TOWARDS A UNIFIED THEORY OF THE CAUSES AND LIMITS TO THE INDUSTRIAL CYCLE.

Capitalism is society's first chaotic industrial society which by tending to recurring crises demonstrates its transitory nature. Marx was not the first to note the industrial cycle, it was well known to Smith and Ricard. Marx provided a primary and subsidiary explanation for these recurrences, but because this explanation was disjointed, it led those who followed him to adopt contradictory positions on why capitalism stumbled periodically. These explanations ranged from the tendency for the rate of profit to fall, to under-consumptionism and on to disproportionality. This paper will demonstrate that they all are part of the unified theory and the way they connect offers a full explanation why production, under the whip of profit, will always be convulsive.

Prior to the 1970s, explanations for the breakdown of capitalist production were predominantly based on lack of markets due to the depressed nature of wages (under-consumptionism) and/or disproportionality (means of production being produced more rapidly than articles of consumption). Only Rudolf Hilferding offered an ancillary explanation based on the slowing down of the overall rate of turnover which mistakenly included fixed capital. Simon Clarke has provided one of the best overviews of this debate in his flawed book *Marx's Theory of Crisis*.

It was only in the 1970s, that the most important law uncovered by Marx, *the tendential fall in the rate of profit,* came to prominence. This development could be explained by the emergence of the system of National Accounts (SNA) after the Second World War. It provided new insights into the world economy and it did so over a considerable period of time allowing trends to be detected. The SNA provided the opportunity to calculate a crude rate of profit based on fixed capital, which adequately showed the fall in the post war rate of profit and the pivotal role it played in precipitating the global recessions that broke out in the 1970s.

The movement in the rate of profit is the pulse that governs capitalist production. However, as Marx said, the complexity of economic life mitigates against direct links. There are always intermediations meaning that the effect of the fall or rise in the rate of profit can have delayed effects. It is this delay, sometimes up to two years, that have given succour to those who continue to hold to the view that the capitalist economy is not organised by the rate of profit.

One of the issues has been the crudeness of the rate of profit which has been based solely on fixed capital when in fact it needs to be based on fixed and fluid (circulating) capital. Fixed capital here refers to durable means of production such as buildings, machinery, equipment, vehicles which have an economic life that spans multiple cycles of production. Fluid capital refers to the materials, components, power and labour power which is consumed within a cycle.

The important difference between fixed and fluid capital is central to this document and will become clearer soon. Before that it is necessary to sum up Marx's essential reason for the tendency for the rate of profit to fall in the first place. The rate of profit is subject to the gravity exerted by the changes to what he called the technical composition of capital. In order to make workers more productive of profit, capitalists have to provide them with additional means of production..

Over time, the ratio of machinery and equipment rises compared to workers, as each worker now works with more and more means of production. It is this ratio of means of production to hours worked that Marx called the technical composition of capital. He called the capital invested in means of production constant capital and the capital invested in employing workers, variable capital.

Relatively more means of production means more constant capital over which to calculate profits, relatively fewer hours to produce profits means fewer hours in which to produce profits. As a result, the rate of profit trends downwards. The higher the composition of capital the more gravity it exerts on the rate of profit and the greater must be the counter-vailing updrafts limiting or episodically reversing its fall. The incontestable, but undulating fall in the rate of profit from the 1940s to 1973 in the USA, confirmed Marx's law centring the crisis debate around this law.

But the debate did not provide a full and mediated explanation as to how it ended the industrial cycle. One of the missing elements, crucial to this task, was the movement of fluid capital. True, some Marxists hypothesised it played a crucial role in the timing of the recession. Marx himself laid stress on the rate of this movement and that it played a pivotal role in forming the phases of the industrial cycle. At the top of the cycle, in the period of over-production it begins to decelerate as the period of circulation extends, and that when it has become extended sufficiently, it jeopardises the chain of credit that lubricated its circulation. When that chain snaps the recession proper begins,

However, because Marxists believed the SNA could not provide an estimation of the rate of circulation, they ignored it, and it was swept under the theoretical carpet so to speak. This problem has now been solved by the turnover formula which graphically displays the changes to the rate of turnover and thus its role in precipitating crisis. Indeed, unless the deceleration of the rate of turnover, or what is the same thing, the forcible elongation of the period of circulation is recognised, the progression from a relative fall in the rate of profit to is absolute fall, and hence recession, cannot be understood. Thus, in constructing a unified theory of crisis, not only must changes to fixed capital be understood but so too changes to fluid (circulating) capital.

What sets the rate of turnover?

It would be wrong to say that the capitalists are oblivious to the laws that govern their economy. If they were they could not manage the economy and fulfil its inner needs ("personify capital"). How they act and what they say to the working class are two different things. They may not know what causes waves, but they know which waves to ride, where to catch them and when not to. They are fully aware of the inventory cycle because their businesses depend on it. If inventories rise in relation to sales, which represents a slowing down of the rate of turnover, they would be foolish to continue producing the same quantities of product and tying up or jeopardising their capital.

They therefore damp down on production. When that moves from the periphery to the centre and becomes generalised, like a chain reaction, all capitalists reign in production. Overall output falls dragging down GDP and the classic recession breaks out. What they cannot explain, as I said in the previous article on the Kitchin cycle, is why yesterday's adequate level of inventories or stock becomes excessive today.

This is the core of this article, and it basically completes the unified theory of crisis based on profitability. It provides the reciprocal relation between fixed and fluid capital and therefore incorporates disproportionality and under-consumption as side effects. The starting point is to recognise, that technically speaking, the rate of turnover is governed by the investment in fixed capital. Of course, the turnover period can also be reduced by better management techniques and organisation. But this is minor. Take the issue of transport. Unless the average speed or the capacity of transport is improved by investment, being adept at locating the more efficient routes only makes for marginal improvements, until of course competitors spot them as well.

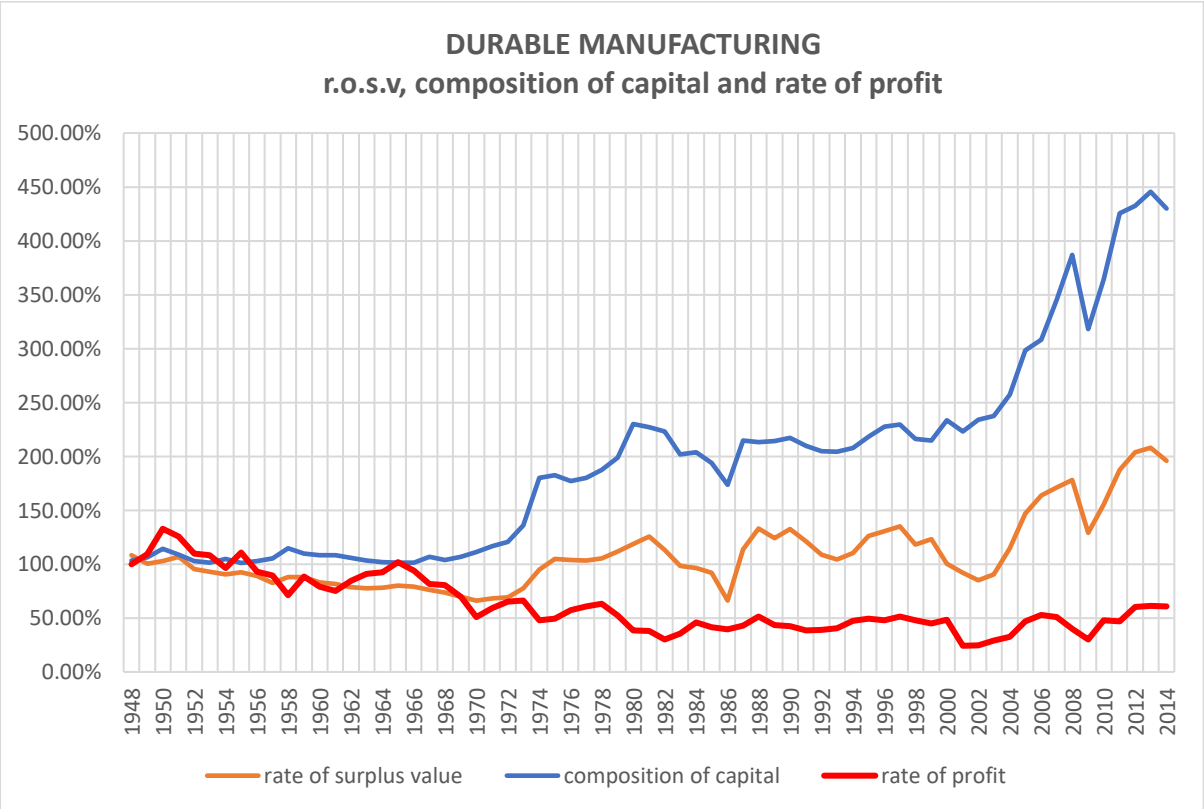
An acceleration in the rate of turnover of fluid capital, where the output is unchanged, does not increase the mass of profits. What it does do is to reduce the amount of capital needed to produce

that profit because the time between cash being paid out and cash being received is reduced. Everything else being equal if a capitalist needs £1 million worth of capital per day, particularly to pay wages, then a 40-day period of circulation requires £40 million whereas a 38-day period would only require £38 million holding output constant. Thus, if the same £2 million of profit is realised in both cases, then in the first case it is set against £40 million and in the other it is set against £38 million. The return then works out at 5% in the first instance and 5.3% in the second. More importantly over the course of a year, the usual calculation, the differences are enlarged, 46% versus 51%.

It is therefore clear that when the rate of turnover accelerates it helps support the overall rate of profit because more profits are realised within a year. In this case the difference of two days yields an annual difference of 5%. Thus, as long as the rate is accelerating it helps support the rate of profit. The opposite is the case when it decelerates. It weighs on the rate of profit.

Paradoxically, circulating capital is reduced relatively by the increase in fixed capital. Because fixed capital is durable it accumulates, whereas circulating capital does not. Thus, over time, fixed capital increasingly outweighs circulating capital. In Table 5.10 (under Fixed Asset Tables) the BEA estimates that in 2017 fixed assets were $24.1 trillion and inventories (the material substance of circulating capital) were $2.7 trillion. This is an eightfold gap. In 1951 that gap was only threefold. In other words, over the course of 66 years, that gap has almost trebled.

The rate of profit is thus increasingly set by fixed capital. This is captured by the graph below. The top graph is the rising composition of capital driven by fixed asset investment. It outpaces the increase in exploitation or how quickly workers produce additional profits. Therefore, as the rate pf profit growth is necessarily slower than the rate of capital growth, the rate of profit must fall because it is the ratio between profits and capital. (Note 1)



Therefore, if we are to find out how market conditions change, we need to focus on what encourages or discourages fixed investment and thus its effect on fluid capital. But we will be going further in

order to understand why this encouragement or discouragement of investment seems to occur within a finite period, roughly 8 years. Why the profit that drives investment seems to have an inner life. Over the last 56 years the NEBR in the USA has delineated 7 recessions which always marks the end of each cycle. This does not mean each cycle was exactly 8 years but that they average 8 years. We will also examine as part of our proof, why some extend beyond 8 years and why some fall short of 8 years.

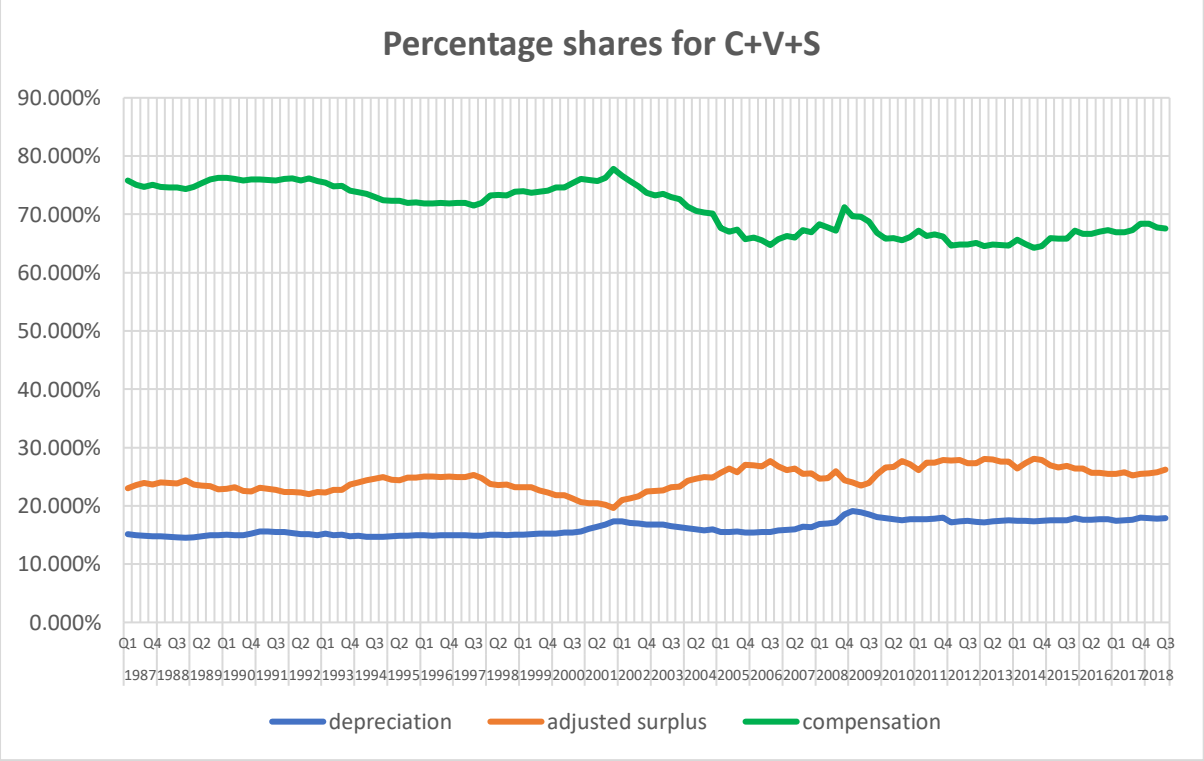
The average age of machinery and equipment?

It is no coincidence that the average economic life of machinery and equipment is between 7 and 8 years, giving them a half-life of roughly 4 years. According to the BEA the average age of equipment is 8.8 years for manufacturing and 7.2 years for the corporate sector. (BEA interactive tables, fixed assets accounts, Table 4.9 *Current-Cost Average Age at Yearend of Private Non-residential Fixed Assets by Industry Group and Legal Form of Organization*) The importance of this average age lies in the sphere of depreciation. Depreciation is always based on economic life.

Marx first described market value as c + v + s. Market value is the foundation of the pricing system in the capitalist economy. Little c stands for past labour and v + s stands for living labour. It is self-evident that the means of production and materials which workers are currently using, were previously produced. That is, it represents past labour. Present labour is the labour expended during the current production process or year, part of which is paid forming wages (v), and, part of which is unpaid forming profits (s for surplus).

Graph 2 gives us an estimate as to the relative size of each element on an annual basis rather than a cyclical basis. During 2017, annual compensation (wages and benefits) made up 68%, the net surplus (before taxes) made up 26% and depreciation made up the remaining 16%. At this time, it is not important to examine the movement of each graph, except to note that they are not fixed ratios.

Graph 2.



(Sources: See accompanying spreadsheet "*working paper depreciation, compensation, surplus 1987 -2018*" This spreadsheet contains all sources calculations and graphs.)

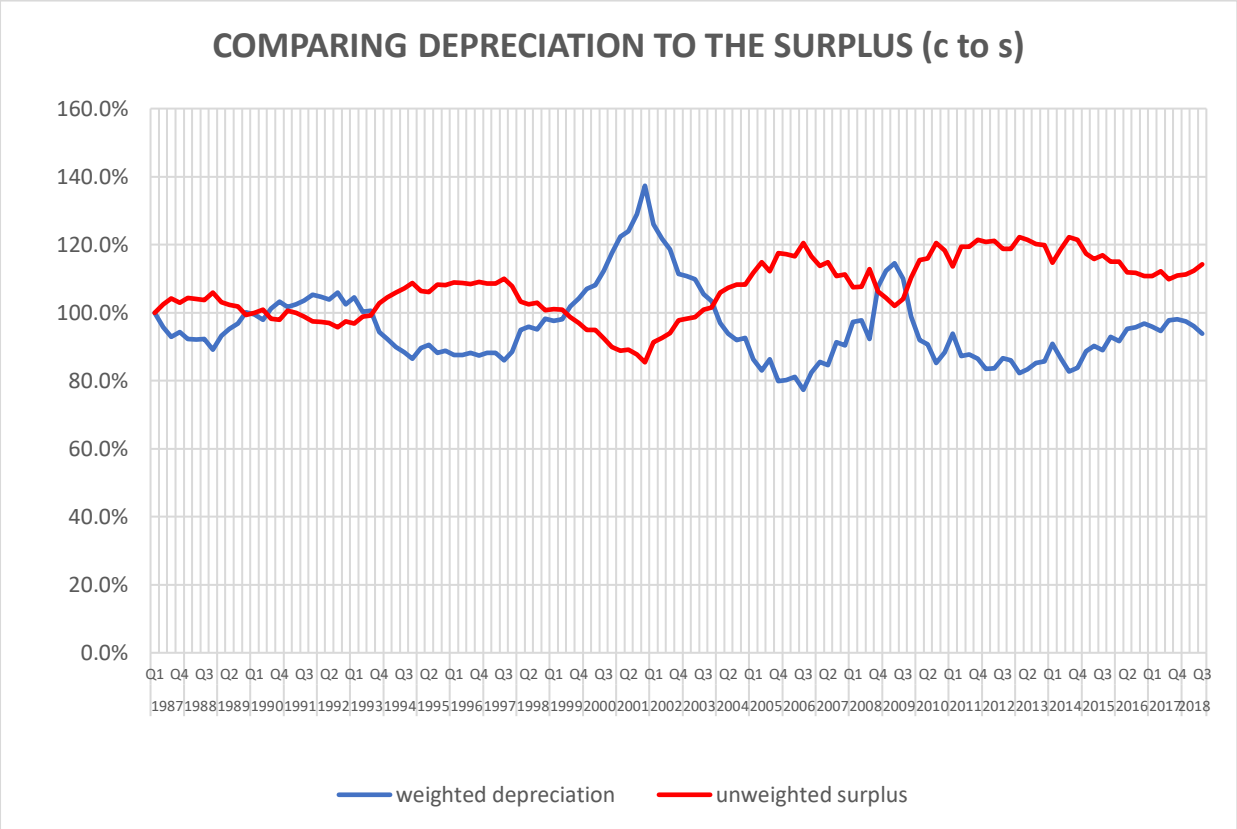
Thus, c stands for the past and v + s for the present, say all the labour that will be expended in 2019. We will first focus on c. Little c has two elements - net inventory used up and depreciation. We are not interested in the first element, only the second which is depreciation, so the reader need not concern themselves with issues relating to inventory.

Depreciation or capital consumption as it is called on the other side of the Atlantic is the normal wear and tear expected each year from every piece of equipment and machine. Thus, if the expected economic life of a machine is 8 years and it costs £8 million, then each year depreciation will amount to £1 million using the straight-line method. This machine will lose £1 million of its value each year which is passed on to the value of the commodities passing through it. If the total number of items produced in 2019 is two million, then the value passed on will amount to 50 pence per item.

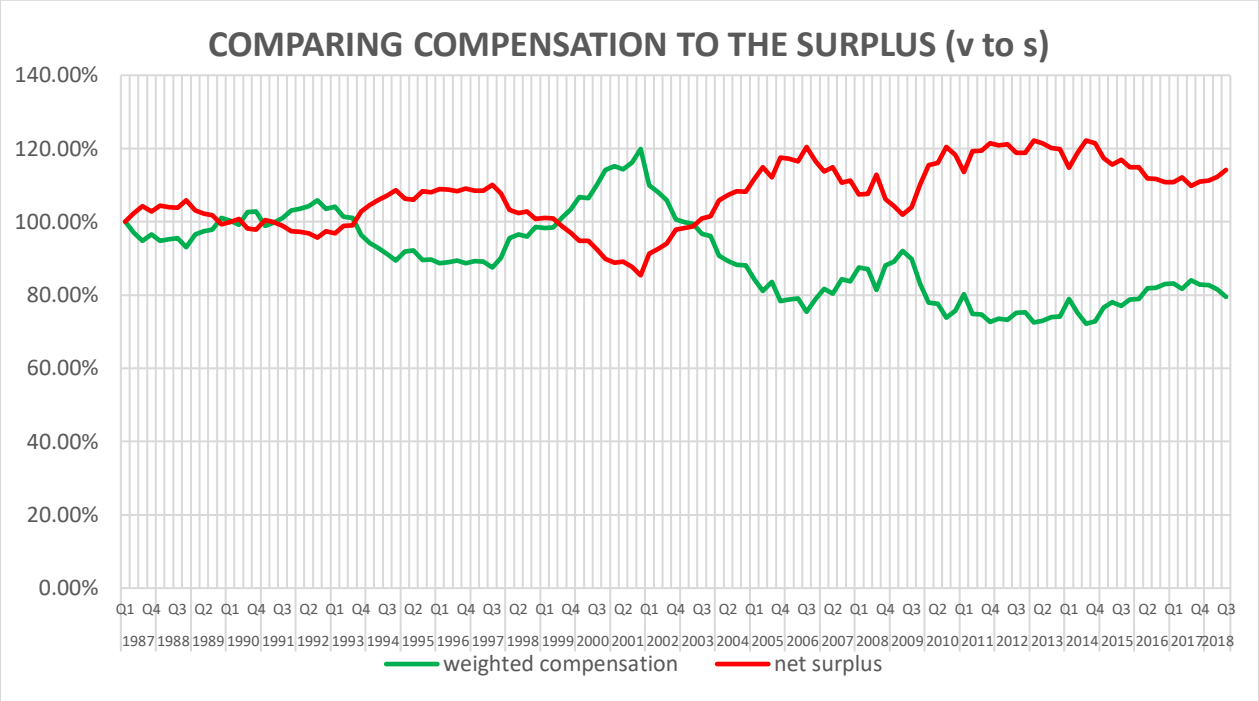
Now it is important to note that depreciation or capital consumption according to the methodology of the SNA refers only to expected wear and tear. It does not include premature obsolescence or forced scrapping of any machine (what Marx called moral depreciation). That is accounted for elsewhere in the SNA. (Source: Measuring Capital OECD manual 2009 https://www.oecd-ilibrary.org/economics/measuring-capital-oecd-manual-2009/depreciation-or-consumption-of-fixed-capital_9789264068476-8-en;jsessionid=R2VmdFJXSnanHl-Qd74hawZh.ip-10-240-5-9)

This makes our analysis more precise. What we are primarily interested in is an area which is seldom analysed by Marxists, the rhythm of depreciation over the course of the industrial cycle. That rhythm is described in the graph 3 below. I have paired Graph 3 with Graph 4 in order to explain how they differentially may affect profits. It is in the nature of graphs that the largest component appears to flatten the movement of the smaller components. To overcome this, I have weighted the smaller components so that all the movements are proportionate. This gives a clearer view of their interaction.

Graph 3.



Graph 4.



The analysis begins with Graph 4, with relates depreciation to profits. We note that whenever depreciation rises, profits fall and vice versa. However, unlike Graph 4, there is no causal affect in the general case. Unlike the rise in compensation which is causal and where rising wages can cause profits to fall, depreciation in the normal case should not lead to a fall in profits. However, we will see there are exceptions to this rule and they are decisive.

Capitalists treat depreciation as a cost. This seems unusual because the real cost has been incurred earlier with the purchase of the machine on which the depreciation is levied. However, as a cost, depreciation is in a category of its own. Usually a cost involves parting with cash, paying another capitalist or worker for the use of their property. In that case the company loses money. However, in the case of depreciation, there is no loss of cash. Instead cash builds up which is normally put into a sinking fund to replace worn out machines and equipment. That is why corporate cash flow, the money left over, comprises both depreciation and profits in changing proportions.

The treatment of depreciation as a special cost means it is deducted from profits rather than added to the other costs. In other words, instead of it being added to side of cost price it is being deducted from the side of selling price. Why do the capitalists do it this way, what is it about their experience that has led them to this convention which effectively confuses past and present labour?

The answer lies in the split nature of the capitalist. When facing the selling-side they are a “price taker”, and when facing the cost-side they are a “price maker”. On the cost price-side, the buying side, they have some degree of control. They can renegotiate contracts with suppliers, or, they can renegotiate the terms and conditions of their workers, by far the biggest element of their cost price. But from their experience they know how difficult it is to move prices set by the market, especially when demand changes. Thus, it is profits that is the moving and unpredictable feast.

Depreciation on the other hand is fixed. It is backward looking not forward looking. A definite sum which needs to be set aside each year based on the original value of the asset. If profits fall in the future, depreciation cannot be adjusted downwards to compensate without the risk of the company

becoming insolvent because it has not set aside enough money to replace machinery and equipment when they are worn out. So, it is overall cash flow that determines the health of a company.

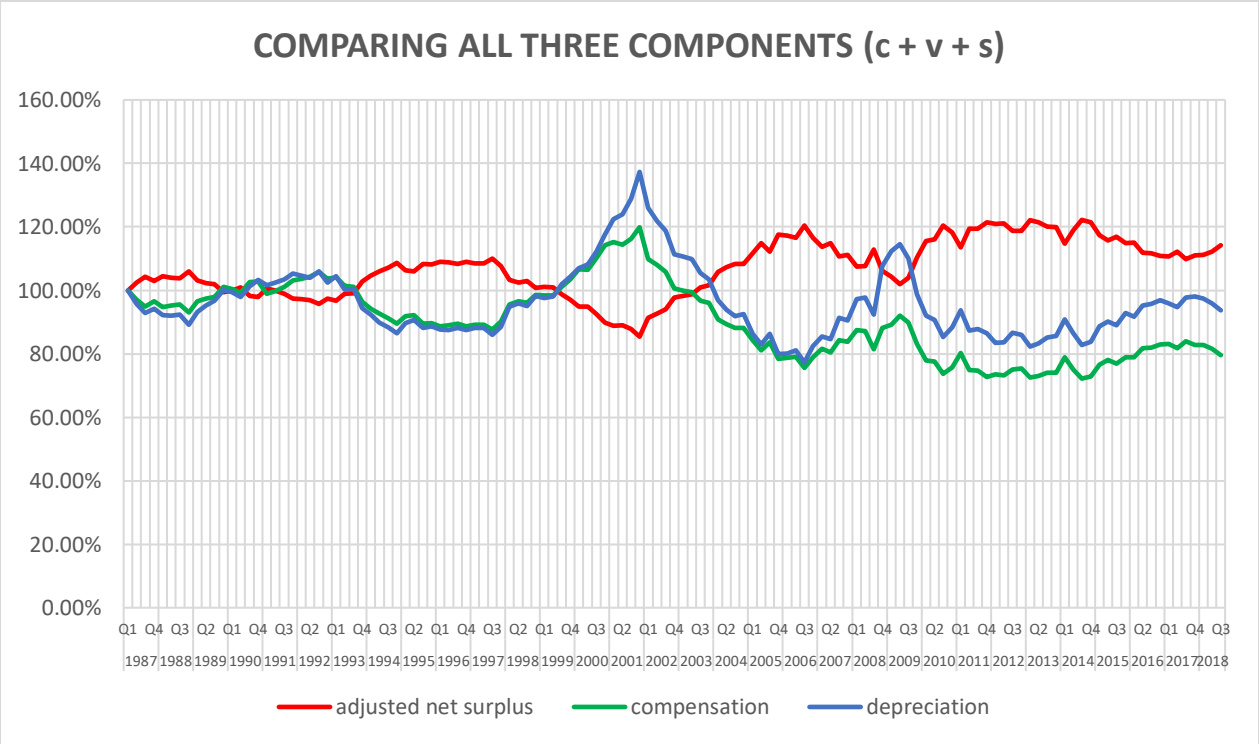
If markets prices compensate a company for its depreciation in full, then profits would be unaffected. It would make no difference if depreciation was added to cost price or deducted from profits. However, if market prices do not cover market value, it is not depreciation that is affected but profits. Hence the fall in profit is not due to depreciation but to selling prices which do not accommodate all the market value of that product. Profits fall because cash flow falls.

Now let us turn to compensation. Unlike depreciation which is past labour, compensation and profit are earned out of current labour. The value newly added in 2019 breaks down into compensation and surplus only. (The surplus then forms the following revenue streams: rent, interest, tax and profit.) Because both compensation and surplus are born from the same quantum of labour, it follows that higher compensation can lead to lower profits at a given level of output. It is a division and redivision of the same value unlike the case of depreciation where the value has already been incurred.

Graph 4 shows us again, that in all cases the rise in compensation is met with a fall in profits towards the end of the business cycle. This has led many economists and critics of Marx to declare that the falling rate of profit is caused by rising wages. It would of course be formal to exclude this, but it plays a smaller role than is generally envisaged. There is a difference between annual compensation and variable capital, which is the capital needed to pay wages. This is because of the turnover of variable capital. In 2017 compensation amounted to $5,695 million and variable capital to only $1747 million. So, a 10% hike in wages cost the capitalist class $174.7 million, not $569.5 million, when calculating the rate of profit which is based on variable capital not compensation. Hence rising wages has a smaller effect than is normally assumed.

The question we now return to: will depreciation have an effect on profits under conditions where market prices do not compensate companies for the value they produce?

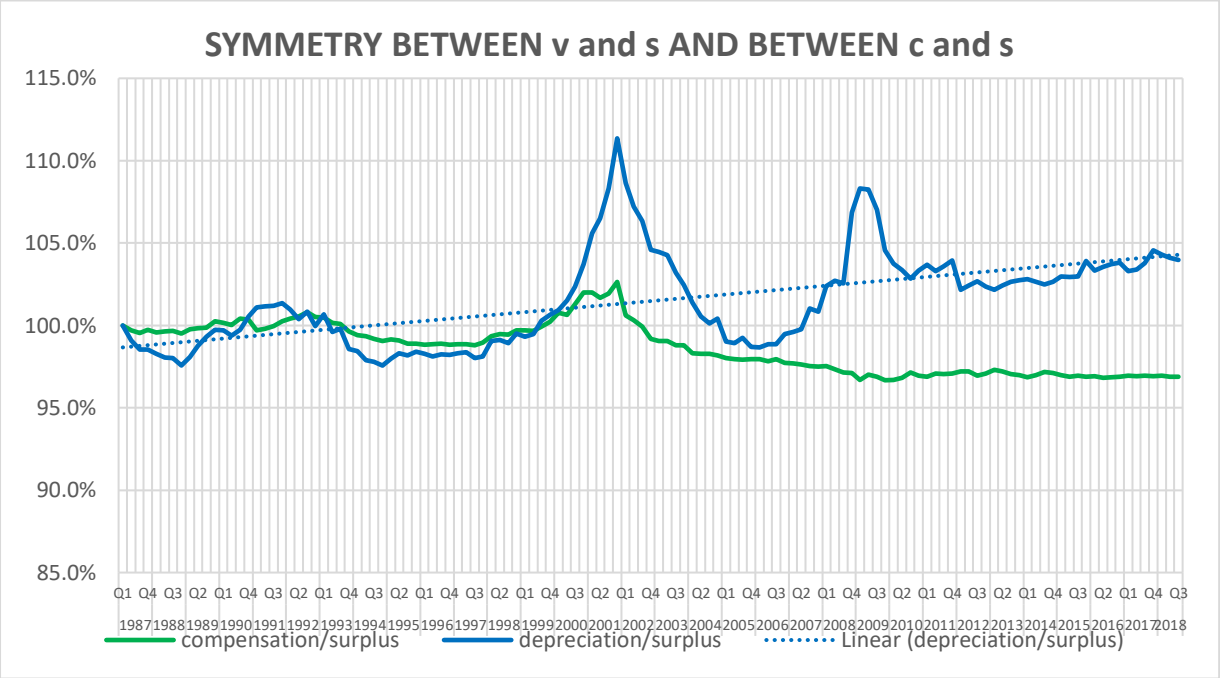
Graph 5.



In Graph 5 above, all three components of value are compared, and, their proportional movement is assessed. It is noted that proportionately depreciation and compensation moved in tandem until 1998. After that depreciation becomes more volatile. It rises faster and peaks higher than does compensation. It could be that a pattern is emerging where depreciation is no longer neutral but impacting profits because of the behaviour of market prices in the period of over-production?

There is a test for this. If we assume that net value added, or current value added, is the sum of surplus and compensation, then their opposing movements should be symmetrical, any rise in one should be cancelled out by the fall in the other. Graph 6 below examines whether this is true or not. It adds up both movements and divides it by 2 which should yield a constant 100%, except that it does not.

Graph 6.



The green graph represents the symmetry between compensation and surplus. Up to 1999 the expected symmetry held good. The average deviation was about 1%. This century, symmetry has broken down. The deviation is now in the order of 3%. In other words, the movement of profits and compensation has become less causal.

Now turn to depreciation. Symmetry in this case should not be expected as depreciation and the surplus compare two different aspects of value, past value in the case of depreciation and current added value in the case of the surplus. What we could expect is a sustained growth in depreciation relative to the surplus as the composition of capital rises, which is the case as the trend line indicates.

However, above trend sharp upslopes (blue graph) leading to the recessions of 2000 and 2008 strongly suggests that depreciation is acting on profits outside the general case, the case established by the law of value. This is confirmed by the raw data. Cumulatively, between 1987 and 2018, compensation which fell by $432.8 million from trend, should be reflected in a commensurate rise the net surplus, However the rise has only been $242.5 million. (These figures represent changing shares of net value compared to 1987.) Therefore nearly £200 million has gone missing. It is to be found in the sphere of depreciation whose share relative to the surplus has risen by $208.3 billion. There has been an undoubted leakage between past and present value equal to 1/6th of pre-tax profits in 2018.

If this is no coincidence, then only two factors can explain it. One is the issue of realisation, that market prices are not compensating profits for the deduction of depreciation. Secondly the misstatement of depreciation since the 2012 SNA revisions which capitalised Research and Development and in-house software. An accounting nod so to speak to the emergence of the information age and the move to immaterial production. As a result of this capitalisation, depreciation has shot up because of the short life of the "assets" making up research and development and software. But this revision is based on double counting and this double counting, these added imputed sales, could be distorting the data and undervaluing profits.

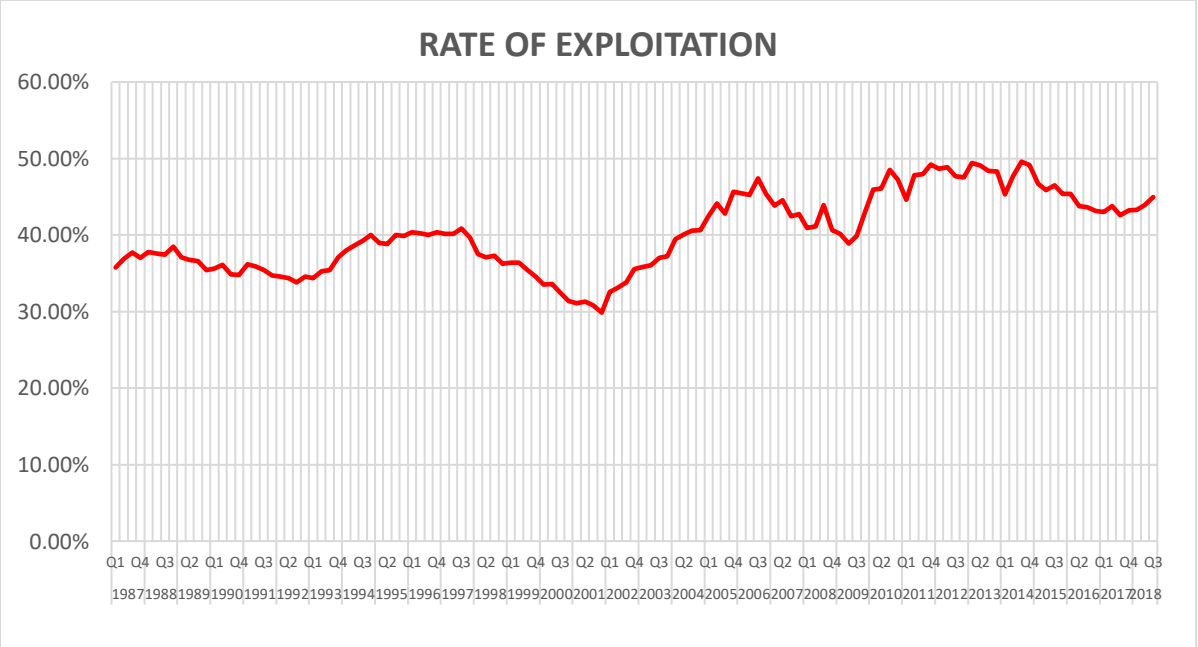
While the rise in the technical composition of capital will see an expansion of gross value added relative to net value added, the law of value states that the rise in depreciation, which stretches the valuation of gross value added above that of net value added, should have no effect on profits, because it neither adds to nor subtracts from the amount of unpaid labour currently being produced. But outside the general law it can affect profits, and this is suggested by the graphs which show falls in the share of depreciation in the first half of the cycle followed by a rise in the second. We will analyse why in the next section under the "resolution of overproduction".

Why over-production is always resolved explosively?

Whether Marx held a view that under-consumption was the ultimate cause of crisis or not, and quotes are bandied between proponents and opponents of this view, what Marx did uphold was the question of over-production. Namely, that the penultimate phase in the business cycle, prior to the economic emergency (recession), could only be characterised as a phase of over-production. He never deviated from this view because it was so patently obvious.

This phase is one of accelerating output resulting from the vigorous investment that occurred during the preceding phase of prosperity. The prosperity phase occurs when profits rise above their previous peak providing the internal funds with which to invest. The question of course is why the market cannot absorb this additional output and why it has become excessive. The answer does not lie in the fall in employment and wages. In fact, new job creation reaches its peak just before every recession, such as March 2001, October 2007 and probably December 2018.

Graph 7.



In Graph 7 above the rate of exploitation is graphed. It shows that without exception, two to three years before the end of the cycle, the rate of exploitation is falling because wages are rising. Thus, the simplistic view that the recession is caused by under-consumption stemming from falling employment and wages is wrong.

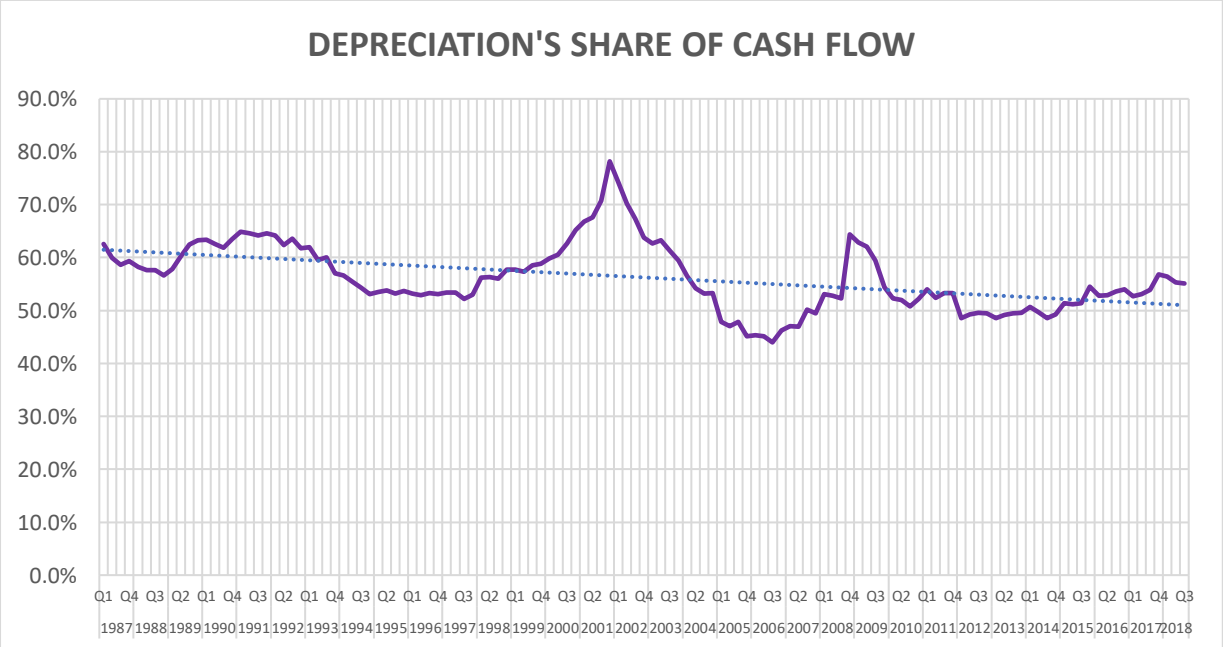
Instead the answer for the fall in demand lies in the unevenness of capitalism itself. The primary source of this unevenness is the differing degree of capital composition between sectors of the economy. Some sectors, out of technical necessity, have organic compositions above the average and some have compositions below the average. Engineering companies that make expresso machines tend to have compositions above the average because of the intensive use of automation and computerised methods. Coffee shops that serve the coffee have lower compositions because they employ little equipment and lots of baristas and waiters. Of course, this could be remedied by turning a coffee shop into a walk-in vending machine devoid of labour, but where would the fun in that be.

Marx demonstrated how higher composition capitals which employ relatively few workers to produce profits, manage to make average rates of profit. They achieve these profit rates because the movement of capital allows them to raise their market prices well above their market value. But these industries suffer two sensitivities. Firstly, their elevated market prices are sensitive to supply changes. Any rapid increase in investment which boosts output, raises the risk of reduced market prices.

Secondly they have elevated volumes of depreciation because of their outsized asset base. And any further investment, which is by its nature is “capital intensive”, will increase the stream of depreciation, a fixed cost. Thus, a fragile market price on the one side and elevated depreciation on the other raises the propensity to compress profits. The latter phases of the cycle presents evidence that pre-tax profits are indeed squeezed here, making further investment less attractive.

Confirmation is found, when viewing depreciation from the perspective of corporate cash flow the sum of depreciation and profit. In Graph 8, there is a significant upward shift in the share of depreciation and a significant downward shift in the share of profit. This occurs two to three years prior to the actual recession. Moreover, if this is the average for the whole economy, where higher and lower compositions are blended, then it must be more acute in the high composition sectors.

Graph 8.



This growing profit squeeze leads to a reduction of investment in the higher composition sectors or where investment has grown fastest. This is where disproportion comes in. These industries act as both suppliers to and customers to the rest of the economy. Their curtailing of investment represents a loss of demand to the rest of the economy. At the same time, by restricting output in what is still a buoyant economy, they are able to raise prices because their prices are sensitive to small changes in supply and demand. This phenomenon is often misinterpreted. It is often assumed that rising prices attest to these sectors not being able to keep up with demand, instead of what is the case, the scaling back of production because of falling profitability.

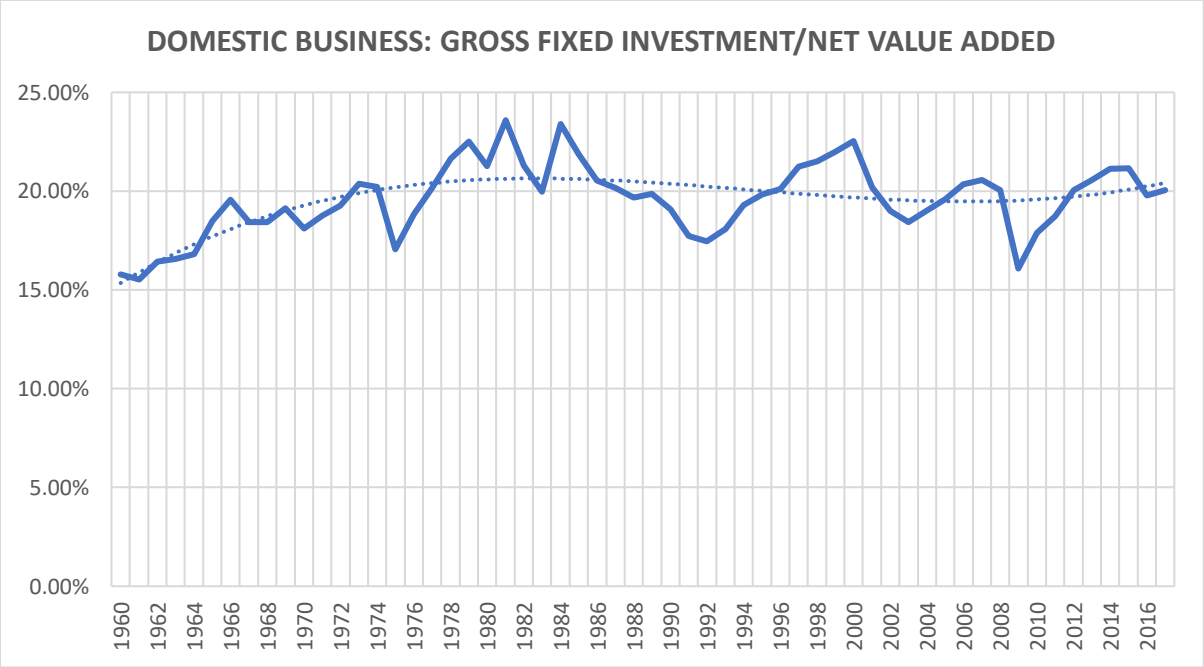
Thus, sectoral investment begins to fall before the overall investment in the economy falls. This has the effect of decelerating but not stalling overall investment.

How does this sectoral investment percolate through the economy? The transmission belt is the rate of turnover of circulating capital. A fall in investment or in its pace, is experienced as a fall in demand. It now takes longer to sell a product everywhere in the economy. This is experienced as a rise in inventories relative to sales. But, if it takes longer to sell a product it also takes longer to realise profits. The amount of surplus labour does not change, what has changed is that it now takes longer to convert it into surplus cash, and so measured in the same time frame, profits appear to fall.

This discourages investment in the rest of the economy which in turn aggravates the fall in demand. At some point quantity turns into quality. If the rate of turnover decelerates to the point it provokes an absolute fall in the mass of profits throughout the economy this will lead to an absolute fall in investment which marks the divide separating growing output from falling output. Under these circumstances a financial emergency resulting from the crisis of profitability, can break out, and if it does, it accelerates and deepens the resulting recession.

There is a final proof that the average age, the level of investment and the rise in depreciation plays a pivotal role in determining the length of the industrial cycle. From the above hypotheses it can be assumed that the more vigorous the level of investment within a given cycle, the shorter will be that cycle, because the factors leading to its end are intensified. The opposite is equally true. The more subdued investment, the longer will be the business cycle. Graph 9 below shows this to be the case.

Graph 9.



Taking the last three recessions. The recession in 2000 followed a period of growth of 10 years. Before that time the valley set by investment was substantial and endured for 6 years resulting in a below average rate of investment over the whole cycle. In contrast the cycle which ended in 2008 was only 8 years. (Investment in China at this time accelerated too.) The valley in investment leading up to 2008 was only three years in duration, or half the time, and shallower. Consequently, the duration of the cycle up to 2008 was only 6 years and 1 month.

The recovery subsequent to 2008 does not show an elongated valley but rather a very deep valley. Its bottom is furthest away from the trend line, thus reducing average investment in the current cycle. It is commonly recognised that the current "expansion" has been plagued by historically low rates of investment. The result, the current expansion is considered to be 9 years and seven months old. (Of course, I dispute this as the evidence suggests the post 2008 cycle ended in 2016 in a pseudo recession, but it also could be the case that weak investment outside China made it possible for central banks to circumvent a recession in 2016.)

Graph 10.

Figure 1.Expansion length (in months from indicated trough)

Source: National Bureau of Economic Research/Haver Analytics.
Graphic: Deloitte University Press | DUPress.com

Thus, from the evidence of the last 60 years, the rate of investment plays a critical role in determining the life span of the industrial cycle particularly if it has been engaged in expanding output rather than cheapening it.

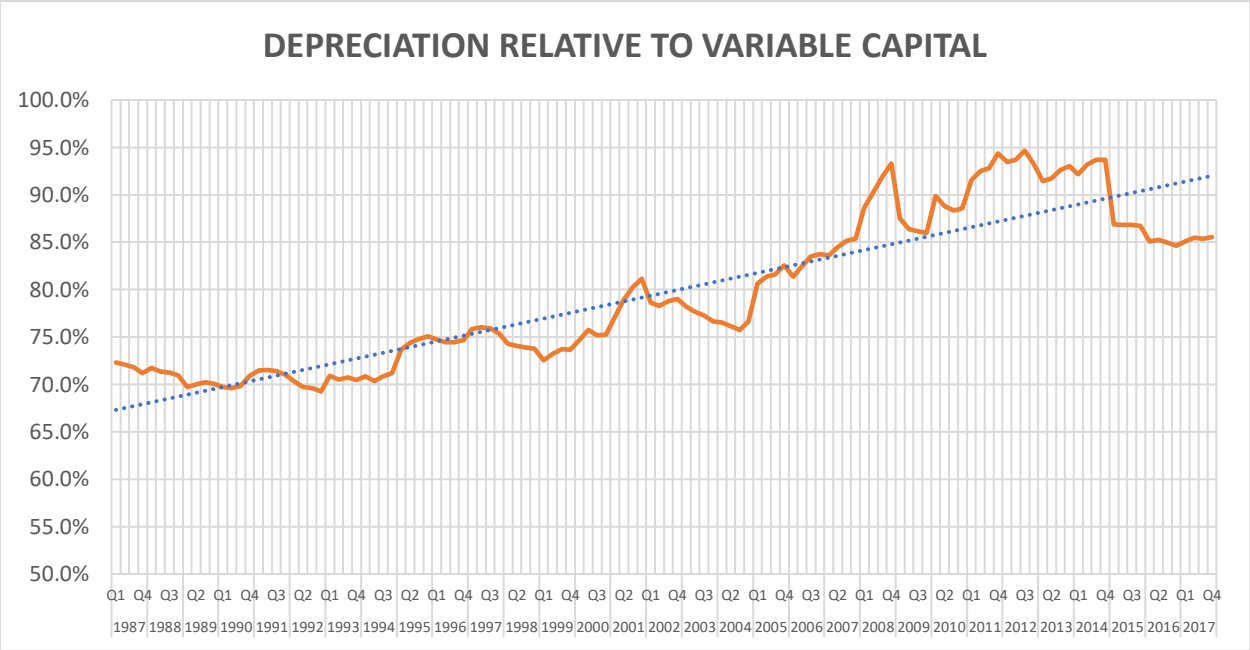
The resolution of the crisis.

The corollary also supports the general proposition, namely how the recession is resolved. If it is the case that its core feature is the fallen rate of profit, and that this rate has fallen because more capital has accumulated on the one side and proportionately less profit realised on the other, then it follows that capital must be reduced and profits increased. The culling of means of production which always occurs in a recession, particularly where the composition is highest, can take one of two forms. Firstly, actual destruction and secondly devaluation through bankruptcies or forced sales.

The destruction of capital, often older capital which has largely been depreciated, has less an effect than capital which is devalued as a result of bankruptcies or forced sales. This is recognised by Marx. The new owners of this capital will set depreciation at the "vulture" price they paid for it, not its original cost, nor its depreciated cost. In all cases there is a rapid, even convulsive reduction in the value of the remaining capital stock which together with anaemic investment, explains the rapid fall in depreciation relative to the other two components making up market value. This is clearly visible in the above graphs.

What is less visible is the movement of depreciation relative to variable capital. The spreadsheet from which all these graphs are taken shows how compensation is reduced by the annual rate of turnover. As variable capital is the operative form of capital and is it is always smaller than annual compensation, it accentuates the comparative movement of depreciation. The final graph below shows that over time depreciation rises relative to variable capital. Despite the long-term average rise in depreciation there are sharp cyclical falls following each recession.

Graph 11.



This fall in depreciation frees up profit if market prices fail to compensate for it. It thus acts as a counter-vailing factor, and one that has been ignored up to now because of a formal and rigid interpretation of the law of value that states that changes to depreciation cannot affect profits because one is born out of past labour and the other out of living labour. This is particularly important in the phase of stagnation following the recessions, where on average, aggregate market prices reside below aggregate market value. It is also important when taking the long view. As the technical composition of capital rises, so the role of depreciation intensifies. Depreciation has risen from 70% to 90% compared to variable capital in just 30 years.

It is clear when focusing on the high composition sectors towards the end of the cycle, not only must market price support additional profits to yield an average rate of profit, but it must recompense the sector for its rising burden of depreciation. But these industries are the ones with the highest price sensitivity. A small percentage rise in output can result in large movements in price. The oil industry, which is capital intensive, has shown how a 1% imbalance between demand and supply on either side can lead to sharp rises or sharp falls in global oil prices.

Conclusion.

It is of course facetious to say that capital is destroyed in order to reduce depreciation. Rather the fall in depreciation is a result of the destruction both of capital volume and value. Fixed capital is destroyed because some of it lies idle. There has been an over-accumulation of means of production relative to profits. Some of the capital cannot be profitably employed so must be destroyed in order to raise the rate of profit, but in destroying this value, depreciation itself is reduced thus freeing up profits squeezed by market prices. Thus, instead of having a single effect on restoring enterprise profits, the destruction of capital has a double effect, with the second effect, depreciation going mostly undetected.

We now have a unified theory of crisis. Clearly some tangential areas have been excluded such as the export of capital, the role of credit and of central banks (Note 2). This is not the purpose of this article. Rather its purpose is to reconnect the symptoms of reduced consumption and disproportionality with the underlying rate of profit.

Only by including the role of depreciation in relation to market prices can we identify the locus and timing for the initial fall in investment. Only through understanding the turnover of fluid capital can we locate the mechanism whereby changes in one part of the economy are transmitted to all parts, converting the relative fall in the rate of profit into an absolute fall.

It was to be expected that capitalism, history's first and therefore primitive industrial mode of production could only expand on the basis of boom and bust, thus defining it as a transitory stage in the industrialisation of this planet. It would be expected that past labour in the hands of the capitalist class would trip up living labour. That in order to clear the way for future production some of the past labour would have to be destroyed.

This destruction is peculiar to capitalism. From the vantage of the international working class the destruction wrought by an economic emergency (recession) is a waste of our labour time. It represents a loss to the working class made without their permission. In a socialist society, these crises end because they are profit based.

In a socialist society past labour does not weigh on the shoulders of living labour. The rising composition of capital is expressed simply through rising productivity, and, rising productivity through the movement of objective prices. As productivity increases so prices fall rewarding workers for their collective efforts. If the share of past labour rises, it means that prices do not fall as fast as would be the case were they based purely on living labour. But that is all.

Note 1. Compensation is used here because we are comparing annual figures. Variable capital multiplied by its annual turnover, yields annual compensation. Thus, annualised, all three components of market value are commensurate when using compensation rather than variable capital.

Note 2. It is interesting to note that Central Banks tend to soften their monetary position when the economy begins to stall, as the FED has done this January. This undercuts the arguments of the libertarians and Austrians that central banks are responsible for financial crashes. If central banks adjust rates, the tempo is always set by the dance of the economy itself. A possible exception was during Volcker's tenure, when interest rates were raised to compensate for Reagan's imbecilic fiscal policies.

Brian Green, January 2018.