

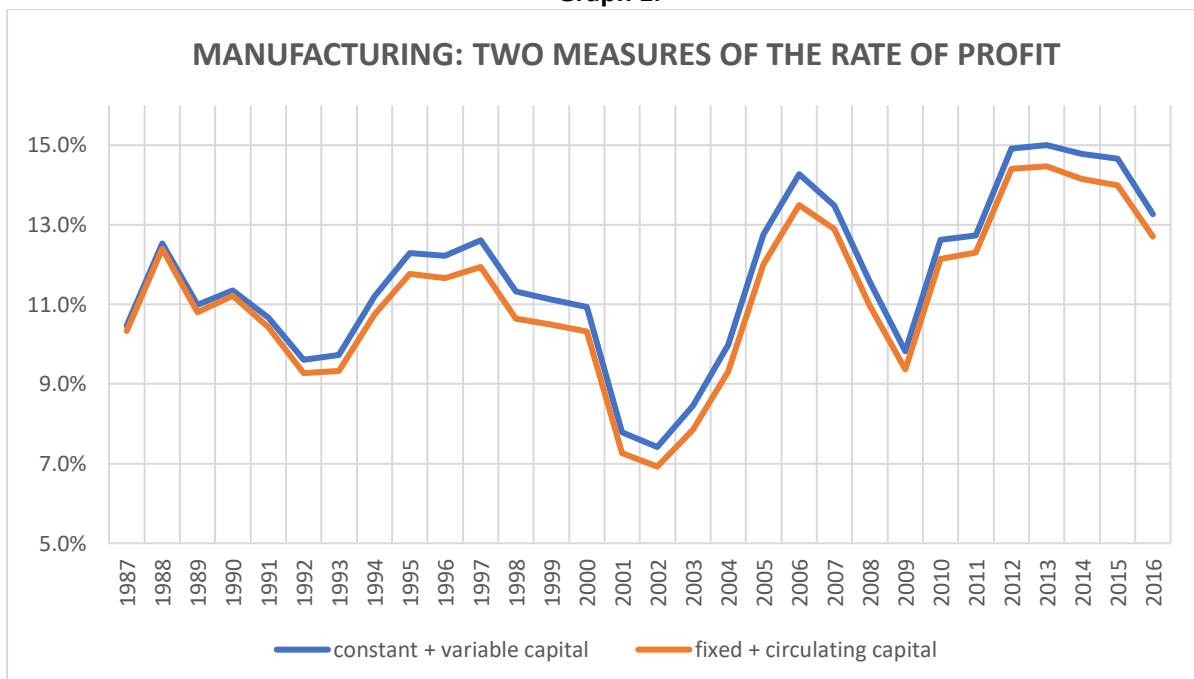
## INTRODUCING A MORE CONCRETE RATE OF PROFIT.

*Marxists are divided on the role the rate of profit plays in determining the rhythm of capitalist production. This is partly due to inexact measurement of the rate of profit itself. In this posting a brand new and more precise method for measuring the rate is introduced. Here the denominator is no longer C+v but fixed capital plus circulating capital. The latter captures more capital invested in the production of a given quantum of profit, thus it is closer to the costings on which actual decisions to invest or not are made by capitalists. This posting has been made possible by the release last month of produced (fixed) assets for 2016 by the BEA.*

The measurement of the rate of profit by means of fixed and circulating capital is only made possible by the turnover formula. Without this formula it would be impossible to reduce the cost-of-gross-output to working capital. Gross output is  $c+v+s$  and the cost-of-gross-output is  $c+v$ . Annual gross output less the annual surplus yields the annual cost-of-gross-output. However, this should not be confused with circulating capital. To arrive at circulating or working capital, the annual cost-of-gross-output has to be reduced by the number of times it turns over in a calendar year. Hence the formula for yielding working or circulating capital is:

$$\frac{\text{Annual cost of gross output}}{\text{Number of annual turnovers}} = \text{working (circulating) capital}$$

Graph 1.



(Sources: Table 6.1C&D for net value added, 6.2C&D for compensation, 5.8.5A&B for inventories, NON-RESIDENTIAL FIXED ASSETS TABLE 6.1 for current-cost fixed capital, GDP-by-industry for gross output and turnovers.)

In Graph 1 above, are found two rates of profit. The top blue graph is the original expression of the rate of profit. It is  $s/C+v$  where C stands for fixed assets and inventory and v stands for variable capital. In turn, variable capital is arrived at by dividing annual compensation by the annual number of turnovers found in manufacturing. (For reference, I have provided a graph plotting turnover at the end of this article.) The bottom graph is the new rate based on fixed + working capital. Finally, s for surplus, is arrived at by subtracting annual compensation from annual net value added.

Just as we do not calculate the annual rate of profit over annual wages (compensation) plus constant capital, so neither do we calculate the new annual rate of profit by adding the annual cost of gross output to constant capital. In both cases, the annual figures are reduced to single turnover figures. In the case of annual compensation, it is reduced to variable capital, and in the case of the annual cost of gross output, it is reduced to working capital.

If we did not reduce them, the rate of profit would be dramatically deflated. In 2016 annual compensation was \$1,012.4 billion while variable capital was only \$229.5 billion. Similarly, the cost of gross output was \$5262.1 billion while working capital was only \$1192.7 billion. In 2016 the rate of profit was 13.6% for C+v and 12.7% for fixed + circulating capital. Had we used annual compensation and the annual cost of gross output, then the rates would have fallen to 9.2% and 6.9% respectively.

The correct methodology is to use single period figures for variable capital and working capital, because these fluid forms of capital recycle. In 2016 the average production/circulation period was 83 days (365 days divided by 4.41 turnovers). Capitalists only required sufficient variable or working capital for 83 days. After 83 days on average, when the goods produced in this period were sold, they were more than reimbursed for the money they spent during this time. They started with \$x at the onset of the production cycle, they spent this \$x during the course of the 83 days, only for this money to return to them with a profit after the completion of the cycle. The same sum of capital paid out in wages during 2016, passed from the hands of the employer to his or her workers 4.41 times, and on 4.41 occasions employers were repaid this money in the form of sales revenue.

The reason the rate of profit is based on annualised profits, is that this allows capitals with different rates of turnover to be made commensurate. A faster turnover capital may use more capital than a slower turnover capital but each will yield a given quantity of profit per year. That annual quantity of profit can then be measured over the capital that generated it. In the former case, annual profit may be greater, but so too may be the amount of capital laid out originally. What is important to the investor is how fast his or her capital is growing in comparison to other capitals each year, or what is the same thing, is his or her annual rate of profit above or below the average.

The most important observation from the graph above is that the rate of profit based on fixed + working capital is lower than the rate based on c+v. The variation between the two rates is 0.5% to 0.9%, a difference of around +5%. The variation is greatest at the top end of the business cycle, as well as the bottom end. This proves that the movement of working capital is more volatile than the movement of inventory and variable capital on its own. Finally, the two rates never contradict each other. They move in tandem. In fact, their proximity proves the validity of both methods.

This is an expected result. Fixed + circulating capital yields total capital which is larger than C+v. The reason is not hard to find. Let us take the electricity which every corporation must purchase to produce its product and to sell it. Some of the electricity will be used up in the factory producing the items for sale. Its cost will be added to the value of inventory as it is worked up. In accounting terms, this cost of electricity appears in the Trading Account.

But that is not the only place electricity is used. What about the office where the admin, sales, accounting etc. staff work? It is needed to light and heat their offices and power their equipment. Without these workers, whatever is produced in the factories will end up rusting or rotting or conversely the materials needed to produce the items for sale will not be ordered. Under capitalism these workers and the offices they occupy, forms part of the metabolism of production and distribution. In accounting terms, the cost of electricity consumed in the offices will appear in the Profit and Loss Account.

The national accounts do not make a distinction between the electricity consumed in factories or in offices. Intermediate sales for the manufacturing industry as far as it relates to utilities, captures the entirety of the electricity purchased by the manufacturing industry. This is not problematic. When a capitalist decides to make an investment, (s)he is just as interested in how much the office will cost to run as they with their factory expenses. Therefore, we may assume that plotting a rate of profit based on fixed and circulating capital is closer to the cost calculations made by industrial capitalists when deciding to invest or not.

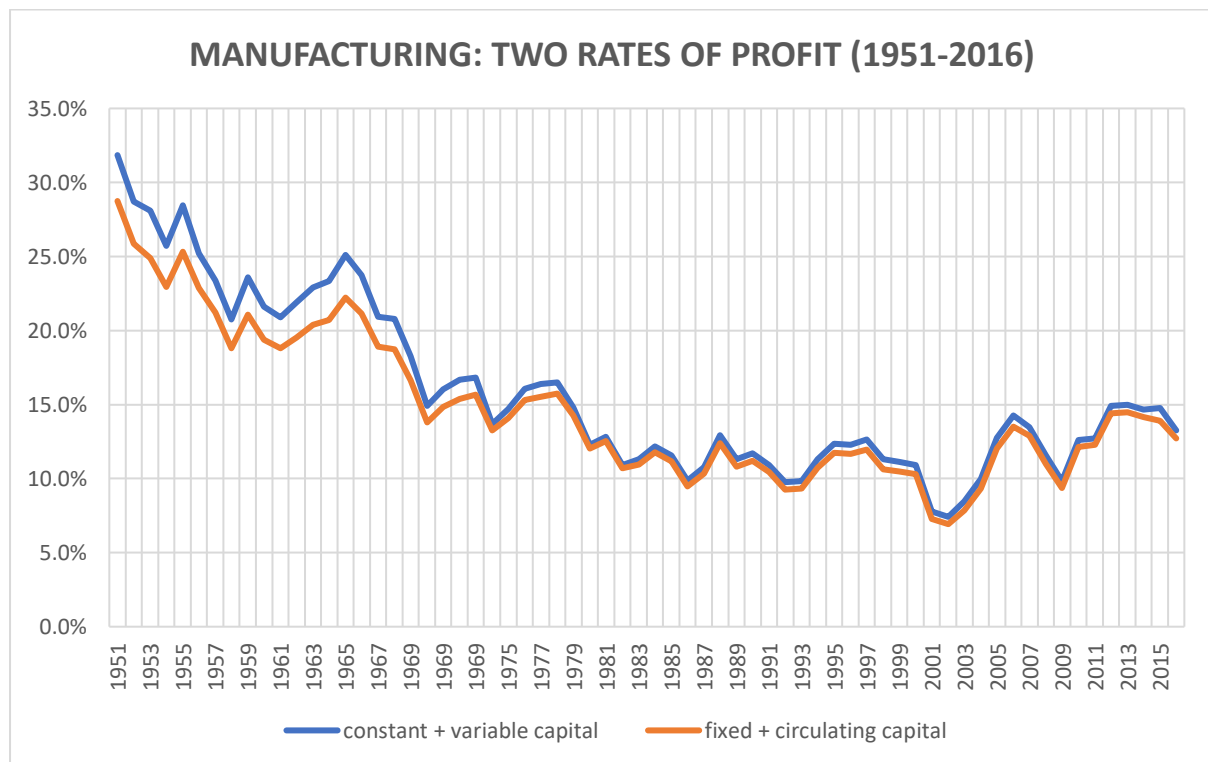
However, the purists within our ranks will point to inputs like advertising or legal fees rather than electricity which is sometimes utilised by productive labour and sometimes not. Expenditures such as advertising and legal fees on the other hand, always represent unproductive labour without exception, and therefore, always constitute a deduction from the mass of profits in all circumstances. Their net effect is to reduce the rate of profit.

The same result occurs, when instead of reducing profits, they increase the amount of capital. We end up with the same reduced rate of profit. This is what happens when these intermediate inputs form part of circulating capital enlarging it. Whatever arguments are deployed, the rate of profit based on fixed and circulating capital is more concrete. It allows us to get into the head of the investor.

**A longer perspective.**

Graph 1, which is based on the current BEA series beginning in 1987, provides a medium-term perspective. Graph Two provides a perspective twice as long. Once again, the rate of profit based on fixed + circulating capital always falls below that the rate of profit based on C+v. I cannot account for the discrepancy between the two graphs before 1969. I suspect it has to do with the way the data was compiled at the time, before the revisions which based the SNA on industry accounts which is why the first graph is confined to the modern series beginning in 1987.

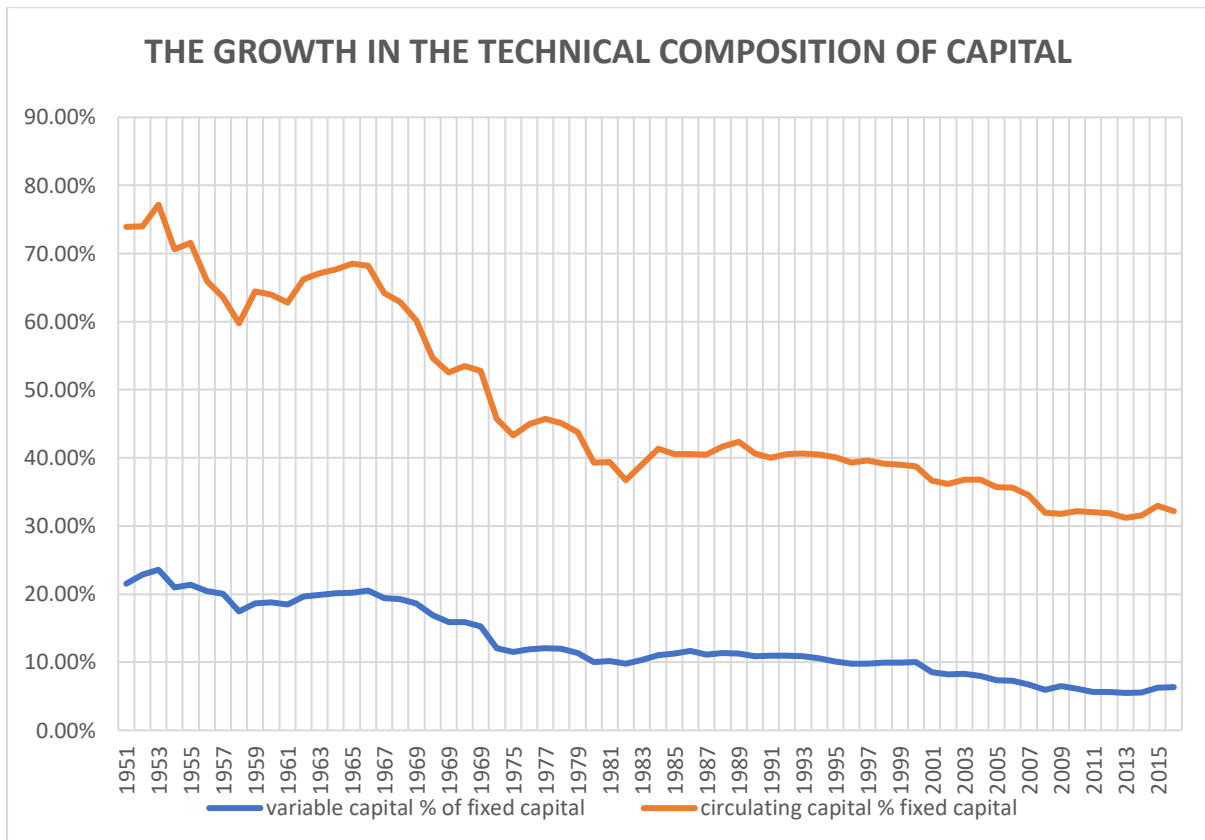
**Graph 2.**



(Sources: as per graph 1.)

I will not comment on the above graph except to say that the fall in rate of profit in both cases was less steep than the rate of return which is commonly used by many Marxists as a proxy for the rate of profit. This results from the missing variable capital, and its changing weight within total capital due to changes in the technical composition of capital. This is described in the Graph 3 below. Nonetheless the fall in the rates of profit was sufficient to end the post war boom and plunge the US economy into recurring economic crises.

**Graph 3.**



(Sources: as per graph 1.)

We note that variable capital relative to fixed capital has fallen from above 20% to around 6% today. Given the magnitude of variable capital 60 years ago compared to today, a difference of 15% in relative terms, its omission has meant the rate of profit was overestimated then and underestimated now in comparison. This accounts for the less steep, but still decisive, fall in the rate of profit up to 1987. Of note, is the step like fall in the relative weight of variable capital between 1966 and 1981 and then again between 2000 and 2008. Since 2011 there has been no fall, suggesting the current phase of I.T. innovation has exhausted itself.

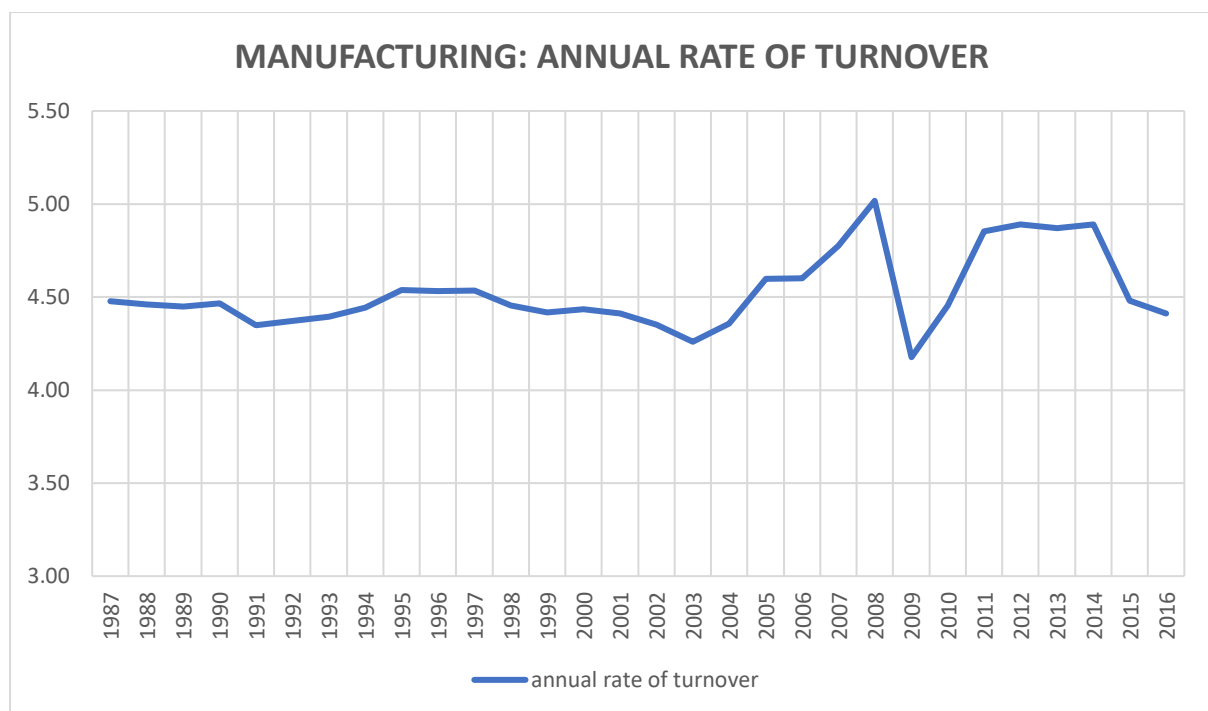
Turning to the relation between circulating and fixed capital, the first observation to note is that the relative weight of circulating capital is larger than usually assumed. This has great relevance for crisis theory which hitherto has concentrated solely on fixed capital. The second observation is this, whereas the v/c ratio has fallen by two thirds, the ratio of circulating to fixed capital has fallen by only half. This smaller fall has occurred despite the rapid fall in inventories. This suggests that there has been an increase in the inclusion of non-productive inputs such as advertising, marketing, legal fees etc.

**In conclusion.**

This posting is one of two. The subsequent posting will be an audit of the quality of both rates of profit. It will quantify the changes to the rate of profit by adjusting for the rise in earnings of the top 1%, together with the increase in capital and depreciation resulting from the deleterious revision to the System of National Accounts in 2013 when Research and Development together with in-house software were capitalised. It will also quantify the effect of this capitalisation on turnovers. In the sense of a real audit, this post will qualify the accounts, for hidden under the nominal rates of profit, lies substantial sources of surplus value whose impact on the markets has been significant.

In the meantime, the reader can reflect once more on the importance of introducing turnovers to our analysis. Without the rate of turnover, it would be impossible to convert the cost-of-gross-output into working capital and thus formulate this more concrete approximation of the rate of profit. The rate of profit is the pulse of capitalism. It is the hidden hand that shapes and moves the economy. The better we understand the rate, the more connections we make, the better we are at describing the movement of the underlying economy and anticipating any changes to that movement.

**Reference graph.**



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

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