THREE "RATES OF PROFIT,
but which one is the most concrete?

The rate of profit is often confused with the rate of return. This article compares the rate of return based on fixed capital, with the enhanced rate of return based on fixed capital plus inventories, with the actual rate of profit based on circulating and fixed capital. It shows that the actual rate of profit is adjacent to the enhanced rate of return but distant to the simple rate of return. This article examines data from the USA, the UK and China, each of which yields similar results.

The rate of return is often used by Marxists as a proxy for the rate of profit. This is an error as the simple rate of return is removed from the actual rate of profit. Kliman rejects the addition of inventories in determining profitability, but the article will show that this is a significant mistake.

As has been stated before it is the turnover formula which allows for the calculation of circulating capital. The formula for distilling circulating capital from the National Accounts is:

$$\frac{\text{annual gross output less net surplus}}{\text{rate of turnover}} = \frac{\text{cost of gross output}}{\text{rate of turnover}} = \text{circulating capital}$$

Gross Output in the US is obtained from the GDP-by-industry accounts, in the UK from the Input-Output Tables (intermediate sales section) and in China as industry revenue. The rate of turnover is yielded by GO/GV+(GO-GV)/GV where GO stands for gross output and GV for gross value added.

"A number of authors have attempted to distil there own turnover formulas. *In this paper, capital turnover was estimated by dividing the total costs of the economy (intermediate consumption, wages and consumption of fixed capital) by total stock of inventories, according to Fichtenbaum (1988). The fundamental idea of this procedure is that the number of annual turnovers emerges from the number of times the total stock of inventories is expressed in the flow of total costs of the economy."* (https://mpra.ub.uni-muenchen.de/59283/3/MPRA_paper_59283.pdf) Maito is clearly wrong.

In figure 3a he arrives at a figure for turnover rising from 6 to 12. We know that the production period is a bit like the speed of light. It is impossible for capital to circulate faster than the production period. Otherwise things would be sold before they are produced. Marx was quite clear, the period of circulation of capital comprises the production period plus the circulation period on either side, generally credit given less credit taken measured in days. Now it is quite a simple matter to obtain the production period. It is proximate to the inventory cycle. The inventory cycle describes how many times inventory turns over a year. Clearly inventory that has not been produced cannot turn over, so, as long as inventory balances remain constant, it is a fair proxy for the production period.

Of course, the measurement of this cycle by capitalism is slightly inaccurate. It should be based on cost of sales/inventory, and not on, sales/inventory. When we factor for this, the ratio fluctuates between 1.8 – 2.0 p.a. for total business sales or a turnover rate of 6. (This variation depends on whether an average mark-up is taken or the data from the BEA.) Accordingly, in 2009 when Maito obtains a turnover rate of 10 this is significantly higher than the production period. In days his turnover is 36.5 days compared to the production period of 58 days (12/1.9 = 6.3 turnovers p.a. or 58 days).

Where does the mistake arise from? It arises by adding wages on top of inventory, or better still, compensation which includes benefits. Had he used compensation, turnover would have gone up from 10 to at least 11. Wages are never taken as inputs by the statistical bureaus, but only as part of the final sale. Here is the reason. When workers clock in to work, they do so empty handed. When they

clock out at the end of the day they do so again, empty handed. What they leave behind is the product of their labour now owned by their employer. As these products pile up during the production process, there value increases. Contained in this value is part of the necessary labour expended by the workers which will subsequently take the form of wages. Hence to add both the accruing wages and the accumulating value of the inventory produced, creates duplication. Intermediate sales, or inputs, are already pregnant with wages.

Worse, not only do they contain wages but duplicated wages because intermediate sales represent the duplication of value. That is why wages are only accounted for in the value of final sales or GDP in order to avoid this duplication. The result is that intermediate consumption plus wages will yield an inflated sum, because wages are being counted twice or three times, which by inflating the numerator in the equation, boosts turnover.

Peter Jones, PhD student at the Australian National University has identified this problem. He is correct to say Marx and Engels did not provide a formula for turnover: "*Unfortunately, I have not found anywhere where Marx or Engels gives such a method.*" (http://gesd.free.fr/jonesp12.pdf page 29). Further: "*I cannot see a way to measure these variables exactly using national accounts data.*" There he is mistaken. He then goes on to make the following important observation: "*This means that the stock of variable capital advanced at any point in time is just the wages costs 'embodied' in unfinished and unsold commodities (call this VSt).*" (page 30) This mirrors the above criticism of Maito who duplicates inventory and wages.

Unfortunately, he then goes wrong because he confuses the circulation of capital with its production period only. He uses the data found in BEA Table 5.8.5B. *Private Inventories and Domestic Final Sales by Industry.* He sums up his method thus: I use … "*the average ratio of GDP to the stock of unsold and unfinished commodities. So, there is in fact no need to estimate the wage cost share of PS.*"

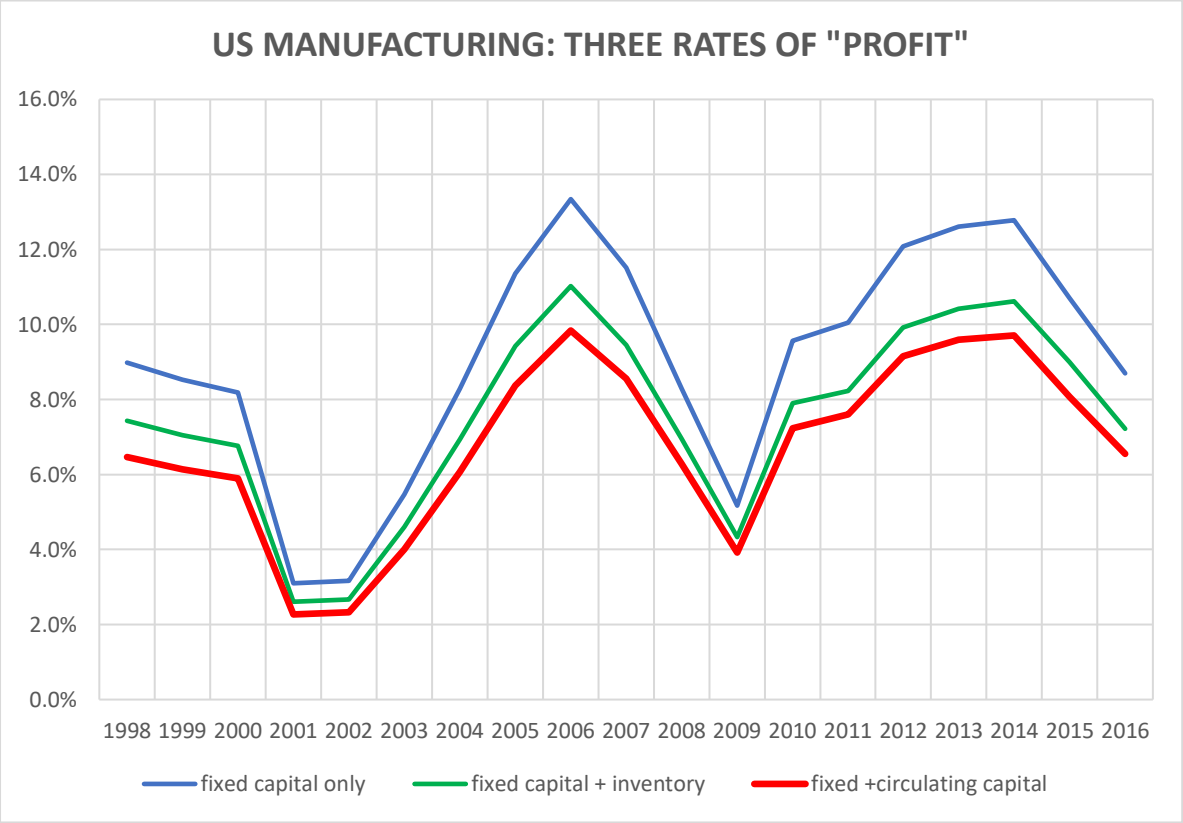
Table 5.8.5D represents a ratio that is higher than that found in single sector inventory ratios. The reason is that single sector ratios, defined as sales/inventories are in fact total sales/inventories or gross output/inventories whereas this table is final sales/inventory or GVA/inventories. The result is that the former tends to yield ratios of 1.3 and the latter 2.3, or 70 days versus 40 days. In terms of the rate of turnover, the latter yields a rate of 5.20. Still each rate yields only the production period.

The amount of circulating capital is often cast as inventory + (credit given to customers minus credit taken from suppliers) + cash on hand. Cash on hand is a complex item. Some of it may result from depreciation set aside for replacement of fixed assets. Some may be set aside for long term contingencies like pensions. Only that element of cash set aside for the purchasing of inputs, the payment of wages and against unexpected repairs forms part of circulating or working capital. It tends to be the minor element. Hence as a simple rule of thumb, because wages are embodied in the value of inventory, and because as Marx has pointed out, goods in the sphere of production tend to circulate against credit, working capital can be defined as the value of inventory plus credit given less credit taken.

Viewed this way working or circulating capital has important consequences. It will always exceed the value of inventory. This excess results from the fact that credit given (a current asset) must always exceed the value of the credit taken (a current liability). This is because the value of inputs will be less than the value of outputs which include value newly added. Thus, as sales exceeds purchases so too must the credit belonging to sales (given) compared to the credit belonging to purchases (taken).

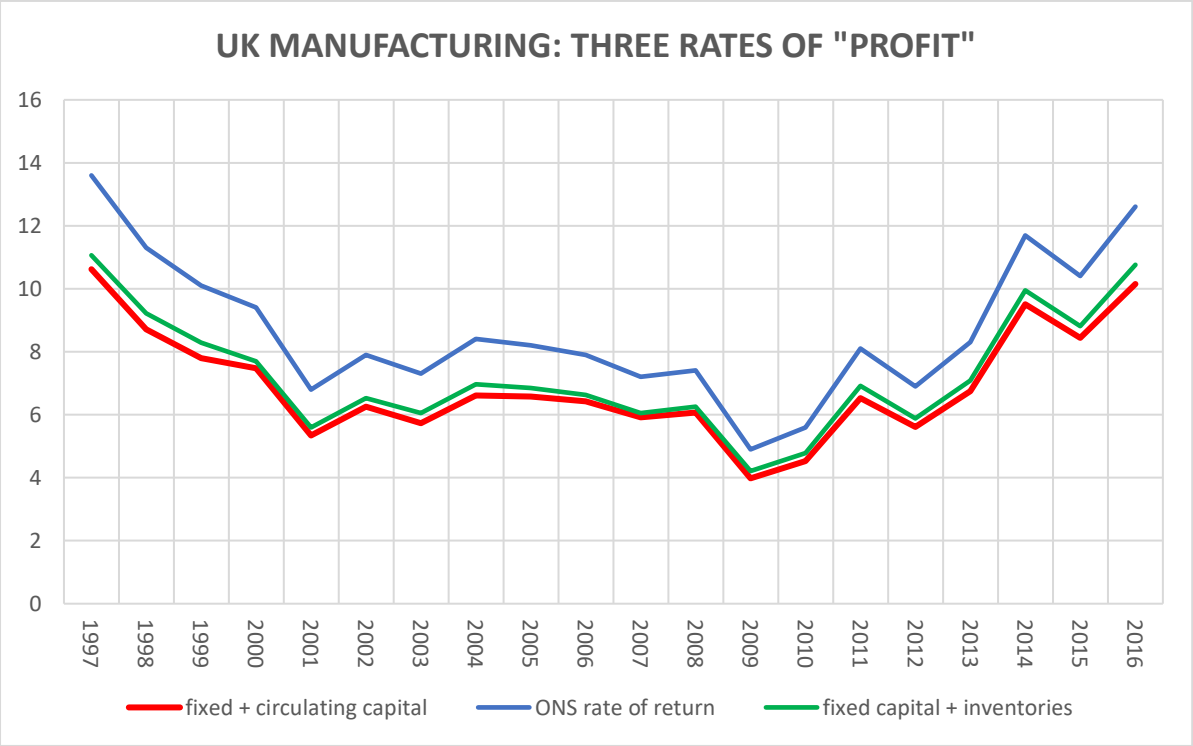
Nevertheless, the value of inventory is the largest component of circulating capital. This being so it is likely that when inventory is added to fixed capital, and the enhanced rate of return is obtained, it will be closer to the rate of profit than it will be to the rate of return based solely on fixed capital. Having proposed this; we can now turn to the graphs below for vindication of this hypothesis.

Graph 1.



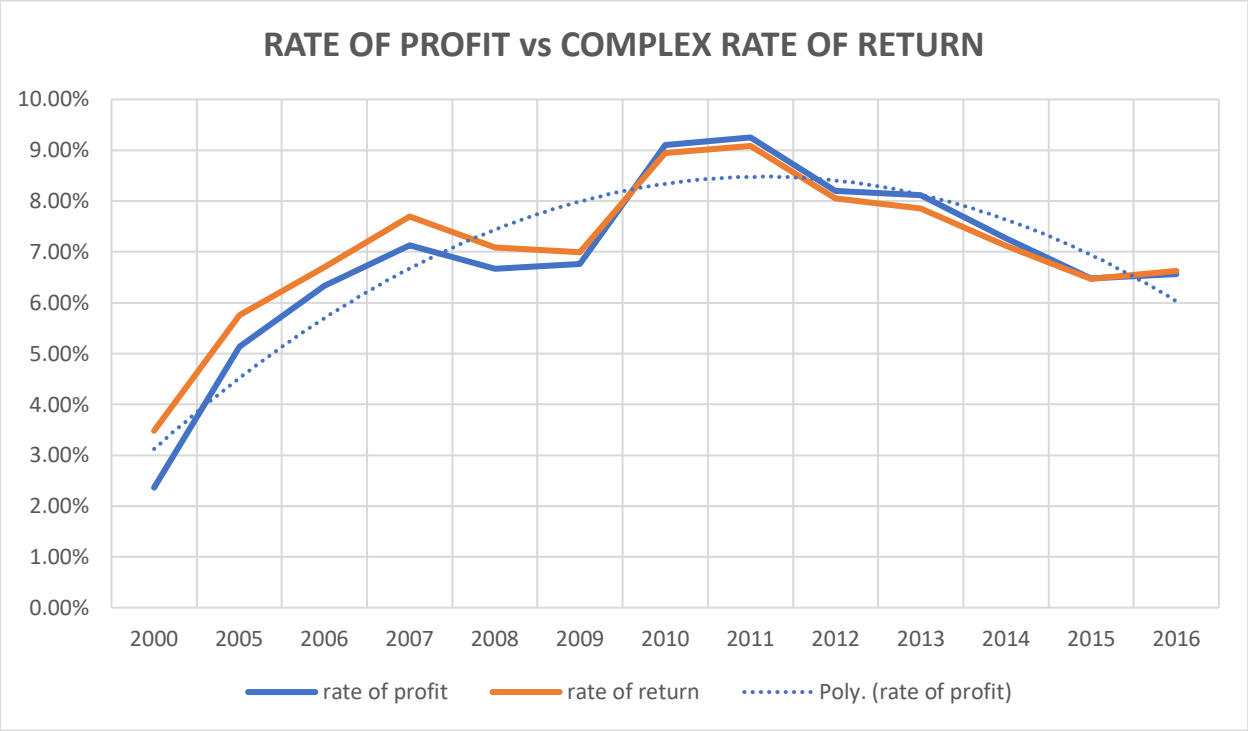
(Sources: Fixed Capital Table 3.1ESI, Inventories Table 5.8.5B & Profts Table 6.17D)

Graph 2.



(Source: See associated spreadsheet.)

Graph 3.



(Source: https://theplanningmotivedotcom.files.wordpress.com/2018/07/chinas-debt-problems-need-to-be-resolved-pdf.pdf)

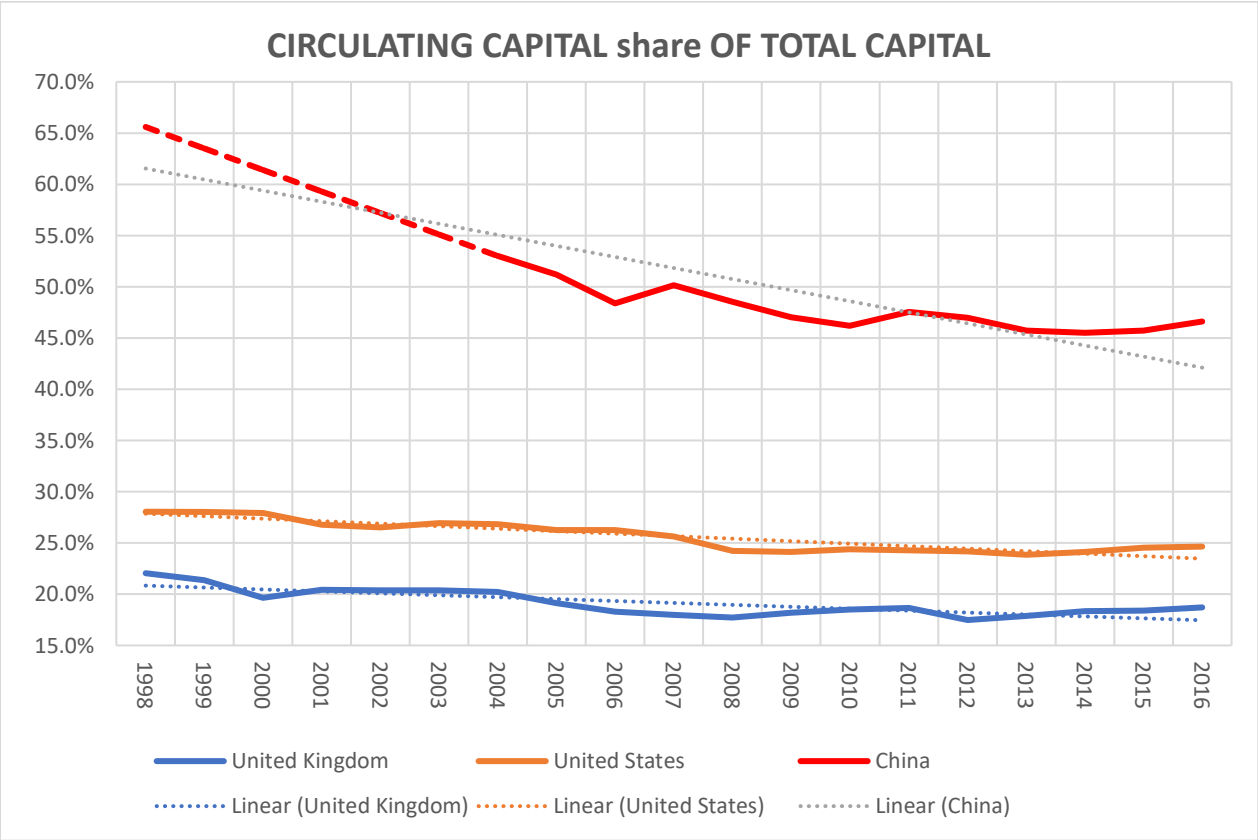
In all cases, the enhanced rate of return lies closer to the actual rate of profit than it does to the simple rate of return based solely on fixed capital. In the UK it lies much closer to the actual rate of profit than in the US. The same applies to China where unfortunately the Statistical Bureau of China does not provide data for industrial fixed assets on their own. The reason for the closer proximity in the UK is due to a rate of turnover that is 5% faster than the US, latterly around 4.8 compared to the US of around 4.5. Higher turnovers reduce circulating capital. In addition, British Manufacturing retains relatively more inventory than does US manufacturing.

These graphs compare rates within a country not between countries. The profits or net surplus used, are not commensurate.

There is an additional hypothesis whose confirmation is needed. It is proposed that as the composition of capital rises due to the growth of fixed capital, circulating capital as a share of total capital will decline. This is confirmed by Graph 4 below. It shows the steady decline in the share of circulating capital compared to total capital (circulating + fixed). In the case of the more steroidal China, where fixed capital is growing much more quickly, the fall is much sharper. (Please note that the broken line in the China Graph is due to extrapolation. China produces a discontinuous series which omits some years. Hence only 2000, 2005 and 2008 onwards are actual data points.)

The slowdown in the collective trends since 2014 is primarily due to the fall in turnovers which has increased circulating capital as a share of gross output. This synchronised slowdown since 2013/4 in turnovers around the world, and, the consequent fall in the trend of global profits, is of the highest importance and shows that globalisation began to falter long before Trump took a political stick to it.

Graph 4.



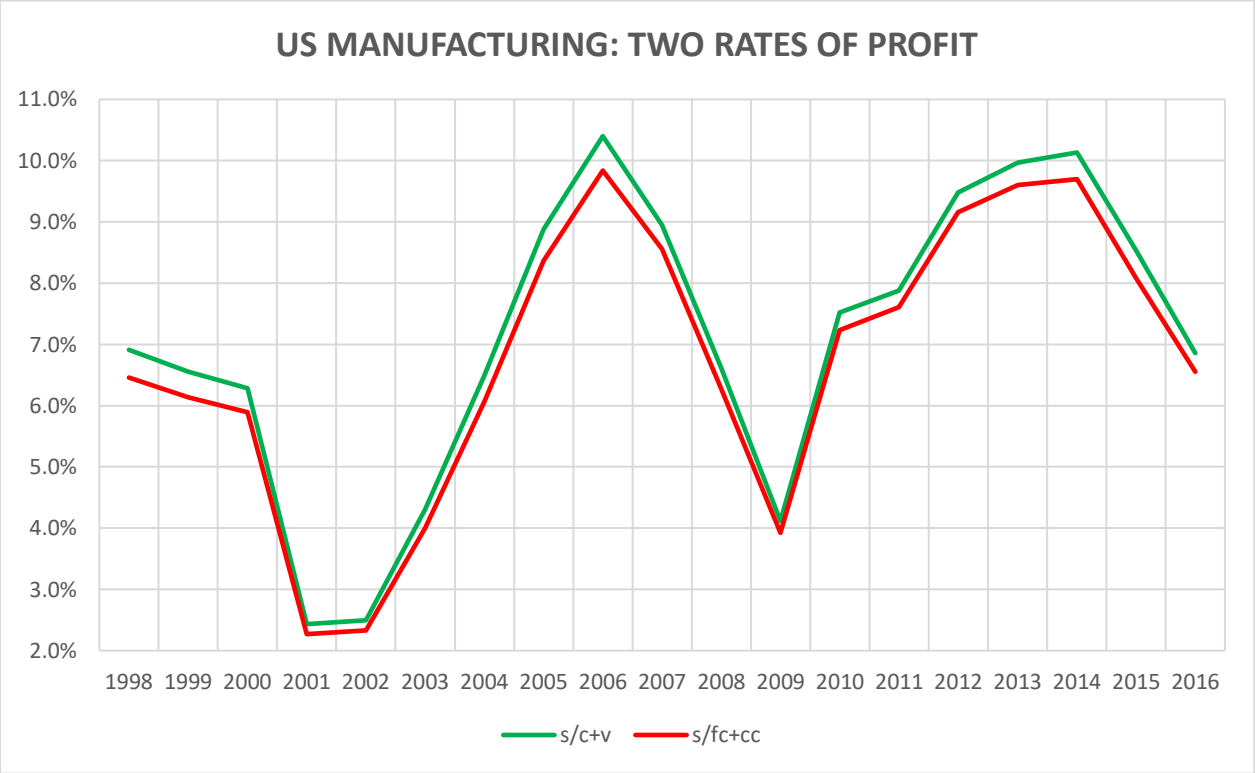
In conclusion.

Marx posited the rate of profit as being s/c+v where c stands for constant capital (fixed plus inventory) and v stood for variable capital. The turnover formula allows us to distil variable capital from annual wages just as it allows us to distil circulating capital from gross output. However, as the composition of capital rises so using the formula s/fc+cc, where fc stands for fixed capital and cc for circulating capital, becomes more important. The reason is that workers not only work with additional fixed capital, but with additional inputs as well. Furthermore, modern capitalism has outsourced many of its functions in a way that was not present in Marx's day and which today adds to the volume and value of inputs.

When we consider variable capital as a share of total capital in US manufacturing, it only represents 6% of total capital, rather than the 24.7% occupied by circulating capital. This should yield differing rates of profit. Once again the hypothesis put forward, is that as circulating capital is larger than inventory plus variable capital, due to these additional inputs, it should register a lower rate of profit. Once again this is confirmed by the final graph below.

As far as the capitalist investor is concerned, the costs they take into account, go beyond fixed capital, inventory and wages. They include purchasing expertise such as environmental impact assessments or engineering or software expertise. If these consultants work for a specialist consulting firm, or functions such as payroll, accounting, or marketing are outsourced to firms, then the value of inputs grows. As production has become more socialised, and this is not a function of composition only, but of specialisation, so the number of inputs into firms has grown, and with it circulating capital.

Graph 5.



There is not much difference between the two rates. But one point of observation is needed which leads to my concluding remarks, and that is how rates open up at the peak of the trend. This is often due to a fall in the rate of circulation as the metabolism of capitalism grows constipated. Importantly, it is the opening up of the rates which tends to be a harbinger of an impending fall in the rate of profit.

But it can be argued, the trends between all the rates follow the same trajectory. They either grow together or fall together. This is undeniable. But this is not due to the uniformity of the denominator but to the uniformity of the numerator. The same amount of profit is used in all the identities. It is this that sets the trend.

Trend however is not all important. The absolute level of the rate of profit carries its own importance. Capitalists will only invest, when the rate of profit exceeds their investment threshold. A rising rate of profit, but one below this threshold will not induce investment. This threshold is normally set by the cost of capital, inflation and the need to realise a surplus once the original investment is paid back.

It is at this point that the rate of return turns out to be useless. An abstraction in a concrete world. The rate of return turns out to be excessive. It often exceeds the investment threshold when the actual rate of profit falls below it. This difference peaked in the US in 2006 at over 3% and in 2014 at just under 3%. In relative terms they differed by a third. This level of significance cannot be ignored. It is equivalent to a cost of capital of 3% versus a cost of capital of 6%. Something which no observant capitalist would ignore.

The most concrete rate of profit is s/fc+cc. The forecast of its proximity to s/c+v, together with the prediction that it will lie below c+v, speaks to the accuracy of turnover formula. We should be using this most concrete rate of profit, made possible by the turnover formula.

Brian Green, September 2018.