Review of *The Failure of Capitalist Production* by Andrew Kliman published 2012.

It is seldom that I commend a book whose conclusions I so thoroughly reject. It is well researched, wide ranging, well presented, often funny, owes fidelity to Marx's method and above all is thought provoking.

Like every other Marxian scholar, Kliman's efforts have a fundamental flaw. His calculations exclude circulating capital. On page 80 Kliman discusses "circulating capital" (sometimes called working capital) and shows the difference between annual wages and variable capital. He then goes on to say: "there is no way to know how much capital is advanced in order to hire a worker for a year." Ditto inventories. In 2012 this statement was correct. There was no way to reduce annualised figures to turnover figures because I discovered the turnover formula only in 2015. So, what could not be seen was ignored, despite the error this introduced.

This is not the problem. In common with other Marxists, Kliman reverts to using categories which differ from Marx's categories without qualifying the difference. For example, when using the "rate of profit" this is not qualified by saying it is overstated or that this rate is actually the surplus value composition of capital, that is s/c instead of s/(c+v) or s/(fc+cc) where fc stands for fixed capital and cc for circulating capital. On page 129 his "heuristic re-description" is a verbal play, lacking the necessary qualifications or description of error.

Until one can calculate an actual rate of profit, arguing over whether to use current cost or historical cost, seems irrelevant. This argument is analogues to a tug of war between two teams, each allowed to stand on only one leg. Under this impediment there would be no winner, as both teams would fall over long before any result could be achieved. I presume I belong to the physicalist side since I subscribe to current costing of fixed assets, but here the similarity ends. In my calculations the rate of turnover which yields circulating capital is never excluded. Therefore, the rate of exploitation is never confused with the rate of surplus value, nor annual wage-compensation with variable capital, nor the rate of return with the rate of profit.

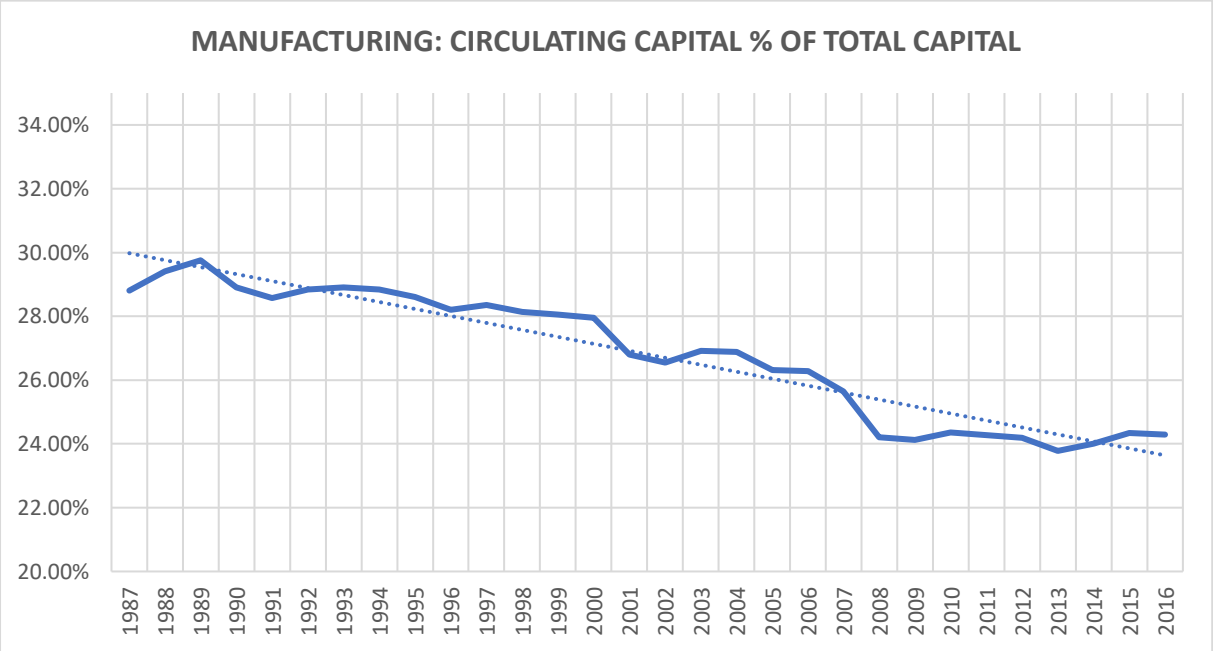
The importance of adding circulating capital to fixed capital in order to obtain the total capital is demonstrated by the two graphs below. Graph 2 in particular shows the absolute difference in size. It can therefore be expected that the rate of profit, examined later, will differ to that of the rate of return. (Technical Note 1 at end: how to calculate working capital)

The first graph shows the share of total capital represented by circulating capital. In the late 1980s it represents nearly 30% of total capital. Hence the rate of return's denominator is understated by this amount in the 1980s. Over the next thirty years the share of total capital attributed to circulating capital declines by about a fifth to under 25%. This is in conformity with Marx's prediction that fixed capital rises faster than circulating capital over time, though there are exceptions to this, such as retail especially ecommerce.

The second observation which will be examined later is the dips in the ratio which corresponds to the recessions of 1990, 2001 and 2008. It shows that circulating capital is much more responsive to recessions than is fixed capital. Indeed, if fixed capital is the explosive, then circulating capital is the detonator. Changes to circulating capital always precedes changes to fixed capital. My fixed asset table is based on the end of the year figure. Kliman makes a valid point. He uses the preceding year end figure as the current year figure. Ideally, the best solution would be to take a mid-year figure. This can

be done by averaging both the preceding end year figure and the current end year figure. I intend to rework the graphs on this basis shortly to determine the effect on the rate of profit.

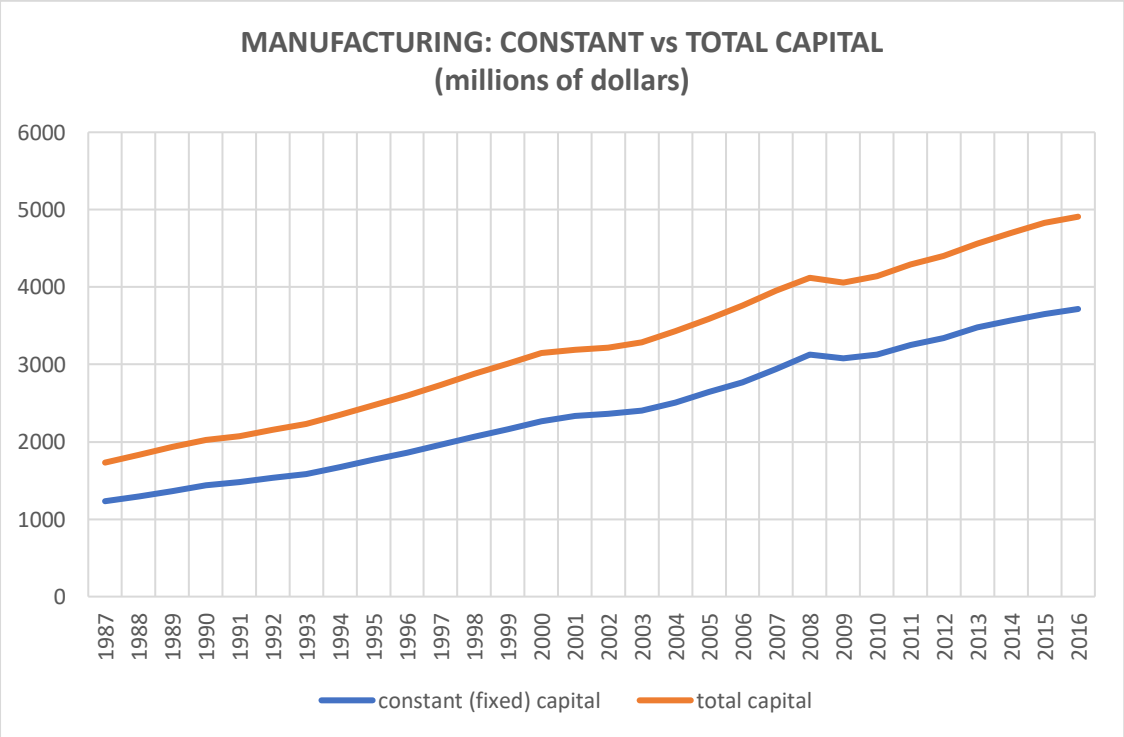
Graph 1.



(Source: see link for excel sheet under the link to this article in the post on the website. File: GRAPHS produced assets 1951 - 2016)

The reasons for the relative decrease in the weight of circulating capital will be discussed shortly. Graph 2 shows the absolute difference between the two sets of capital.

Graph 2.

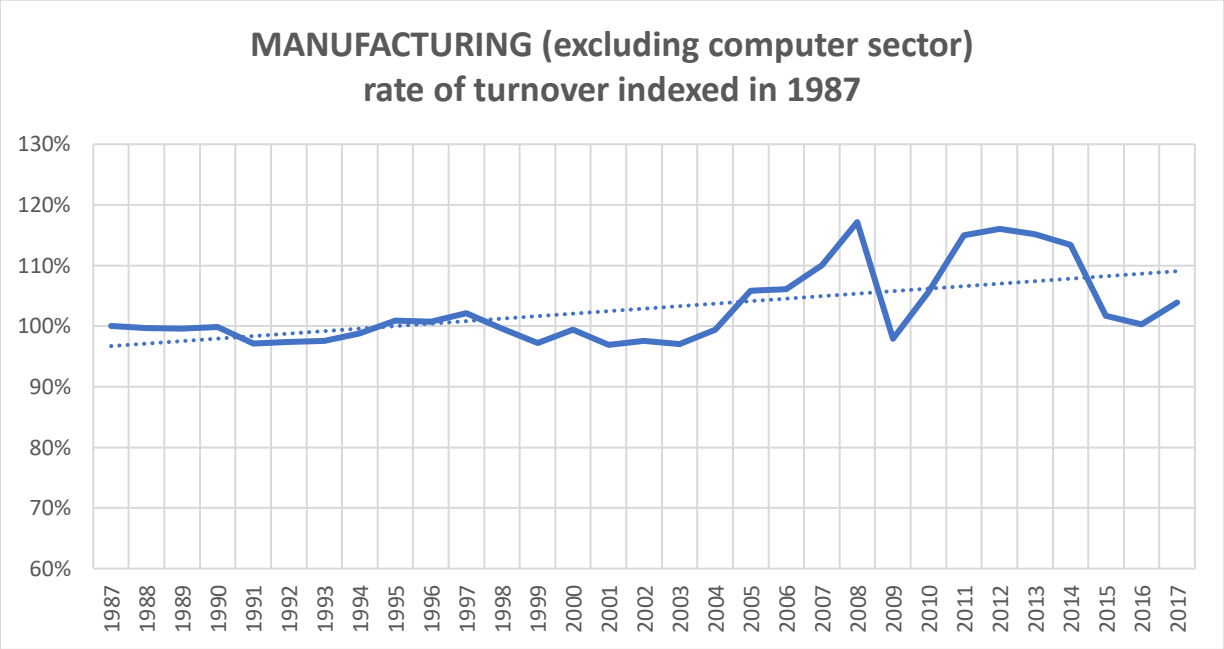


(File: GRAPHS produced assets 1951 – 2016)

There are two reasons for the faster growth in fixed capital. Firstly, and obviously, more capital is invested in fixed capital than is invested in circulating capital. That is the technical nature of production. Secondly, but less obviously, is the acceleration in the circuit of capital or what is the same thing, the reduction in the period M.....M^{+} or P.....P. Kliman is aware of this phenomenon. In his example he cites a rate of turnover of 52 or one working week (365/52). If this reduces to a rate of 26 then the circulation time goes up to two working weeks. If the capitalist employs the same number of workers and wages don't change, then everything else being equal, he or she will require twice as much working capital. At the same time the amount of value produced will not change, hence the ratio of working capital to output would have increased depressing the rate of profit.

In Graph 3, I have plotted the acceleration in the rate of annual turnover in manufacturing. The annual increase when averaged out, is about one third of a percent. (See Technical Note 2 at end for formula.)

Graph 3.



(Source: see second excel link. File: GO 1947 – 2017

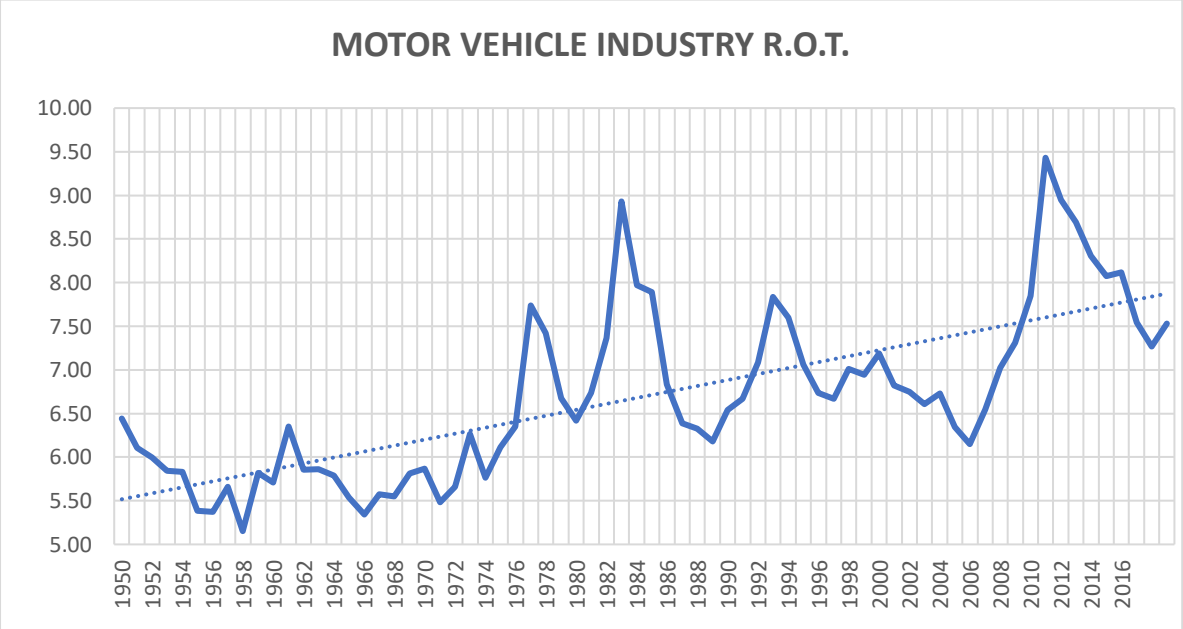
The computer sector has been excluded. Kliman is correct and eloquent on the issue of modern technological obsolescence and its effect on moral depreciation (page 138). The only addition I have on this issue, which affects the rate of profit above and below the line, is that it is one off. Once the "new normal" depreciation is in place, it affects the rate of profit equally in subsequent years unless the rate of depreciation accelerates again. Hence what is distorted in terms of comparison, is comparing the rate of profit from the mid- 1980s onwards (the information-age new normal) to the rate preceding it. However, in comparing the rate of profit from 1987, as has been done above, the preriod covered by the BEA's new series, moral depreciation is a constant and not a variable.

What did change after Kliman wrote his book, and which accelerated depreciation further, is that the BEA decided to capitalise R&D and in-house software. Together they comprise up to two thirds of IP investment and depreciation. This has not only bumped up GDP by 3% because of the conversion of intermediate sales into final sales, but it has further confounded comparisons between pre the information age and post the information age. This is the reason I excluded computers. Anything that substitutes intermediate sales for final sales or GVA, reduces the rate of turnover because it involves double counting. As IP is prevalent in the computer industry, I excluded it.

Turning to double counting not only by the BEA but within production itself. When intellectual property is capitalised, it allows the producer to depreciate it. Hence the producer not only depreciates the equipment used up producing this "asset" but the very asset itself. When this "asset" is sold, the buyer in turn depreciates it in the normal way when it is put into use. What the capitalisation of IP has enabled, is for both seller and buyer to depreciate the same element, the former as a wasting asset (patents, etc) and the latter as a newly bought asset because of wear and tear. And, even when it is not sold, and we recall that in order to capitalise much of IP, the BEA has to pretend R&D and in-house software is being sold, it can be depreciated in this fictitious way.

Turning away from the complications caused by these forms of depreciation, there is one industry that exemplifies the rise in turnover and that is the uncomplicated car industry. Graph 4 describes the upward gradient in the rate of turnover of this industry. I have excised 2009, as the figures for that year was distorted by the government's intervention in General Motors and Chrysler and it would have affected the long-term trend. This graph is introduced to remind the reader of the importance of turnover and the dangers of omitting it. In the 1950s, the period of circulation measured in days was about 66 (365/5.5) and sixty years later it had fallen to about 43 days (365/8.5). The car industry is notable for its changing structure. Car companies have been reduced to assemblers of cars. Many of the components they used to produce in-house are now bought in from other international suppliers. Hence intermediate sales (inputs) have increased relative to final sale and this is reflected in a higher turnover of capital because the period of production and circulation within the car industry itself is reduced. It also has led to a reduction in working capital.

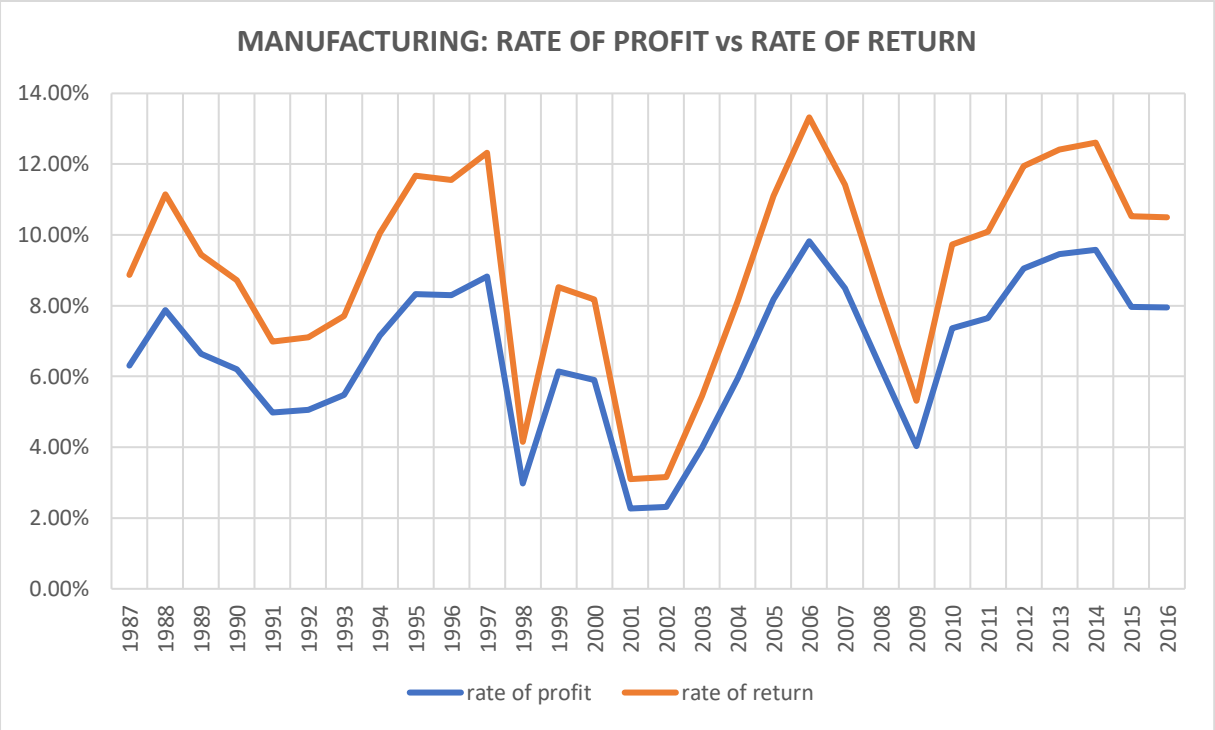
Graph 4.



(Excel G0 1947 – 2017)

Having understood the weight of circulating capital and the two primary reasons for the changing composition of total capital – turnover and investment in fixed assets – we can asses its effect on the all-important enterprise rate of profit (before tax). This is the rate of profit capitalists use when deciding if to invest and where to invest. It is not only a question of the trend in the rate, but whether the absolute level of the rate of profit exceeds the cost of capital. The average 2.5% difference could be the difference between a profitable investment or an unprofitable investment when taking into account the medium-term cost of capital. The variation between the two rates is evident in Graph 5.

Graph 5.



(file: GRAPHS produced assets 1951 – 2016)

There are two important observations. Firstly, the rate of return is always higher than the rate of profit, and secondly, the gap between the two changes depending on the phase of the industrial (business) cycle. It is at is greatest at the peak of the industrial cycle and it is most compressed during recessions. The changes at peak and trough are very important because it explains the counter-crisis role that changes to circulating capital plays. At the peak of the industrial cycle, when the economy is running hot or on overtime, there is an increase in circulating capital relative to fixed capital. This spike in total capital has a depressive effect on the rate of profit compared to fixed capital which is prone to a lesser degree of movement. Hence the faster growth in total capital relative to constant capital explains why the gap between the two opens up at the peak of the cycle.

Conversely, during the crisis there is a more abrupt contraction in circulating capital compared to fixed capital. Total capital falls relative to fixed capital because of the diminished weight of circulating capital. The result is a narrowing in the difference between the two rates. At the peak of the cycle the difference is about 3.5%, and in the crisis, around 1%. Put another way, from peak to trough, the rate of return moves about 2.5% more than does the rate of profit, or in relative terms by 35%.

The reader's attention is returned to graph 1 and to the oscillations found there. It will be noted that the oscillations form the classic U shapes which corresponds to periods of recession and the ending of the industrial (business) cycle. The change in the relative share of circulating capital shows it is more responsive to the industrial cycle than is fixed capital. (The blip in 1996 is purely due to an acceleration in the rate of turnover as globalisation kicked in.)

Despite their differences, both rates present the same trend. But it is the difference in their magnitude at the top and bottom of the cycle, that plays a role in determining whether it is profitable to invest or not.

THE CRUNCH QUESTION.

When combining fixed with circulating capital, historic cost cannot be used to measure total capital. Circulating capital is always current. Hence it would be incongruous to combine a historical figure with a current figure to obtain total capital. This would be a mish mash of historic and current prices.

On page 116, Kliman uses the example of seed and corn to explain why replacement cost cannot be used in the calculation of the rate of profit. He cites a farmer borrowing $40 million to buy seed at $5 dollars a bushel. This 8 million ton of seed will yield a harvest of 10 million ton. If this harvest was sold at $5 a bushel, then total revenue will be $50 million. Set against the original investment of $40 million the rate of profit would be 25% or $50 million less $40 million divided by $40 million. If, however, the price of corn falls to $4 before the harvest, total revenue will reduce to $40 million leaving no profit. Hence based on historical cost the rate of profit would be 0%. Kliman is correct.

What about profit measured against replacement cost or a forward-looking rate of profit? in this case the measurement is not against the original $40 million, but the future cost of £32 million needed to buy 8 million bushels of corn to plant. In this case the difference of $8 million, which remains in the hand of the farmer is a real $8 million and represents a profit of $8 million which the historical cost calculation does not account for.

This is the reason why Marx described many different circuits of capital. The historical cost calculations are synonymous with the regular circuit of capital or $M.C…P…C^{+}.M^{+}$ It is the measure of the money received from the sale vs the money paid out to fund production. The current cost calculations are synonymous with a second circuit of capital described by Marx in volume 2, Chapter 2, as the "Circuit of Productive Capital". This has a different starting point. He described the productive circuit thus: $P…C^{I} - M^{I} - C…P$. He uses this circuit to describe reproduction and with it the self-expansion of value. Both circuits are not only useful but essential to understanding the function of capital. As Marx says all circuits are circular and all circles can be interrupted at various points yielding different results. However, the larger the radius of the circle as measured in cycles, the more the results even out.

Returning to our example of the corn farmer. After purchasing this $32 million of corn with their $40 million, and assuming this $40 million is not a single year loan, the farmer would be left with $8 million. If the price remains at $4 a bushel, then the farmer will receive back $40 million after the second harvest, making a profit of $8 million or 25% based on historical cost. In this year the farmer will also make a profit of 25% on replacement cost because now the historical cost and replacement cost of capital are equal at $32 million. If the price of corn now reverts back to $5 dollars a bushel in the third year the farmer will receive back $50 million on an investment of $40 million, making a profit of $10 million. This will represent a rate of profit of 25% on historical cost ($40 million) and 25% on replacement cost ($40 million). Once again, no difference.

Setting aside the calculations of the annual rate of profit, let us look at the actual financial standing of the capitalist farmer after three years assuming (s)he does not have to repay the loan yet. In year one (s)he received $40 million having spent $40 million, in year 2 (s)he received $40 million having spent $32 million and in year 3 (s)he received back $50 million having spent $40 million. In total our farmer has paid out $112 million over three years and received back a total of $130 million leaving a net balance of $18 million in profit. The farmer's rate of profit over the three years is thus is 48.2% (18/37.33) the average capital invested per year or 16% each year on average.

Which formulation yields this rate of profit. In the case of historical cost, the rate of profit for year one was zero. It was 25% in year 2 and 25% in year 3. This yields a cumulative return of 50% which is near enough. What about replacement cost? In the case of replacement cost only two years need to be considered because it is a forward-looking calculation. The overlap between year one and two, and the overlap between year two and three. The first overlap yields 25% and the second 25%, the same cumulative total of 50%. Far from obtaining different rates of profit, the same rate of profit is found.

This is not surprising. But it is a conclusion that differs from that drawn by Kliman. The irony of course is that his reasoning is faultless just as mine is. If the loan had to be repaid after the first harvest, then of course the farmer would have no money unless the bank rolled the loan over. If on the other hand the bank decides to roll over only $32 million, then the farmer would have to use the entire $40 million at the end of year 2 (32 + 8 profit) to finance the following year to keep the physical harvest intact. This $40 million will yield a harvest worth $50 million in year 3. (S)he would be left with only $10 million which is the profit on year three but would only need to pay back $32 million. The same $18 million would result because the farmer has $50 million in hand.

The controversy between these two measures, is precipitated by the depreciation of money. If money was a constant, which it cannot be under capitalism, there would be no price inflation other than that caused by changes in actual costs of production. Aside from this the two rates would coincide. In order to determine the role of money, assume that all things are equal except the value of money which depreciates at the FED "happy" rate of 2%. Over the 10 years, neither employment, productivity, rate of exploitation nor the volume of output changes. Further the life of the assets are also 10 years meaning both depreciation and investment must take place at 10% p.a. to prevent alterations to physical quantities. All this is detailed in Table 1 below. The price index of 2% is compounded over ten years. To keep the example uncluttered, only two decimal places are used when needed.

Table 1.

year	1	2	3	4	5	6	7	8	9	10
(1) Price index	1	1.02	1.04	1.06	1.08	1.1	1.13	1.15	1.17	1.2
(2) Investment	50	51	52	53	54	55	56.5	57.5	58.5	60
(3) Depreciation	50	50.5	51	51.5	52	52.5	53	53.5	54.0	54.5
(4) Difference Line 2 – line 3	0	0.5	1	1.5	2	2.5	3.5	4	4.5	5.5
(5) Assets PIM	500	500.5	501.5	503	505	507.5	511	515	519.5	525
(6) Assets Replacement	500	510	520	530	540	550	565	575	585	600

Line 2 is the price of the gross investment in current prices. As the price of the original asset was 500, investment must occur at 10% p.a. or by 50 in year 1. Thus, adjusted for the price index, investment will increase from 50 in year 1 to 60 in year 10. Physically the volume of investment has not changed only its price. We are of course dealing with simple reproduction.

However, the PIM current cost valuation is different to the replacement valuation. The reason is to be found in line 3, the amount of straight line depreciation each year. It is increasingly falls below the level of investment despite both being 10% p.a. The reason is: whereas investment is in current dollars depreciation is over historic cost. As historic cost lags the rise in current cost, depreciation increasingly lags behind investment. If we take year 5, investment is 54 while depreciation is 52 or 10% of 520 the average of 500 +510 + 520 + 530 +540 or 2600/5. These 5 prices are found in line (6).

The difference between line (2) and (3) is the difference between the price of investment and the price of depreciation. Line (5) is Assets valued by the PIM method. It is arrived at by adding line 4 to the previous years cumulative balance. Hence in year three, 1 is derived from line (4) then added to the

balance brought forward from year two which was 500.5 yielding 501.5. Similarly, in year four, the balance of 1.5 is added to this new total making 503.0.

Line 6 is the replacement cost of these assets inflated by 20% because money has depreciated by 20% over these ten years. It stands at 600, significantly higher than the figure of 525 derived through using the PIM method. Immediately we recognise that current cost is not equal to replacement cost. Replacement cost is the cost of replacing all the assets as new. If these assets were to be destroyed and need to be replaced "as new", their insured loss would need to be 600 not 525. If it was 525 only 87.5% of the original assets would be replaced.

Current cost is not replacement cost because not all the assets are new, or, have their original ten years of economic life remaining. They have been devalued by use over these ten years. For example, the assets bought in year 1 have lost 90% of their value through wear and tear by year 10. No buyer will pay 600 for the existing assets knowing that the average age of these assets is around five years. This confusion between current cost and replacement cost is common. It is found in an excellent 2012 paper by Deepankar Basu in his 2012 paper: *Replacement versus Historical Cost Profit Rates: What is the difference? When does it matter?* Mr Basu interchanges the two terms.

Of course, this is not Kliman's method. As he explains first on page 86: "*Since the depreciation figures I use value depreciation at historical cost, when I deflate…net investment by the GDP price index…I in effect use the same deflator to deflate both gross investment and historical-cost depreciation."* (My underlining). We will return to Kliman's choice of the GDP deflator. In this case we move to a more complicated presentation of the issue, that based on expanded reproduction. The question that is posed will Kliman's methodology bring us closer or move us further from the market value? A more detailed discussion of market value is to be found after the tables.

Our first example was simple reproduction with no net investment. In physical terms the new investment only replaced the wear and tear on the existing assets. There was no additional investment only replacement investment meaning in physical terms, the volume of assets in year 10 amounted to the same as in year 1 despite their price differential. Hence, to evaluate Kliman's method investment is now raised from 50 to 70 in year 1 yielding an additional or net investment of 20 or +40%. This means that every year, total investment is 14% not 10% of 500. If depreciation is 10% but investment is 14% then the mass of assets will grow by 4% on average or 40% over the life of the assets. Replacement cost in year 10 will therefore be original assets plus 40% p.a. times the price index or 840. We have now entered the realm of expanded production. (See Technical Note 4.)

Table 2 below is based on this increased investment without any deflation of net investment and Table 2B it is based on Kliman's deflation of net investment. Table 2A, line 7, includes the deflation of the difference between gross investment and depreciation obtained from line 4 while line 8 is based on the deflation of net investment as a physical share of the total 20/70 = 28.6%.

Table 2A.

year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
(1) Price index	1	1.02	1.04	1.06	1.08	1.1	1.13	1.15	1.17	1.2
(2) Investment	70	71.4	72.8	74.2	75.6	77	79.1	80.5	81.9	84
(3) Depreciation	52	53.5	55.1	56.7	58.3	60	61.7	63.5	65.3	67.2
(4) Difference Line 2 – line 3	18	17.9	17.7	17.5	17.3	17	17.4	17	16.6	16.8
(5) Assets PIM	518	536	553.7	571.2	588.5	605.8	623.2	640.2	656.8	673.6
(6) Assets Replacement	518	550.8	582.4	614.8	648	682	723.2	759	795.6	840

Table 2B.

(7) Kliman inv. deduct.	0	-0.4	-0.7	-1.05	-1.4	-1.9	-2.0	-2.0	-1.9	-2.0
(8) Physical deflation	0	--0.4	-0.8	-1.27	-1.7	-2.4	-2.9	-3.45	4.0	-4.8
(9) difference line 4 – line 7	0	17.5	17.0	16.4	15.9	15.1	15.4	15	14.7	14.8
(10) Kliman Asset Value	520	537.3	554.3	570.7	586.6	601.7	617.1	632.1	646.8	661.6
(11) Physical adjustment	520	527.3	543.6	561	576.5	591.1	605.2	619.2	631.8	643.7

We therefore see that both the PIM and Kliman's adjustment of net investment are closer to each other than to the replacement cost. Of course, the larger the net investment and the higher the rate of inflation the more the PIM and Kliman's historical cost figures would depart.

Table 3.

year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Kliman Asset Value	520	537.3	554.3	570.7	586.6	601.7	617.1	632.1	646.8	661.6
Current PIM	518	536	553.7	571.2	588.5	605.8	623.2	640.2	656.8	673.6
Kliman/PIM	**1.0**	**1.0**	**1.0**	**0.99**	**0.99**	**0.99**	**0.99**	**0.98**	**0.98**	**0.98**

The effect of inflation is analysed particularly well by Deepankar Basu in his 2012 paper. He shows that depending on the rate of inflation, historical cost profit rates are dialled up more than in periods of low inflation. He uses the terms "counter-clockwise rotated or clockwise rotated. He shows that historical cost valuation of the rate of profit is always higher than that obtained by using the current cost. The only time this would be reversed deflation replaced inflation in the price of these assets in spite of the devaluation of money.

If current cost is not replacement cost, then what is it? Current cost is the weighted average value of the assets in any year. Weighted average is always the market value of a commodity or set of commodities, in this case the assets. In Marx's words, market value is the actual social value. Provided, the investment and depreciation figures in the National Accounts are accurate, then current cost is current market value. The current cost is net worth, which is market value.

Market value for me is the cornerstone of the labour theory of value. It is why I place such emphasis on Chapter 10 in Book 3 of Das Kapital. Not only should it have been presented before Chapter 9, but it should never have been eclipsed by Chapter 10. In time, when we construct an objective pricing system, its importance will be recognised.

Turning back to the tables. The current market value of 673.6 is 80% of the replacement value and is inside 1% of the value found at the mid-point between year 1 and year 10 equal to 679 (840 + 518 = 1358/2). See line 6. This is mere coincidence.. A 6% annual increase on the other hand will shift the current value away from mid-point and in the direction of year 10. However, what does not change, is that expanded production rather than simple reproduction tends to yield a current PIM value in year 10 which is 80% the size of replacement value. This applies to a 6% increment as much as to a 4%.

I reject Kliman's method. Why deflate the net investment when the rest of the investment inflates? After all the adjustment only relates to a small fraction of the whole investment. Moreover, it is a mismeasurement because it is not the deflation of the actual physical element which increases by 20/70 or 28.6%. Depreciation this physical increment, line (10) yields a result lower than Kliman's adjustment in line (9) based on net investment or gross domestic investment less depreciation.

In summation I use current costing of assets because it is closer to the market value of the assets than is historical cost. Market value is the weighted average for the series. If investment is stronger in the

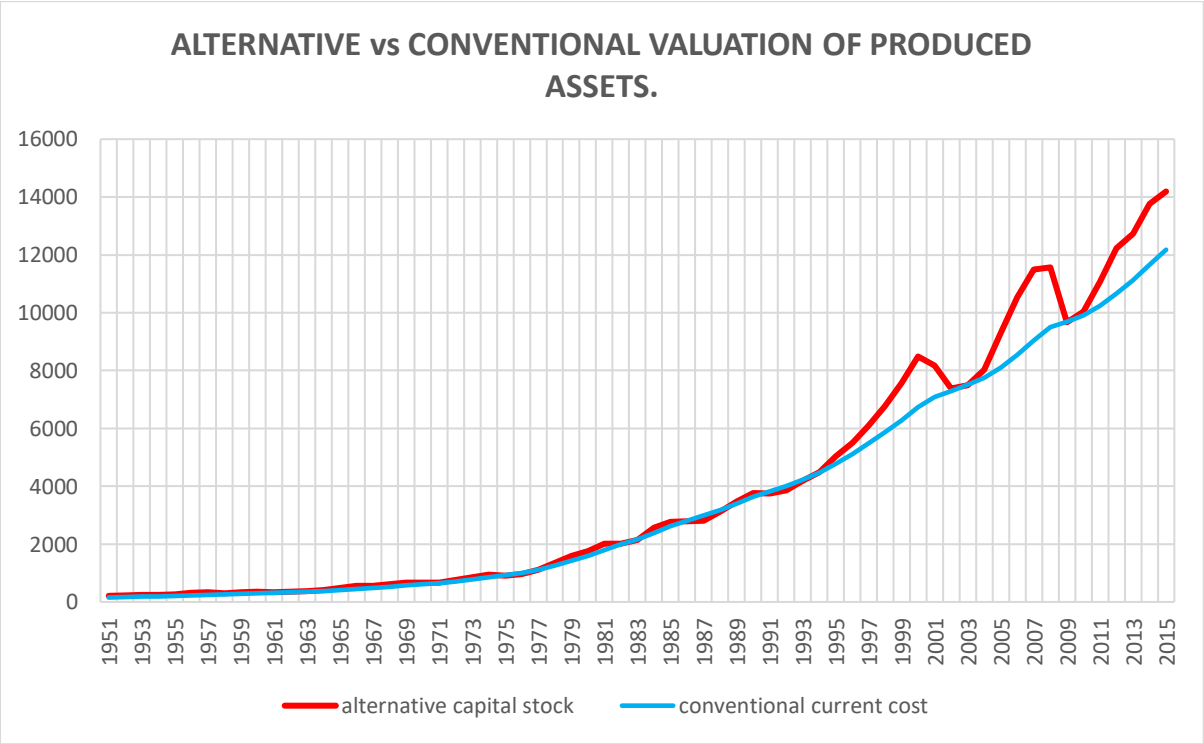
first five years than in the second, the weighted average would shift in the direction of year 1, and, if investment is stronger in the second half it would shift it towards year 10. The market value of fixed assets in turn corresponds to the market value of circulating capital. Circulating capital are assets and wages that are generally measured in months, or according to the BEA, they must have a life less than a year. Hence the price of circulating capital is current cost, which is equivalent to the current cost of the means of production adjusted for their useful life.

I am disinclined to use MELT calculations as they cannot cope with, nor incorporate, the transfers of values that occur between industries of differing compositions nor between countries. As I have pointed out in previous articles, up to 50% of the value produced within China up to 2008, was realised outside China. Much of it ended up in the USA. Thus, it is best to use price calculations as they exist.

My real concern about the mismeasurement of fixed assets has to do with the inflation of depreciation or what is the same thing, double counting. The incorporation of R&D and in-house software into IP capital together with the depreciation of IP by the seller (particularly in the form of patents) on top of the depreciation by the buyer has led to considerable double counting which has affected both profits and capital, although disproportionately, as Kliman has also pointed out.

The graph below shows the effect of this depreciation. For an explanation please visit the article in which this graph is to be found - https://theplanningmotive.com/2017/07/03/how-accurate-is-the-estimation-of-produced-assets/ From the mid-1990s, as expected, the alternative series shows a higher value for produced assets because it reduces the effect of over-inflated depreciation. Deflating depreciation re-inflates the value of the produced assets. Additionally, what is interesting, is the increased volatility of the alternative method compared to the "smoothed" conventional series. That it coincides with recessions is a reason for further investigating this alternative approach which shows a higher propensity for capital devaluation followed by revaluation.

Graph 6.



(Sources: BEA Table 4.7 for investment, 4.10 for average age, 4.3 for historical cost of produced assets. File: most accurate average age in link on website)

Of course, if the alternative method is more accurate then it will reduce the rate of profit, particularly from the mid-1990s. (see Note 3.) Their will thus be a moderation in the oscillation in the rate of profit. What the alternative graph may be showing is the actual devaluation if not the destruction of fixed capital during recessions.

In concluding this sub-section, tribute must be given to Leontief and Kuznets. They may have disavowed Marx, but they remained loyal to his methodology as found in Book 2 of Das Kapital. Many lesser intellectuals, purportedly Marxists, claim the SNA is meaningless. However, once the limitations of the National Accounts are understood, its data is robust and they provide a powerful insight into the workings of capitalism.

NOT JUST AN ACADEMIC DEBATE BUT A DEBATE WITH REAL WORLD CONSEQUENCES.

Kliman is correct to say the interpretation of the rate of profit has real world consequences. He finds that since the 1970s, the rate of profit has not recovered based on his adjusted historical cost denominator. This lack of recovery he uses to explain the growth of debt culminating in the financial crisis of 2008. Now there can be no doubt that debt has risen exponentially in the period covered by Kliman which gives credence to the argument that economic growth has been debt driven rather than profit driven. This may be true of China since 2008, but as we will see, it is not true of the USA.

Before proceeding there is another point to address. Kliman chooses the GDP deflator to deflate net investment in the corporate sphere both financial and non-financial. The GDP deflator is of course the only deflator by which to measure the devaluation of money. It is therefore the average deflator, a composite of all the individual deflators which vary across the economy.

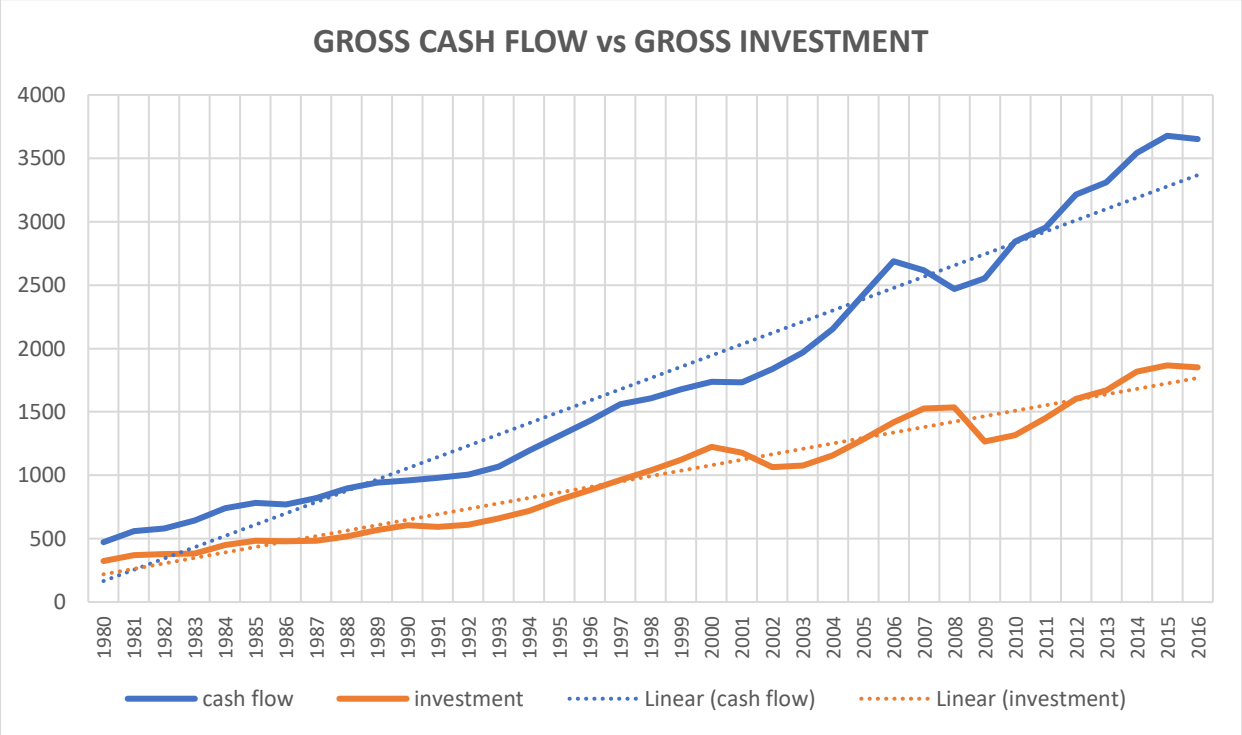
However, in a concrete sense, the GDP deflator is not necessarily a guide to price changes within the realm of fixed assets, whose output mainly derives from the Goods Producing Sector. Inflation in the goods producing sector has always been lower than the "bigger" service sector, especially given the impulse provided by household costs (rents) and healthcare costs. In contrast, current cost, being the market prices paid for assets in a specific year, embodies its own price movements. In many years, particularly from the mid-1990s, there have been actual falls in the market prices paid for many means of production in contrast to overall prices which have gone up because of inflation in services. This makes the use of the GDP deflator redundant and may account for the anomaly where his rate of profit has not recovered.

While we can argue about the rate of profit, the rate of cash flow is more emphatic. It shows a period of abundance. One of my favourite graphs is reproduced below. It plots the divergence between corporate gross cash flow and corporate gross fixed investment. As both these flows are current they can be measured concurrently. The gross cash flow figures are real and comprise depreciation plus pre-tax profits. It corresponds to EBITDA, a popular metric used by investors and analysts to investigate the underlying financial health of a business. In fact, while creative accounting can move post-tax profits it is more difficult to play around with cash flow. Cash either comes in or it goes out, and if cash flow is deteriorating while net profits are going up, this is always an indicator that in the near future, net profits will turn.

I tend to avoid using the National Account Saving and Investment Tables (Tables that begin with 5). In these Tables, savings is a balancing item, not an actual item. If investment goes up so too will savings, not the other way around. A twist to Say's Law. Low rates of investment are always associated with low rates of saving. Instead I use corporate savings which is the difference between the two flows in Graph 7 below.

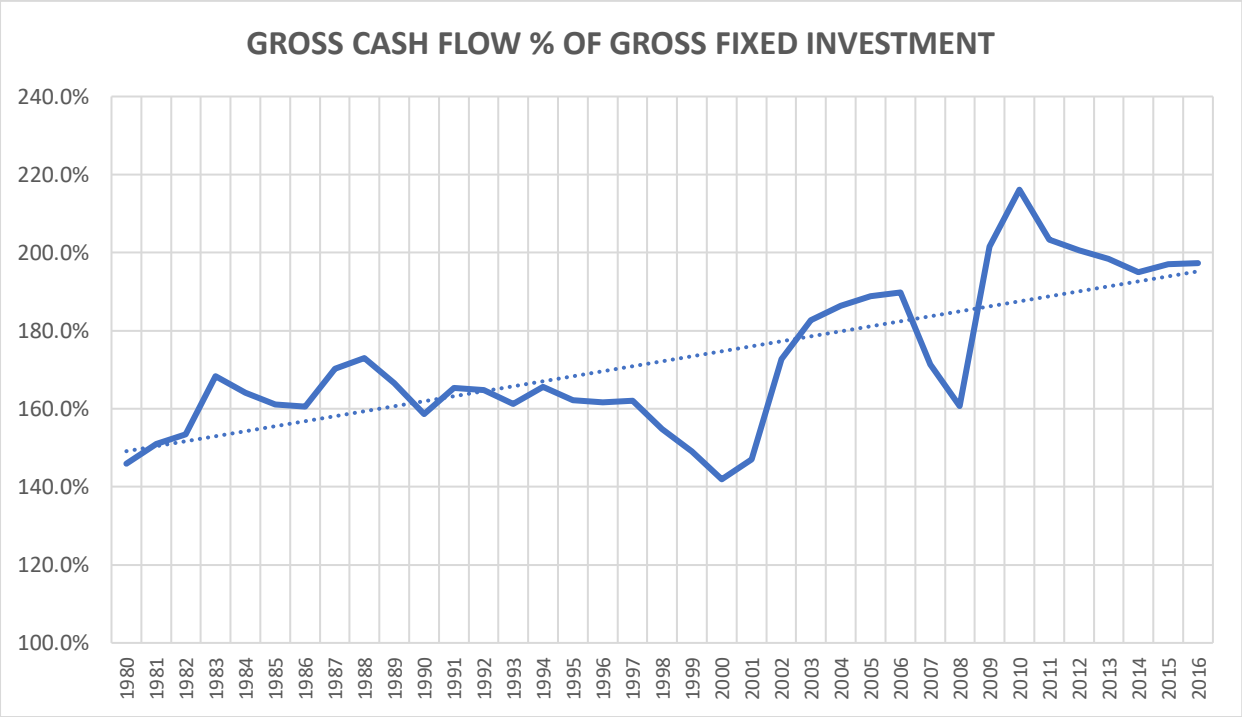
I would have preferred to use only non-financial corporate, but as Kliman used both financial and non-financial corporate, I have followed suite. In the case of non-financial corporations, the deviation is even greater.

Graph 7.



(Source: File Kliman article, corporate cash flow vs investment.

Graph 8.



(Source: File Kliman article, corporate cash flow vs investment.

In Graph 1 we note that the trends diverge. In absolute terms the trendlines indicate that cash flow is rising faster than investment. This conflicts with Kliman's data which shows that investment as a share of profits has been more or less constant. What therefore accounts for the difference. Only one factor - depreciation. The boost to corporate gross cash flow has come primarily from the faster growth in depreciation, not profits. Whether accelerating depreciation has captured value rightly belonging to profits is not important here, what is important is that acceleration has been swift enough to lift overall cash flow. I would also consider it an error to compare net investment to profits because net investment itself is the balance remaining after depreciation is deducted from gross fixed investment. If depreciation is overstated, then net investment will be understated. It is best to use the gross fixed investment figures or what is the same thing, the actual investment figure.

Whatever the case, the faster rise in cash flow both absolutely and relatively to investment is the opposite to what Kliman has declared. His assumption is that corporate liquidity has actually fallen when in fact it has risen. Of course, we are not ignoring the unevenness of this liquidity as most of it is concentrated in the ranks of the largest multi-nationals.

Which brings us to the nub of the question. The rate of interest. In effect the rate of interest will determine whether Kliman is correct or whether I am correct. If Kliman was correct, we could expect interest rate behaviour to be consistent with a state of illiquidity and indebtedness. Under these conditions, unless the law of demand and supply was put into stasis, interest rates should be relatively high. But It is a well-known fact that interest rates have been in "secular" decline since the 1980s. The opposite trendt to that found in a state of illiquidity.

The alternative explanation is that this fall in interest rates is primarily due to the influence of central banks. But as Marx pointed out, supported later by central bankers including Keynes: pushing money into the markets is like pushing on a piece of string. Instead, a more coherent explanation and one in tune with Marx, was that the fall in interest rates was a function of growing liquidity in the multi-nationals. This meant they were less reliant on the banks for funds, hence demand for external money capital was reduced. From a surplus of 40% in 1980, the surplus jumped to 220% by 2010. The rise in the surplus is even more startling if we view non-financial corporations on their own.

There is a secondary proof. Interest rates will always be at their lowest when liquidity is at its highest (during the prosperous phase of the cycle) or when demand is at its lowest (following a recession). For the purposes of demonstrating this correlation Prime Rate is used as it is less susceptible to central bank rates and is more responsive to business conditions. In all cases using FRED Table MPRIME, there is a strong correlation. Peaks in liquidity or troughs in the cycle both have the lowest rate of interest. Furthermore, when liquidity increases fastest after the turn of the century, the prime rate falls nearly two thirds to 4% by July 2003. When liquidity recovers towards the end of 2009, prime rate falls once more to 3.25%. It only tips up in early 2017 because the fall in the mass of profits in the second half of 2014 has ended the period of prosperity and reduced liquidity from a peak of 220% to 197% by 2016 Graph 8). Yes, the action of the US FED at the end of 2015 did prevent the pseudo recession at this time from developing into a full-blown recession, because it helped damp down the rise in market interest rates by keeping its rate at +0.1%.

Marx was quite clear. Interest rates are set by demand and supply for funds, and, demand and supply is influenced by the business cycle. In the period of prosperity, before the economy over-expands, the demand for funds by industry falls as the rise in the mass of profits provides a source of internal funds. It also falls with the onset of recession when investment falls and financing needs subside after the emergency is over. In all cases, both the short-term and the smoothed longer-term interest rates are

consistent with a rise in prosperity, therefore liquidity, and, it does not correlate to a world economy where the rate of profit has not recovered.

Of course, this book covers the period only up to 2008, and was written in 2012. Subsequent to 2012 both the rate of profit and return went up an additional 25%. I have read subsequent pieces by Kliman but have not yet located any which revises his earlier assumptions based on more recent data.

Secondly, if the rate of profit was falling or had not recovered how do we explain the rapid rise in the wages and bonuses of senior management and Directors of Corporations. As incestuous as this club is, and it is, they could not have got away with this had the rate of profit not recovered. Kliman does not have to explain this phenomenon because he rejects it. He says, the rise is illusory because it is based on tax data. He rejects Emmanuel Saez and Gabriel Zucman's data for this reason. However, I have checked their data against that provided by the Chief Actuary of the United States which supports Saez's data. In 2013 the Actuarial figures covered compensation worth $6.5 trillion compared with corporate compensation of only $5.7 trillion (BEA National Income Table 1.14). It is thus very comprehensive. The latest figures covering 2016 can be found on this link, https://www.ssa.gov/cgi-bin/netcomp.cgi?year=2016

In conclusion.

Where I do agree with Kliman is on the question of austerity and under-consumptionism. I will keep my comments brief and limit it to austerity as the main purpose of the article was to criticise the TSSI approach to the rate of return on fixed capital. Kliman is correct to emphasise that the bailing out of the banks was the bailing out of the capitalist system. Had this not occurred, the financial paralysis experienced after the Lehman Brothers collapse, would have just been an appetiser.

He is also correct to say that austerity had to follow. The finances of the state had to be restored in order to protect the Dollar, no longer backed by gold. The dollar like all other currencies is only as good as the state finances that under-writes it. That is why Quantitative Easing, following the emergency, was based on the purchase of investment grade bonds. And that is why the government had to cut its spending to conserve on taxes. It worked because the working class remained passive and did not oppose the government's efforts to bail out the system at their expense.

All in all, this is an interesting book. However, Kliman's attachment to the TSSI means that his analysis of profitability is less proximate than would be the case using current priced assets and less proximate because he continues to exclude circulating capital. If his method was used to calibrate a thermometer, it would be insufficiently accurate to diagnose whether or not the patient was running a fever.

The emergence of the TSSI interpretation emerged out of a fundamental misunderstanding of market value and its relation to market prices. It is individual values that are transformed into market values and it is market values, not individual values, that are then transformed into prices of production. It is only the market value of a product, which when multiplied by its volume, yields the total labour time expended on it. And this applies to the economy as whole.

Far from Marx being wrong or inconsistent, it turns out Marx was even more right and even more consistent, and it was his critics like Ladislaus **von** Bortkiewicz who were wrong as I have shown (Note 5 for link). Marx did not need to be rescued by mathematicians or "Marxists" who felt he had made mistakes in his method. It was always likely that a scientific defence and elaboration of Marx's method would emerge not from within, but from without the hallowed halls of academia.

In summation, an intellectually stimulating and enjoyable read.

Technical Note 1. To arrive at working capital, gross output which is found in the GDP-by-industry tables is used. Gross output is equal to total sales within an industry, or the sum of intermediate sales plus final sales. In the language of Marx, it is equal to ci + v + s where ci stands for depreciation plus industrial inputs and v for worker compensation. The first step in obtaining working capital is to reduce ci + v + s to ci + v by removing s (net surplus as found in the industry accounts), s represents the unpaid portion of gross output, whereas working capital represents the paid part of gross output. By arriving annual s, we arrive at total annual working capital. This is of course larger than actual working capital or what is the same thing, single period working capital. To arrive at single period working capital, annual ci + v needs to be divided by the rate of turnover. Hence the formula is (ci+v)/to where to stands for rate of turnover. This formula can be proved by its obverse: (is + v) = (go – s) where is stands for intermediate sales. In other words, the sum of intermediate sales plus worker compensation is equal to gross output less surplus value. Working capital in the aggregate is best defined as the sum of inputs plus variable capital. It corresponds to $M.C…P…C^{+}.M^{+}$ where the first M purchases labour power and the industrial inputs like raw materials, auxiliary materials, components and power etc. needed for P or production.

Technical note 2. The formula for turnover is:

$$\frac{GO}{GV} = \frac{(GO-GV)}{GV}$$

where GO stands for Gross Output (total Sales) and GV for gross value added (value of final sale). The formula can also be written thus:

$$\frac{GO}{GV} = \frac{(GO-is)}{GV}$$

where is stands for intermediate sales. GO – GV describes the value of total sales less the value of the final sale which in turn is equal to the value of intermediate sales.

It is worth pointing out that Chinese Data, as well as empirical data validate the turnover formula by yielding similar results.

Note 3. In the article link cited above Graph 6 there is included a graph which shows the effect on the rate of profit using the alternative measure of fixed assets. This graph however is based on s/(c+v) and not my preferred measure which is s/(fc+cc) where fc stands for fixed capital and cc for circulating capital. Later this year when the BEA releases the current cost of produced assets for 2017 I intend to produce three three rates of profit based on fc + cc, the first will be based on current fixed assets at year end, the second will be current fixed assets at mid year and the final one will be based on adjusted assets up to 2017.

Note 4. Each year the 500 original asset grows by 4%. In year 1 this will yield 520 or 500 x 1.04. In year two the physical increase will be 4% + 4% or 8% meaning the assets have grown to 540 at historical cost. However over the year prices have risen by 2% hence the 540 must be increased by 2% thus: 540 x 1.02 = 550.8 or rounding up 551. In year five, the net physical increase is 5 x 4% = 20%. At historical cost this means assets are priced at 600 or 500 x 1.2. However cumulative inflation of 8% means the replacement cost is 600 x 1.08 or 648.

To obtain the current PIM the first step is to obtain the difference between investment and deprec1ation for that year. This net figure, which can be understood as net investment at current prices, is added to the total PIM for the previous year.

Note 5. It is entirely possible to derive prices of production from market value and market value from prices of production by simply extending the method developed by Marx in Chapter 9 of Book 3. https://theplanningmotivedotcom.files.wordpress.com/2018/01/reversing-the-transformation-problem-corrected-pdf.pdf

Brian Green, July 2018