Rate of profit: Trying to understand the difference
Michael Roberts Blog, 21 février 2012

There's been a big debate on my blog about what is the correct way to value capital accumulation when trying to measure the rate of profit in a capitalist economy. This debate has been around a long time, but kicked off again following my generally favourable review of Andrew Kliman's (AK) new book, *The failure of capitalist production* (see my posts, *Andrew Kliman and The Failure of Capitalist Production*, 8 December 2011 and *The rate of profit: the devil in the detail*, 15 January 2012). The issues are important for Marxist economists precisely because Marx considered his law of the tendency of the rate of profit to fall as the most important of all the laws of motion of capitalism. So how you measure the rate of profit is obviously key to reaching any conclusions on what is happening in a capitalist economy.

At the rub of the debate is whether the US rate of profit rose significantly after a trough in 1982 to just before the Great Recession or not. If it did, then many argue that the Marxist law of profitability played no role as a cause of the biggest slump in capitalism since 1929. The data from AK's book show that if you measure the US rate of profit based on historic cost (HC), the perceived rise in the rate since 1982 based on replacement cost (RC) measures disappears. That's why this measurement issue would appear to be important.

Marx measured the rate of profit as the surplus value created by the employed workforce in capitalist ventures divided by the cost of the means of production (machinery, plant, raw materials etc) plus the cost of employing the workforce (wages and other benefits paid). The surplus value is found by deducting the cost of employing the labour force from the overall income realised by the sale of the commodity in the market (so profit equals money realised from sale less money advanced for production, or M' less M). And the rate of profit is the profit realised divided by the capital advanced to realise it – or (M'-M)/M).

The big debate centres around whether you should measure the rate of profit on the basis of historic cost (HC) i.e. the original value in money terms of the investment at the beginning of the production cycle or on the basis of replacement costs (RC) i.e. the current cost at the end of the production cycle of the capital advanced . How can we distinguish the difference? I'll try with a few simple examples of the capitalist reproduction process.

First, let's assume that there is one capital or capitalist economy, or 'capital in general'. At this level of abstraction, there are not 'many capitals' competing with each other. Instead, we are dealing with the total value produced in an economy and the total profit appropriated by capital. This is exactly the same abstraction that Marx makes in explaining his law of profitability. So we have one capitalist representing the whole capitalist system.

Let's say this capitalist starts with some money (M), say M20. This M20 is equivalent to 20 hours of socially necessary labour time (SNLT), which is the average time it takes to produce a commodity that can be sold or realised on the market. It does not matter if M is gold, corn or fiat currency, as long as it is the monetary expression of socially necessary labour time (MELT). The capitalist now advances this M20 as capital to purchase means of production (MP10) and employ a labour force (V10). Assuming that the rate of surplus value is 100%, then the workforce generates new value of 20 (V10+S10) to make a commodity worth P30 (MP10+V10+S10). This is sold on the market for M30. The profit is thus M10 (S10); and the rate of profit is M10 divided by the capital advanced M20, or 50%.

But now let's say that, before the start of the next production cycle, it becomes possible to increase labour productivity and lower the SNLT by 20% for all the components that are need to make the commodity. The rate of surplus value at 100% is assumed unchanged. If we assume that the capitalist lives on air and does not use any of the money realised for a luxury way of life, there is now M30 available for investing in the new cycle. Assuming all this money is reinvested, then the capitalist now buys physical means of production that would have been valued at MP15 in SNLT but is now valued at MP12 because of the fall in SNLT by 20%. The capitalist also employs a workforce that would have been valued at V15 but is now valued at V12. The surplus value created is thus S12 and total value of the commodity produced is now P36 (MP12+V12+S12). This is sold in the market for M36.

What is the rate of profit now? On a HC basis, it is M12 (S12) divided by the original money capital advanced (M30), or 40%. But on a RC basis, the original M20 of advanced capital (AC) is also reduced 20% by the lower SNLT. The rate of profit on this basis is M12 divided by M24, or 50%, the same as in the first cycle. There is no change in the rate of profit under RC but it has fallen under HC. See annex 1.

Supporters of the HC measure of the Marxist rate of profit argue that, as the M30 of AC was advanced, it cannot be altered in value even if the SNLT to produce the commodity in the new production cycle has fallen. That's because the original capital advanced was made with money capital and profits are also measured in money capital. However, supporters of the RC measure argue that the M30 of advanced capital must be devalued as well by the decline in SNLT now available in the new cycle. So the M30 of AC at the beginning of the production cycle will be revalued at the SNLT now operating up to the end of the production process, or to M24. In other words, the SNLT sets the value not only of new investment in means of production and labour, but also sets the value of all previously accumulated capital. The rate of profit thus stays the same at 50%. The HC measure says the rate of profit will fall, other things being equal, if the value of the product declines. In my view, the latter is exactly what Marx wants to show in the process of capitalist reproduction.

The above example is not realistic, in Marx's view, because to reduce the SNLT in producing the commodity, which is done by raising the productivity of labour, there must usually be an increase in technology and means of production relative to use of labour. In other words, there should be an increase in the organic composition of capital, namely the amount of MP will rise relatively to the amount of V. So let's assume that, in order to reduce the SNLT by 20% in each cycle of production, the organic composition of capital must also rise by 20%. If I apply this assumption, we find that the rate of profit under both HC and RC falls because of Marx's law of a rising organic composition of capital applies without any counteracting factors. BUT the rate of profit is lower under HC (36%) than under RC (45%), because the money capital advanced is unaltered at M30 from the beginning of the cycle of production with HC while it is devalued along with the value of the commodity under RC (to M24). See example 2 in the attached file.

We can add other examples, where Marx's counteracting factors against a rise in the rate of profit come into play, namely, by the cheapening of the means of production (or constant capital) leading to a fall in the organic composition of capital; or by a straight rise in the rate of surpus value producing more profit. In both these cases, with a 20% fall in the SNLT still operating to produce the commodity, we find that the rate of profit still falls with HC, but by not as much as without these counteracting factors. With RC, the rate of profit rises with the application of these counteracting factors. See examples 3 and 4 in the attached file.

Of course, none of the actual rates of profit in these examples should be taken as realistic. The aim of these examples is to show that significant differences in the rates of profit will develop between the HC and RC measures. The rate of profit is measured against advanced capital in money terms. Under HC, the money capital accumulated from previous cycles is advanced at the beginning of each cycle. The rate of profit under RC terms will also be based on the advanced capital (AC) BUT the value of this AC is assumed to have been reduced to a new level of SNLT. So the rate of profit will be measured against a revalued AC.

It is not true that HC measure does not revalue the AC if the SNLT falls. It does, but only that part created and realised in the new cycle of production. The historic AC accumulated from previous cycles is not revalued. This measure thus recognises that capitalists have already paid in money capital for past means of production and labour which must go into measuring the rate of profit. It makes no difference that the MELT falls subsequently. In contrast, the RC measure assumes that all the accumulated AC must also be revalued at the new SNLT and not just new AC consumed in the current production process.

Which measure you adopt does make a difference. In my examples, the rate of profit under HC falls more than the RC measure when the SNLT falls (example 1) and when the organic composition of capital rises (example 2 as Marx argues would be the usual case). And it also falls when the means of production is being cheapened and there is a falling organic composition of

capital (example 3), while with RC, the rate of profit rises (example 3). And it still falls under HC when the rate of surplus value rises while it rises with the RC measure (example 4).

Which is more realistic and which is closer to Marx's view? Supporters of HC argue that this measure is more realistic as it measures what capitalists get back in money profit in each production cycle against what they have paid in money for the capital advanced, even though the value of current production may have fallen with a fall in the SNLT. You cannot revalue the money that has already been advanced and converted into means of production and labour power. The supporters of the RC measure must explain why they want to revalue all the old money capital at the current SNLT when that makes no sense in reality.

Supporters of the RC measure argue that a change in the SNLT must mean revaluing the capital consumed in the production cycle. This is true, but this is a red herring. The HC measure allows for the change in the SNLT to affect the <u>additions</u> to advanced capital but not to <u>previous</u> advanced capital. Advanced capital (AC) differs in definition from the means of production (MP) and labour power (V); it exists in money only, both before and after the production process. So there is no need to revalue the old AC simultaneously with the capital consumed in production – indeed that would be to fly in the face of reality.

Which measure does Marx agree with? That is a matter of interpretation. The supporters of the HC measure say that this is Marx's view and the only one consistent with all other Marxist categories and equivalents. They argue that the interpretation that proposes the RC measure is not Marx's and is also inconsistent with Marx's other equivalents. Indeed, as the RC measure is not realistic, it is not a measure of the rate of profit at all, but merely a theoretical figment.

This brings me to depreciation, which was another big issue of the recent debate on my blog. None of the above discussion on the correct way to measure the rate of profit, given the effect of a changing SNLT, has anything to do with the need to account for the depreciation of the means of production during each production cycle. HC supporters are not denying that the value of the means of production (MP) will depreciate. Depreciation is necessary to account for physical wear and tear of machinery and plant and also through moral depreciation caused by new technology making existing equipment obsolete. But this depreciation is exogenous to measuring the value of that advanced capital as SNLT changes. Depreciation can take place against the MP measured in HC or RC (indeed, the US official sources do just that, although they only account for physical depreciation).

Anyway, that's how I see it.

EXAMPLE 1
Extended reproduction; all circulating capital, ROC=1, S/V=100%, cap cons=0, 20% fall in SNLT

	HISTORIC COST MEASURE							REPLACEMENT COST MEASURE						
	AC (M)	C	V	S	P	*ROP*	AC(M1)	AC (M)	C	V	S	P	*ROP*	AC(M1)
Cycle 1	20	10	10	10	30	*50*	30	20	10	10	10	30	*50*	30
Cycle 2	30	15	15	15	45				30	15	15	15	45		
after 20% reduction SN		12	12	12	36	*40*	42	24	12	12	12	36	*50*	36

EXAMPLE 2
Extended reproduction; all circulating capital, ROC rises by 20%, S/V=100%, cap cons=0, 20% fall in SNLT

	AC (M)	C	V	S	P	*ROP*	AC(M1)	AC (M)	C	V	S	P	*ROP*	AC(M1)
Cycle 1	20	10	10	10	30	*50*	30	20	10	10	10	30	*50*	30
Cycle 2	30	16	14	14	44				30	16	14	14	44		
after 20% reduction in		13	11	11	35	*36*	41	24	13	11	11	35	*45*	35

EXAMPLE 3
Extended reproduction; all circulating capital, ROC falls by 20%, S/V=100%, cap cons=0, 20% fall in SNLT

	AC (M)	C	V	S	P	*ROP*	AC(M1)	AC (M)	C	V	S	P	*ROP*	AC(M1)
Cycle 1	20	10	10	10	30	*50*	30	20	10	10	10	30	*50*	30
Cycle 2	30	13	17	17	47		47	30	13	17	17	47		
after 20% reduction in		11	13	13	37	*44*	43	24	11	13	13	37	*56*	37

EXAMPLE 4
Extended reproduction; all circulating capital, ROC=1 S/V=rises 50% from 100%, cap cons=0, 20% fall in SNLT

	AC (M)	C	V	S	P	*ROP*	AC(M1)	AC (M)	C	V	S	P	*ROP*	AC(M1)
Cycle 1	20	10	10	10	30	*50*	30	20	10	10	10	30	*50*	30
Cycle 2	30	15	12	18	45				30	15	12	18	45		
after 20% red in SNLT		12	10	14	36	*48*	44	24	12	10	14	36	*60*	38