

PART 1. CIRCULATING CAPITAL 1997 -2017

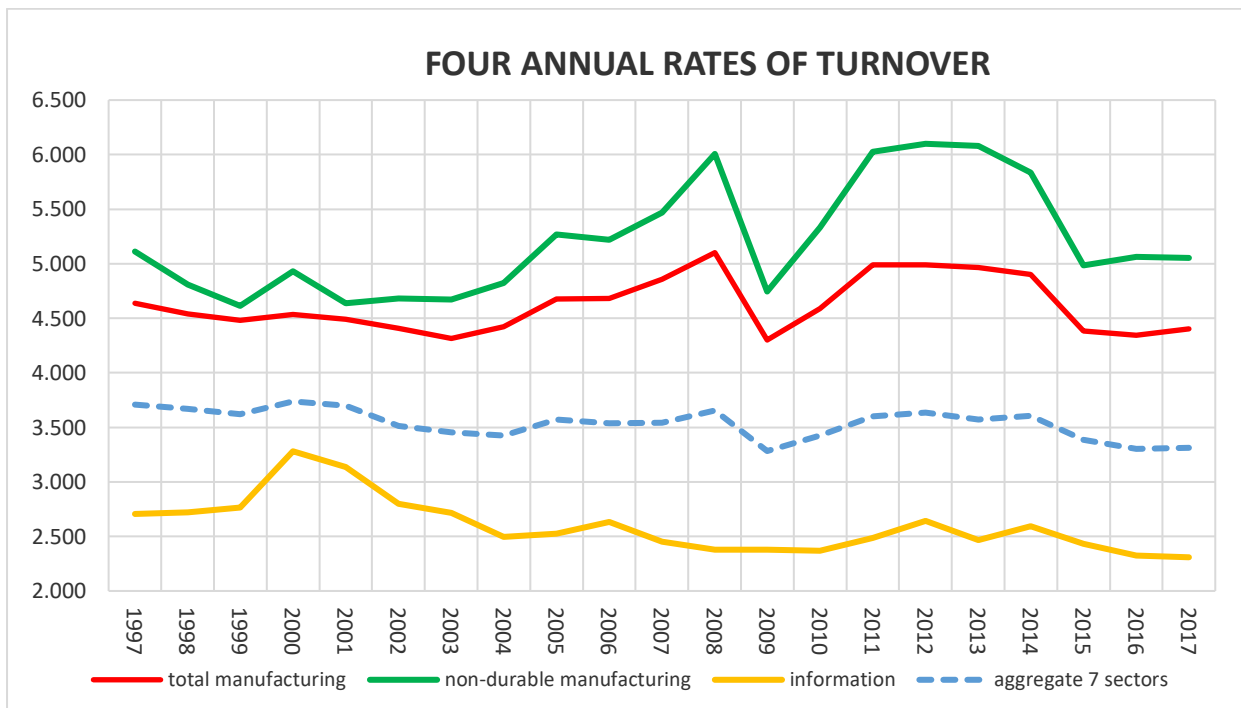
The dance of circulating capital around fixed capital.

The BEA recently released the 2017 data for Fixed Assets as well as GDP-by-industry. This has enabled the determination of the rates of turnover covering 2017 together with circulating capital. This posting concentrates on the relation between circulating and fixed capital to show the role circulating capital plays in both promoting and resolving crises. This posting will be followed by part 2, which will look at cash flow against both gross fixed investment and changes to circulating capital. Further parts are planned to look at whether immaterial production is beginning to alter the relation between inputs and outputs.

The rate of turnover which is the period of turnover of circulating capital (M...M⁺) divided by a calendar year is crucial to understanding the movement of capital. In the graph below is to be found the rates of turnover in 4 key industries. The graph demonstrates that each sector embodies a unique rate based on the technical conditions and credit conditions that shape that industry.

The aggregate rate (dotted line) requires additional elaboration. It is a compound rate comprising seven major sectors, the details of which can be found under the graph. I have excluded transport because it is an amalgam of goods and passenger transport. At \$12 trillion for Gross Output and \$5.6 trillion for Gross Value Added, these seven sectors account for over 50% of domestic business. It is thus representative of the non-financial, non-household and non-governmental side of the economy. This rate will thus be applied to non-financial corporate business in order to determine gross output. Unfortunately, the BEA does not provide gross output for corporate business.

Graph 1.

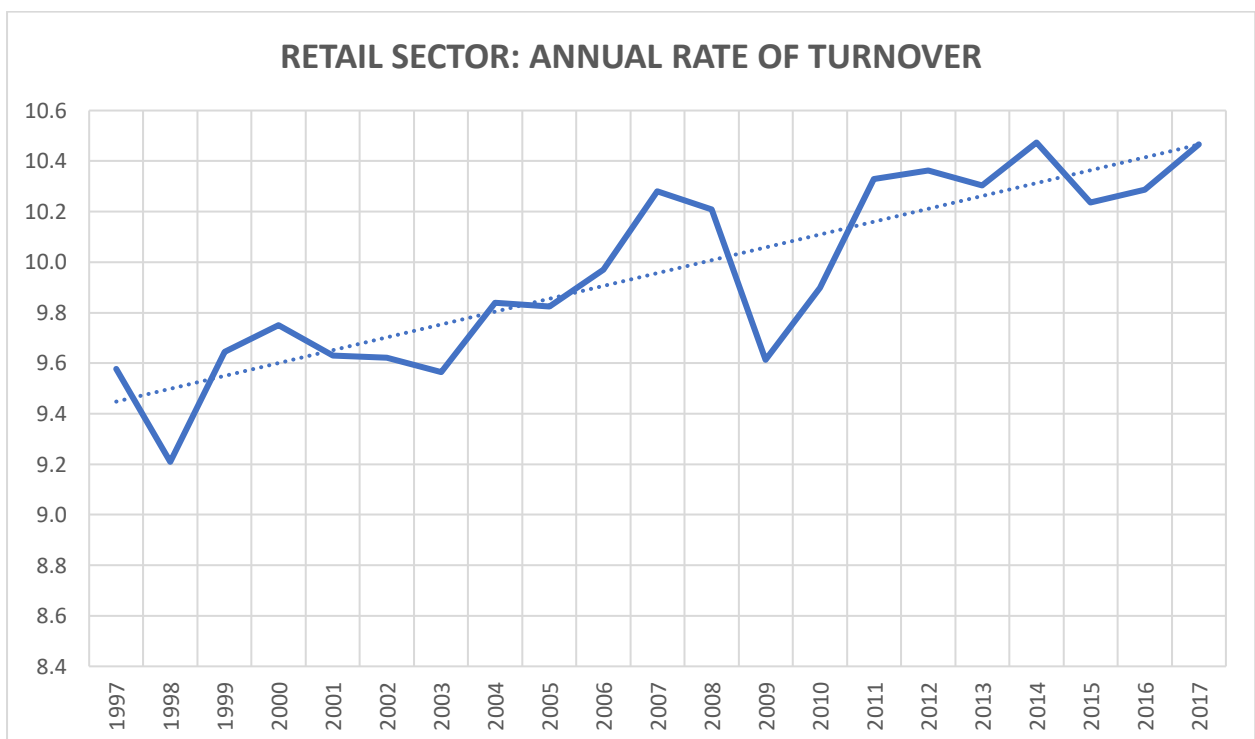


(Source: GDP-by-industry, KLEMS, Composition of Gross Output by industry release date 1st December 2018.
 Note. Aggregate = agriculture + mining + utilities + construction + manufacturing + information + arts, entertainment sector.)

It is worth pointing out again that the turnover formula yields results which are confounded whenever intermediate sales are turned into final sales. This has the effect of boosting the value of Gross Value Added rather than reducing it relative to Gross Output. The result is a slowdown in turnover. One such factor is Intellectual Property which includes Research & Development as well as in-house software. Together they constitute two thirds of the entire value of Intellectual Property. When they were included five years ago they boosted final sales by 3%. This helps explain the slowdown in the rate of turnover within IP dense industries such as Information in the graph below, and conversely, why non-durable manufacturing has shown the opposite trend.

As previously stated, it is my intention to always include the rate of turnover for retail as it is the most sensitive pulse oximeter measuring the heartbeat of the economy. It shows a pattern different to that found in production itself. This is not contradictory. Rather it expresses two realities. Firstly, the nature of inequality where the top 10% have the discretionary spending power of the bottom 80% of society and who have disproportionately benefited from bubble (capital) gains. It is the rich who have driven retail spending and also shaped it. Secondly, final sales in the USA exceeds the value of GDP because a significant portion of these sales are derived from foreign production, giving rise to a growing trade deficit. Thus, the trend in retail sales in the US, the world's biggest importer, is a marker for conditions in the world economy itself.

Graph 2.



(Sources: GDP-by-industry, KLEMS, Composition of Gross Output by industry release date 1st December 2018 and FRED table (MRTSSM44000USS) for retail sales without eating out.)

Obtaining the rate of turnover for retail is more complicated than for production itself. The BEA correctly does not count merchandise for resale as intermediate sales, because they have been taken in other industries, for example in manufacturing or wholesale. These stocks need to be added back in order to obtain the real rate of turnover. (View Note 1 at the end of the article for methodology.) The formula is now $GO+RS/GVA + (IS + RS)/GVA$ where RS stands for cost of retail sales and IS for Intermediate Sales within the retail sector (eg heat, rent, shelving, refrigeration) etc.

The decline in inventory to fixed capital ratios

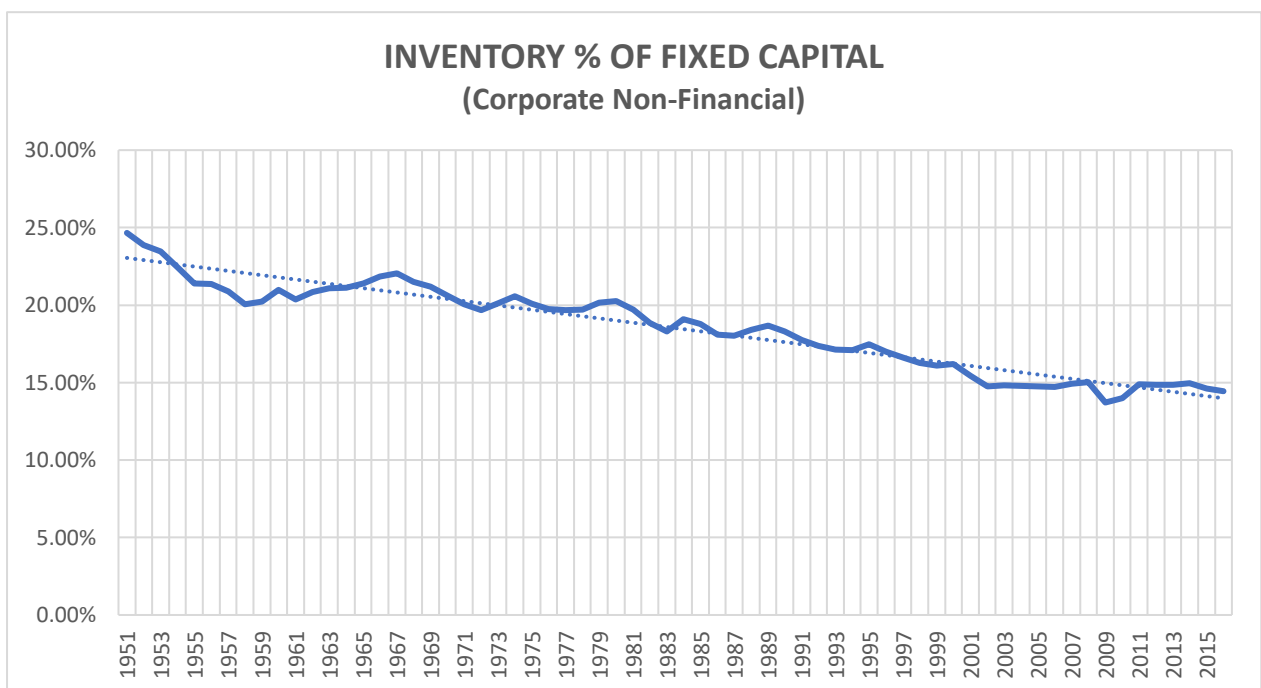
In an exchange with Boffy on Michael Robert's posting "The US Rate of Profit in 2017" <https://wordpress.com/read/feeds/313842/posts/2053027673> I insisted that inventories cheapen more quickly than does fixed capital. In other words, the value of inventory declines relative to fixed capital. This is consistent with the nature of market value (Chapter 10, Volume 3). Market value unlike abstract value is the weighted average labour time needed to produce any product. Market value changes in proportion to the weighted change in labour time. There are a number of regulators which govern the weight of change or the weight of investment. Firstly, it depends on whether market conditions allow market price to be set by the less efficient producers. Secondly, whether the industrial cycle is in an upswing phase or a recessionary phase.

We should avoid describing the change in value as an immediate, single change. Marx used such examples in an explanatory way, not a concrete way. Thus, if a new technique is introduced which halves labour time, market value is not halved all at once whereas value-in-general is. Instead, the fall in market value expresses the weight of change occurring in that industry over time. This is the concrete way of addressing value, and when dealing with data, the only way.

When Marx spoke of circulating and fixed capital he often referred to circulating as fluid capital, the opposite of fixed. The gestation of fixed capital is measured in years, that of fluid capital, in months. Put another way, the circulation period for fixed capital is measured in multiple years. For this reason, circulating capital is more responsive to weighted change than is fixed capital because investment periods are shorter.

These results are shown in Graph 3 which was prepared last year. It shows that despite the volume of stocks increasing, their value relative to fixed capital has fallen. As inventory is a large component of circulating capital, its cheapening is one of the reasons the value of circulating capital falls relative to fixed capital.

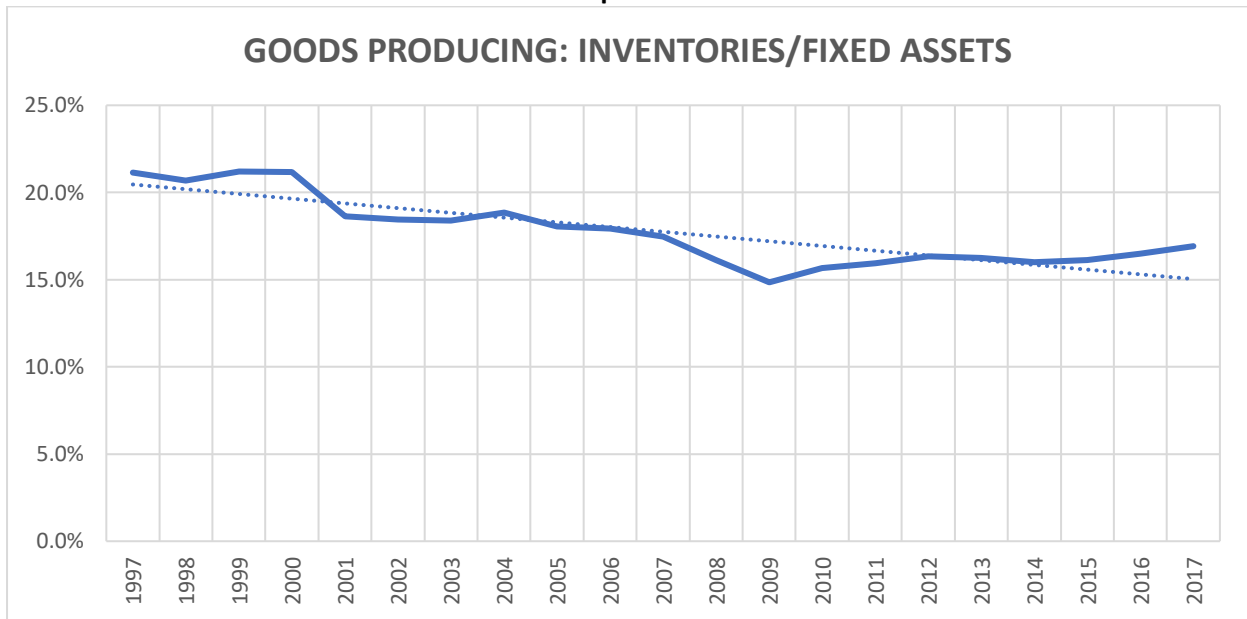
Graph 3.



(Sources: Table 6.1 for fixed assets and FRED Table IABSNNCB for inventories.)

The same effect is seen in the goods sector. As the average composition of capital is higher here, the same result, which took forty years in graph 3, took just 8 years from 2000 to 2008 in the goods producing sector. The only industry which has not seen a fall over the last twenty years has been manufacturing. This is more likely due to the fall in the rate of fixed investment itself following the financial crash. A case of sweating the assets.

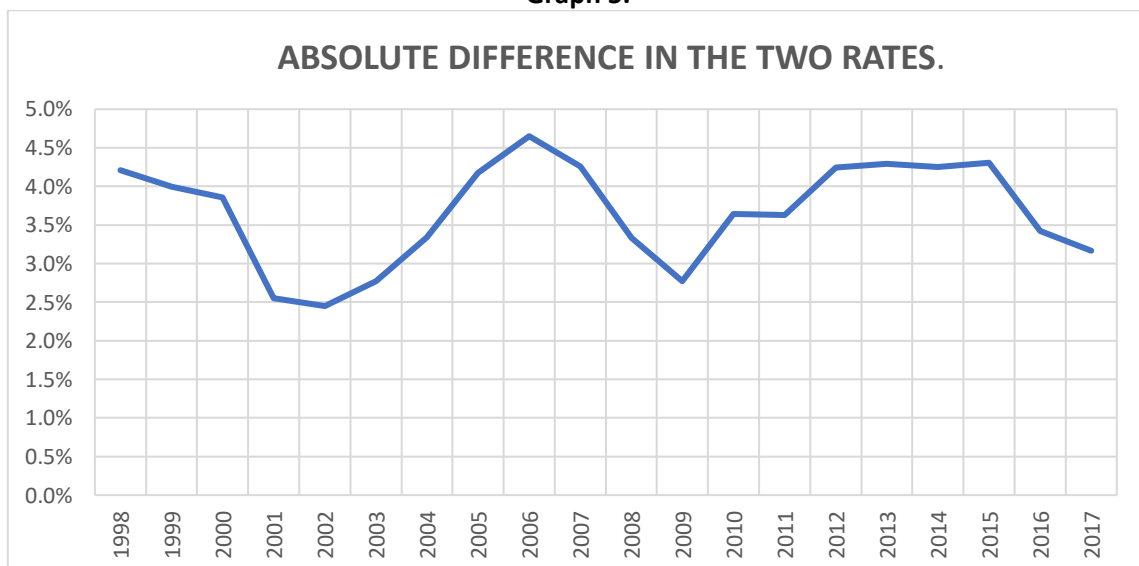
Graph 4.



The dance of circulating capital.

In previous postings the movement of circulating capital during the industrial cycle has been presented. It grows in the upswing, peaking at the end of the cycle and plummeting in the subsequent recession, before recovering in the phase of rising animation. Its movement is much more volatile. This is highlighted in Graph 5 taken from a previous posting on the rate of profit in 2017. This graph shows the difference between the rate of profit and the rate of return where the former includes circulating capital while the latter does not.

Graph 5.



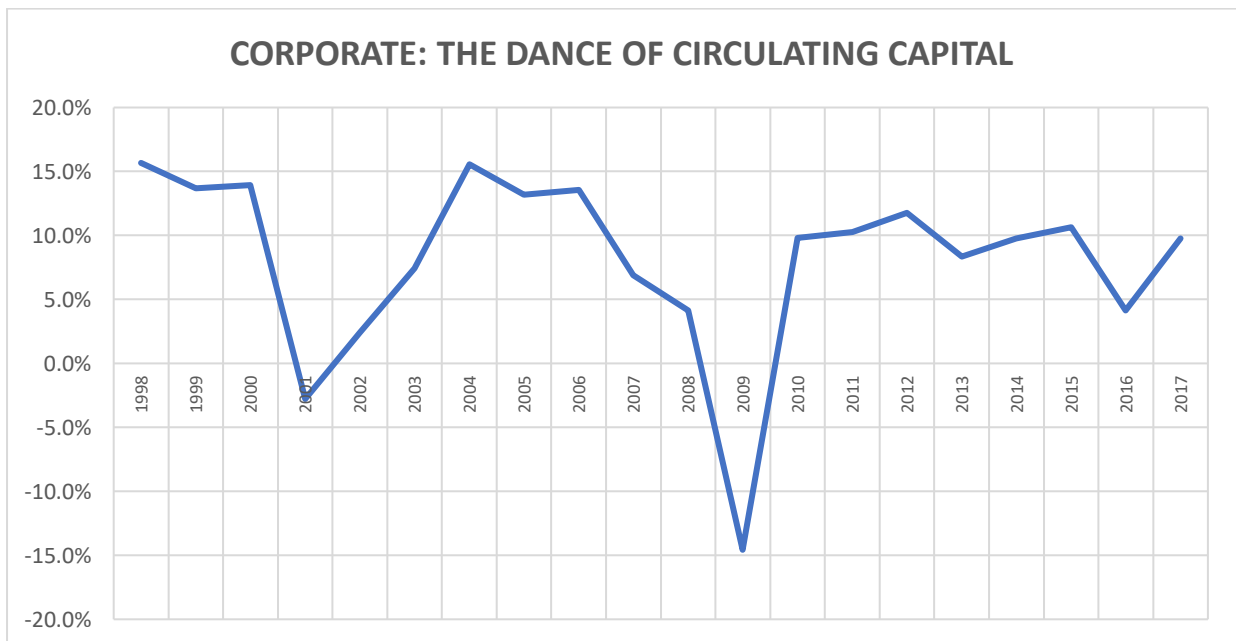
As a result of the differential growth in circulating and fixed capital, total capital diverges from fixed capital by the difference in circulating capital. The inverse undulations in the graph above can only be explained by the divergences between fixed and total capital. When circulating capital expands total capital in the upswing, the gap between the two rates expands, and when circulating capital collapses in the recession, the gap between fixed capital and total capital reduces, reducing the gap in the two rates. This explains the gap rising to 4.5% in the upturn and falling to 2.5% in the recession. The fall in circulating capital is therefore one of the counter-cyclical factors raising the rate of profit. The fall in circulating capital over the two cycles resulted in an average 2% improvement in the rate of profit.

In this posting a different methodology is adopted for the first time. The last two graphs below look at the difference between the annual increase or decrease in circulating capital versus the annual increase in gross fixed capital investment. In other words, the investment or de-investment in circulating capital is measured against the investment in fixed assets as a ratio.

The purpose of this methodology is to bring out the volatility of circulating capital. Graph 5 is more volatile than graph 4 though it shares the major shapes. This volatility has never been seen before because of our inability to measure circulating capital. But this shape is predicted by Marx and Engels who recognised that investment would expand or contract depending on the phase of the cycle, itself a product of the movement in profit.

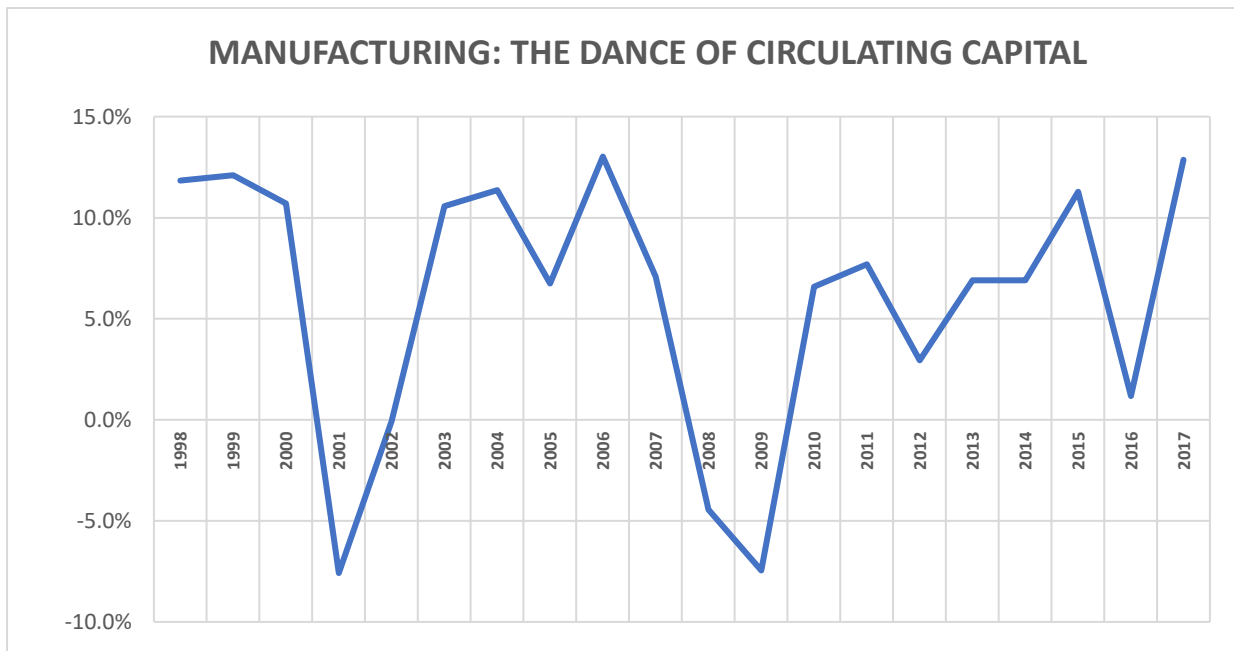
To understand the graphs better, I have attached the relevant Excel spreadsheets to show the calculations.

Graph 6.



In the corporate sector I have used the compound 7 industry turnover to yield gross output. The profile is not dissimilar to that found in Graph 7. They share the same troughs, 2001, 2009 and 2016, though the shape of the peak in 2006 differs. The only difference is the ratio dances more vigorously in the manufacturing sector because circulating capital changes more abruptly there.

Graph 7.



What do these two graphs reveal? They reveal that circulating capital grows **relatively** faster in the upswing than does fixed capital. In the latter phases of the cycle the rate of fixed capital accelerates reducing the gap between the two. Hence in the corporate sector this acceleration in fixed capital occurs around 2004 and 2012. This does not mean fixed capital out-accelerates circulating capital, only that the faster tempo of fixed investment reduces the gap.

What is really significant is what occurs in periods of recession. These phases take place in 2001, 2008/9 and the pseudo recession of 2016. In these phases circulating capital contracts absolutely relative to fixed capital investment. These graphs thus show the pivotal role played by circulating capital both in response to crisis and in response to the need to restore profitability by reducing the amount of capital invested in production.

The fall in circulating capital is synonymous with the reduction in excess inventories and excess credit. Thus, less working capital is employed, especially on the employment of labour power, and this reduces the total expenditure of capital. (It is this fall into negative territory on the part of circulating capital that provides a subsidiary explanation why over the course of the whole cycle the average growth rate of circulating capital prevents it growing larger than fixed capital in the long run.)

The next posting in this series examines the “rate of cash flow” which comprises net surplus + depreciation divided by gross fixed investment plus changes to circulating capital. Previously, my calculations omitted the element of circulating capital. This indicator, by measuring EBITDA against the expenditure on total capital is a useful barometer for measuring the investment weather.

(Note 1). The BEA estimates GO and GVA by industry. To avoid duplication, only the sales within and between industries are measured. In the case of Retail, all merchandise for resale is omitted from intermediate sales because they have been taken elsewhere. To obtain accurate retail turnover these merchandise inputs need to be added back. The net surplus relating to retail is deducted from retail sales to obtain the cost of retail sales. When this is added to Gross Output an accurate turnover for retail is obtained. It is necessarily faster than inventory turnover because while the industry received credit it does not give credit as cash sales predominate.

Brian Green. November 2018.