peak after 1996 clearly eclipses the previous peak more significantly than does the original rate of profit.

Finally, it is worth combining both adjustments to examine what the underlying rate of profit would be were the distortions resulting from the capitalisation of R&D and in-house software removed, and adjustments to the top 1% added back.

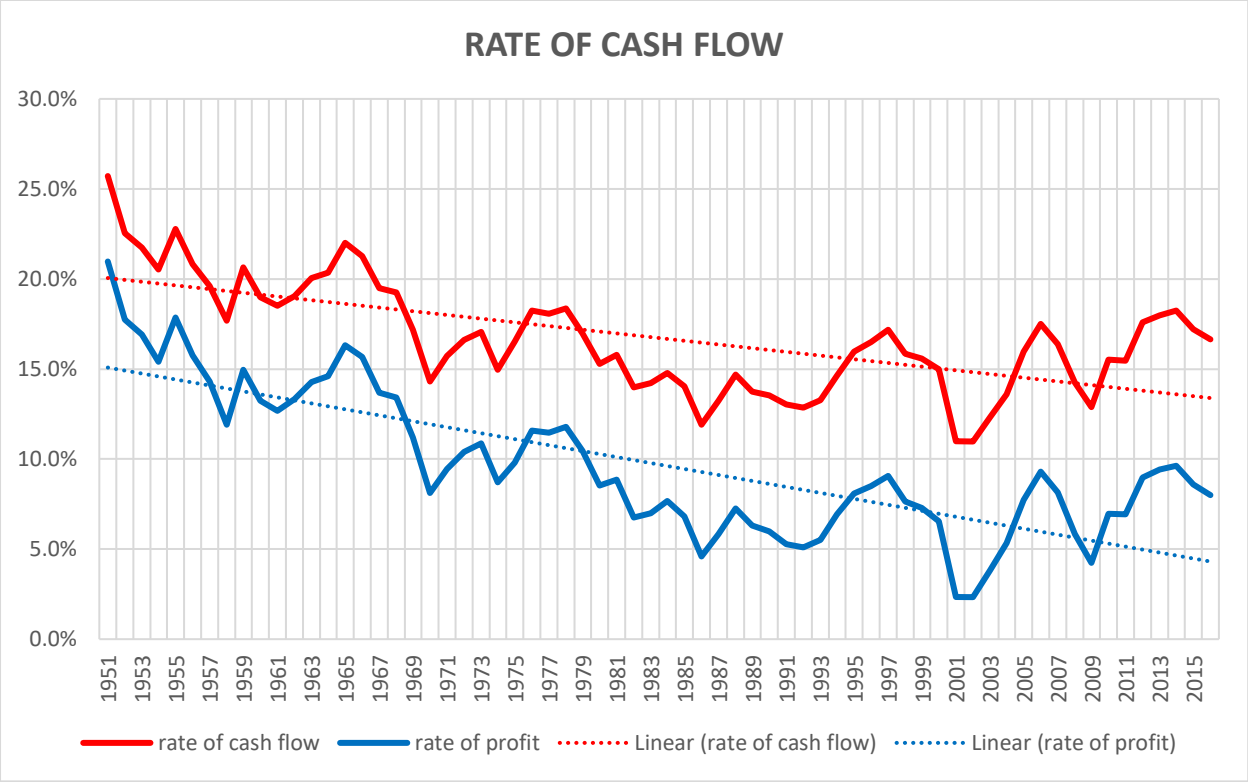
Graph 4.



In this case we find a sharp divergence between the two rates. The two adjustments result in a rate of profit that almost reverses most of the fall from the 1950s. In this case, the 2014 peak is greater than the famous 1965 peak. Does the adjusted graph matter? Yes, in the sense that it explains the phenomena we have witnessed this century in the USA, and yes because it reflects the actual surpluses generated by US corporations, both of which will be discussed under **Conclusion.** However, this insight should not be confused with the actual enterprise (corporate) rate of profit which continues to determine the direction of investment.

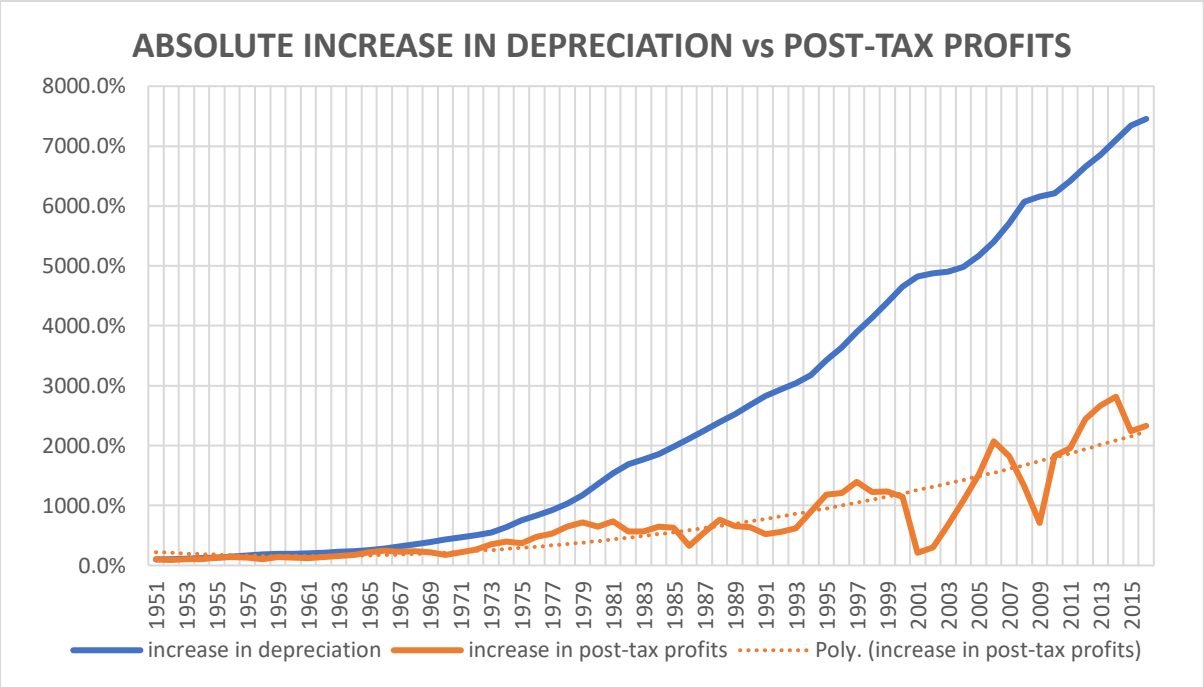
Earlier, attention was directed to those analysists who factor for EBITA in order to gauge the underlying health of corporations. Their purpose is to uncover the cash being generated by these corporations at an operating level. The same analysis takes place when we calculate the rate of cash flow. The rate of cash flow is pre-tax profits plus depreciation divided by fixed and circulating capital. While this does not factor for interest payments, it does describe how much pre-tax cash these corporations are generating relative to the capital they invested in the form of fixed and circulating capital. To the degree that this is a rate rather than a mass of cash, it differs from the methodology employed by analysist using EBITA. The rate is meaningful, the mass is meaningless. The rate is described by Graph 5 below.

Graph 5.



These two graphs continue to vindicate Marx conclusions as to the effect of the rising technical composition of capital. Both corporate cash flow and profits fall in the long run when measured by the capital invested in their production. However, the rate of fall is different as the trend in cash flow falls by only one third while that of profit falls by two thirds. This difference in the trends is accounted for by the more rapid growth in depreciation compared to profits which is plotted below in Graph 6.

Graph 6.



(Sources: National Income & Product Tables 6.19 for post-tax profits. Fixed Asset Table 4.7 for depreciation.)

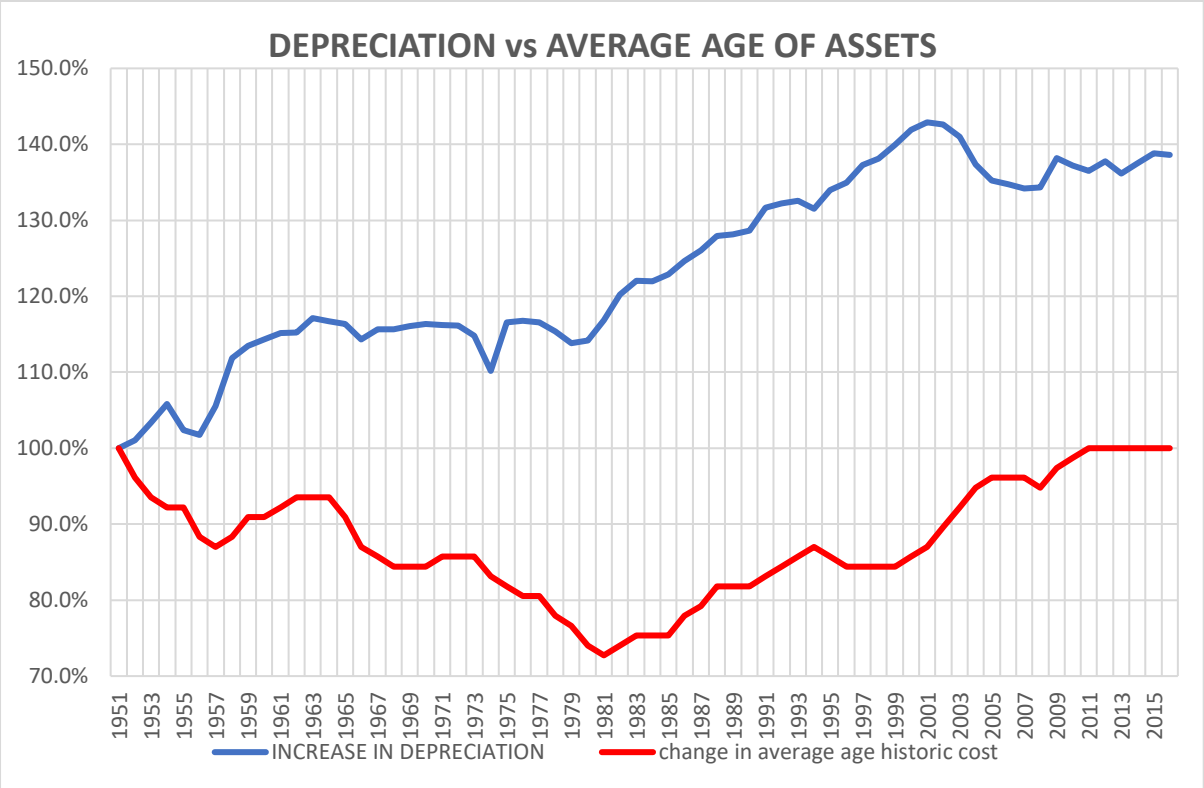
Indeed, it is the case today that depreciation contributes more to cash flow than does either pre- or post-tax profits. This event has gone more or less unnoticed in Marxist circles but it is an event of the highest magnitude. Today, the bulk of investment is paid out of depreciation, not profits. This frees profits from being invested so that it can be squandered on bonuses, dividends or share buy-backs.

It can be argued that the rising technical composition of capital makes inevitable the day when depreciation overtakes the production of profits, the day when dead labour eclipses living labour. This is indisputable. However, there is an element of depreciation within the overall figures that represents double counting. This is found primarily with I.P. depreciation. I.P depreciation has increased from under 20% of total depreciation at the start of the series to over 55% today despite I.P. capital only being 33% of the total. I.P depreciation now exceeds depreciation levied on structures and equipment due to so much investment being designated as IP and because of its shorter life span.

Can we isolate the inflated component in depreciation? One element supporting any increase, would be shorter working lives, which needs to be removed from our analysis. In Graph 7 below we examine whether changes in the average age of all produced assets employed in manufacturing can account for this elevated depreciation. Average age here is calculated on historical cost, not current cost, which is inaccurate. Table 4.10 provided by the BEA under Fixed Assets is used for average age.

Graph 7 is a complex graph. To simply plot depreciation against average age would be useless as this would yield no correlation. Instead the top graph, the blue line, is a compound graph, derived by dividing annual depreciation over the value of the assets on which that depreciation is based. As depreciation has risen 40% faster than the underlying value of the fixed assets which it depreciates, it yields an ascending graph.

Graph 7.



(Sources: BEA Fixed Asset Tables Table 4.4 for depreciation, Table 4.10 for average age historic cost.)

The rise in depreciation can be explained by average age only when the useful life of the assets being depreciated, shrinks. Such a correlation does exist between the years 1951 and 1981. Here there is a sharp reduction in average age and a consequent rise in depreciation.

However, with the advent of neo-liberalism and, later, the more rapid introduction of information technology, this correlation breaks down. Despite the shorter life of IP and its growing weight, overall average age increases. By 2010 average age is back to the level of 1951 but depreciation is now 40% higher. Assuming the BEA is accurately recording average ages, the only conclusion that can be drawn, is that a significant amount of double counting is going on. It means that both the seller and the buyer are depreciating the same asset.

This double counting is confirmed additionally by factoring in the capital to output ratio which rises three and a quarter fold (or less than half the amount of depreciation) and which expresses the rise in the value composition of capital. Whatever the denominator that depreciation is measured against, the same disparity both in time and in magnitude is found.

The effect on turnover.

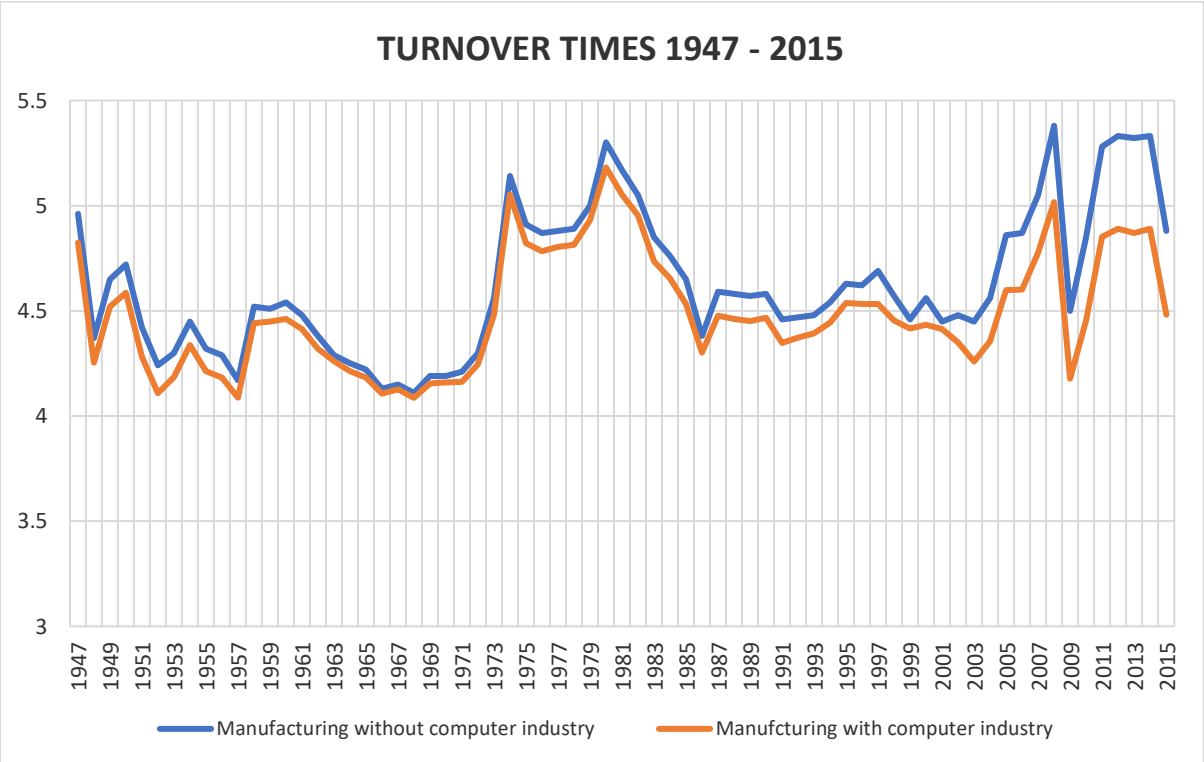
It is not only the mass of profits and capital that has been affected by the irregular capitalisation of Intellectual Property. It similarly affects the rate of turnover and therefore the calculation of the mass of circulating capital. The turnover formula is based on three variables. Gross Output (GO), Intermediate Sales (IS) and Gross Value Added (GVA). GVA + IS = GO or put another way, the value of the final sale + the value of the intermediate sales = the value of total sales within an industry. The greater the number of intermediate sales, the greater the difference between GO and GVA.

When the BEA capitalised R&D and in-house software, bulking up I.P., they moved sales from the intermediate side to the final side. This involved subtracting from the intermediate side and adding to the final side by means of an imputed sale. Such a sale was completely mythical. It was as if the corporations were now buying back their own R&D and in-house software. The net result was that intermediate sales fell by the same amount that final sales increased. In that way balance was maintained leaving Gross Output unaffected. However, because GDP is based, not on gross output, but on final sales, GDP was inflated by between 3 and 4% by these imputed (invented) sales.

Turning back to the question of turnovers. Anything which keeps Gross Output constant, but which raises final sales, will slow down the rate of turnover artificially. A simple arithmetical example will demonstrate this. Let us assume that GO is $400 billion, intermediate sales are $300 billion and final sales are $100 billion. In this case the rate of turnover will be 7 (400/100+(400-100)/100). If we now move $50 billion of R&D from the intermediate side to the final side, the following will result. Gross output is unchanged at $400 billion but intermediate sales fall to $250 billion while final sales rise to $150 billion. This reduces the rate of turnover to 4.4, a significant fall (400/150+(400-150)/150).

We can now turn from an arithmetical example to a real-life example. The computer industry is one of the larger industries found within the manufacturing sector. In the final graph below, we examine manufacturing turnover with and without the computer industry. The computer industry is the only industry where annual turnovers have fallen year by year as a result of the 2013 revision. As the weight of the computer industry has risen, so its impact on the rest of manufacturing has become more noticeable. Without the computer industry manufacturing turnovers continue to rise peaking in 2008, but with it, they peak in 1980. By 2014 the difference between the two rates has expanded to 10%.

Graph 8.



(Sources: BEA Interactive Tables, GDP-by-Industry, Value Added and Gross Output series.)

This does not invalidate using the rate of turnover derived from the formula. Though the rate in absolute terms is confounded by IP capitalisation, its movement and the degree of its movement over

the course of the business or industrial cycle, is not. Top to bottom ratios remain consistent because all industries, including the computer industry are similarly affected by the generalised fall in turnovers. This means that the effect on the movement of business capital is proportionate, and it is this movement which yields the most vital information. In addition, the movement in the rate of turnover mirrors the movement in the rate of surplus value, making it indispensable to our understanding of the movement of profits itself.

It is of course possible to extract a more precise rate of turnover by recourse to the raw data found in the input-output tables on which the Gross Output and Gross Value Added series are based. This is an ideal subject for a PhD dissertation, one which I hope will be taken up by a more academic Marxist.

Conclusion and discussion.

The primary purpose of this paper is to show the importance of comparing like with like. Over the course of the 65 years from 1951 to 2016, society and industry have been restructured. Inequality has grown, the state has been diminished, globalisation extended and the techniques of production transformed. For these reasons the content of today's rate of profit is dissimilar to that of the 1950s. Contained within it has been the growth in income of the top 1% without which the fall in labour's share of total income would have been greater. Currently the growth in income of the top 1% is equal to two fifths of all post-tax corporate profits.

Secondly, information technology has not only made the globalisation of production possible and more profitable, but it has consolidated these profits by making the outsourcing of clerical and administrative functions more practical. Unproductive labour, because of outsourcing, would not be such a burden on profits, were it not for the effect of the top 1% of wage earners. It means the rate of profit based on C+v has become increasingly inaccurate because of the extent of outsourcing (1). Outsourcing cannot be ignored as it represents a genuine cost of production. Therefore, today, the use of fixed and circulating capital is a better measure for determining the rate of profit than is C+v which does not capture this movement.

Finally, over the years the costs of R&D and in-house software have multiplied as a share of total capital. Its capitalisation/depreciation has thus increasingly contaminated the rate of profit, especially over the last twenty years. To be a Marxist investigator of the economy, one has to be above all, concrete.

The rate of profit is not a set of figures. It sculpts society in its own image. The surface features of contemporary capitalism, since the advent of globalisation, cannot be explained by an insipid recovery in the underlying rate of profit. This does not make sense in a world where the industrial workforce has more than doubled and where the average international wage has plummeted.

Instead, by revealing the hidden locations where surplus value is to be found, the surface phenomena become explicable. Now the solvency of the larger corporations can be seen and with it their independence from bank capital (forcing banks into the volatile and less secure retail market). Now the low rates of interest are understood and with it the plague of speculation. Now the ability of senior management to gouge their shareholders makes sense. Altogether, these outcomes were only made possible by a more robust recovery in the underlying rate of profit which this article has identified.

Does that mean that capitalist economic conditions remain healthy? The answer is no. Globalisation has collided with the nation state and is unable to continue its convulsive march towards single markets and ultimately a single international market, which forms the pre-condition for another round of expanded investment. There is no evidence it will survive the normalisation of interest rates. Until

then it will be imperilled by bubble after bubble. There is no evidence that it can end its reliance on Chinese state financed infrastructural spending despite this spending being carried out by SOE's whose rate of return at 3% is lower than the rate of interest (*Inside Business Asia, Financial Times* 04/10/2017). Global Capitalism's high point, and the end of the last long wave of expansion, may still turn out to be 2014.

The turnover formula has given deep insight into the capitalist economy despite the flaws in the data it highlights. It has allowed us to distil variable capital and working capital using the SNA. It has provided us with a more accurate stethoscope to listen to the irregular heartbeat of capitalism and thereby to determine the health of our tormentor. By and large the fundamental insights provided by turnover have been identified and investigated over the last two years. This author will now concentrate on applying it to new data and countries, especially China, rather than further developing it, because it's development is now more or less complete.

Brian Green, October 2017.

(1) The same outsourcing which creates problems for the determination of the rate of profit based on C+v, creates problems for determining labour productivity. Outsourcing, applied to unproductive labour does not diminish the value added by a productive industry. What it does diminish is the number of workers over which that net value is spread and which is used to calculate labour productivity. If the net value of output does not change, but the number of employed workers within manufacturing falls, because of the outsourcing of unproductive functions, as it does, then productivity per worker or per hour will appear to increase in manufacturing. This should not be confused with an increase in real productivity, which is the measure of the physical increase in the volume of production executed by productive workers. It is for this reason I see merit in using Total Factor Productivity despite all its faults.