

Heinrich Answers Critics

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By Michael Heinrich

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Marx's law of the tendency of the profit rate to fall (LTPRF)

1. Confusion about the “law” and “counteracting” forces

For Marx, is a rising rate of surplus value (s/v) a part of the law itself (as it is presented in chapter 13 of vol. III of *Capital*) or is it a counteracting factor (dealt with in chapter 14)? There is an easy way to check: we just have to read chapter 13. Marx starts his presentation with a constant rate of surplus value and shows that a rising organic composition of capital leads to a falling rate of profit (pp. 317-18, all pages from the Penguin edition of *Capital*). Then very quickly he includes a rising rate of surplus value in his considerations (see pp. 319, 322, 326, 327, 333, 337). At pages 333 and 337 Marx even realizes the possibility of a profit rate *rising* with a rising rate of surplus value, but excludes such a possibility as an “isolated case” or not realistic without going into details. It is clear that he maintains the “law itself” not only with a constant rate of surplus value but also with a rising rate of surplus value!

And what about mentioning the rising rate of surplus value in chapter 14 as a “counteracting factor”? The rate of surplus value can rise for completely different reasons. On the one hand it can rise through increased productivity (diminished value of commodities leads to a diminished value of labour power and therefore to a higher rate of surplus value). On the other hand the rate of surplus value can rise by prolonging the working day and/or by making work more intensive. As we can easily see by checking the beginning of chapter 14 (p. 339), *only the second case*, which is *independent from rising productivity*, is treated by Marx as one of the “counteracting factors”.

The first case is included in formulating the law. Why? Marx wants to show that the capitalist way of developing productivity leads to the tendency of a falling rate of profit. As we can see already in volume I of *Capital*, capitalists increase productivity (mainly by the use of more and better machines) in order to achieve an extra surplus value. When the new production methods spread, this has two consequences: (1) the average value composition of capital c/v rises, (2) the value of commodities diminishes and the rate of surplus value s/v increases. In sum, capitalist development of productivity has *two simultaneous* results, which affect the profit rate in opposite ways: rising c/v leads to a falling profit rate, rising s/v leads to an increasing profit rate. When you want to prove anything about the consequences of capitalist development of productivity for the profit rate you have to consider *both factors*. It will not do arbitrarily to single out one factor as the “initial factor” and maintain by focusing on this factor alone that you already found a “law.”

If one considers *only* the effect of the rising c/v assuming a constant rate of surplus value, you tear apart two always connected consequences of the same cause. By this one reduces the “law” to a mathematical banality (unchanged numerator and increasing denominator leads always to a decreasing magnitude of the fraction) without any real meaning (the same cause which changes the denominator also changes the numerator which is excluded from the “law”). This seems the way in which Carchedi/Roberts consider the law. However, Marx was a serious scientist. He was not interested in the formulation of banalities without any real meaning; Marx tried to come to real insights and accepted the risk of failure.

2. Problems in proving the law

Marx mentioned rising s/v throughout chapter 13 as indicated above, but the only attempt to account for the effect upon the profit rate is to be found in a remark in chapter 15 (pp.355-6). It is the example of the 24 workers, each of them doing 2 hours surplus labour per day (in sum 48 hours of surplus labour per day), replaced by 2 workers, who obviously cannot provide 48 hours of surplus labour per day, no matter how big s/v will be.

When we compare the surplus value produced by 24 workers and by 2 workers and we want to say anything about the profit rate, we have also to compare how much capital is needed to employ 24 workers and how much is needed to employ 2 workers. Omitting the second comparison by simply assuming that the size of the capital need not change, is an arbitrary, unjustified assumption.

As I explained in my article, when we *only* know that the numerator of the fraction (the surplus value) diminishes, it is only possible to conclude that the whole fraction (the profit rate) will diminish if we also assume that the denominator (the total capital $c + v$) will *not* diminish. But if total capital also diminishes then we have a diminishing numerator *and* a diminishing denominator and again we have the question which of the two diminishing processes is stronger.

Carchedi/Roberts accuse me of putting the question in the wrong framework. Correctly framed I should discuss the problem “in terms of rising or falling organic composition.” Denying the falling rate of profit, Carchedi/Roberts maintain, would presuppose a falling organic composition, which I did not justify with arguments. Carchedi/Roberts conclude that my example “is really one more example of how, when the non-dialectical mind meets dialectical movement, all it can see is indeterminacy.”

Let us put the example in the framework of organic composition and assume that the working day lasts 12 hours and that in each working hour one value unit is produced. When in the first case 24 workers deliver 2 hours surplus labour each, then 10 hours of the working day are paid, and in sum the 24 workers deliver a total surplus value of $24 \times 2 = 48$ and the variable capital is $24 \times 10 = 240$. Let us assume the constant capital is 60. Then the organic composition c/v is $60/240 = 25\%$ and the profit rate is $48/(60+240) = 16\%$.

Now let us assume productivity has risen and only 2 workers are necessary, and since a fall in the value of labor power is analytic to a rise in productivity, let us assume each worker is now providing 10 hours of surplus labour. The surplus value has decreased to $2 \times 10 = 20$ (instead of 48). When the working day still lasts 12 hours then only two hours are paid, the variable capital is $2 \times 2 = 4$ (instead of 240). Let us assume an increase in constant capital. For purposes of illustration let us say that constant capital has increased from 60 to 96, and then we find that the organic composition has risen enormously, from 25% to $96/4 = 2400\%$. However the profit rate did not fall, it has risen to $20/(96+4) = 20\%$ (instead of 16%). Only when constant capital, in this illustration, is *bigger than 121* and therefore that the organic composition is *bigger than $121/4 = 3025\%$* , then and only then the profit rate will start to fall.

Using simple arithmetic even the dialectical minds of Carchedi and Roberts should recognize that an increasing organic composition *as such* is not enough to prove a falling rate of profit. The organic composition must not only rise, *it must rise by a certain amount in relation to a simultaneous fall in the value of labor power*. But there can be no argument that in the example above a rise from 25% to 3025% must be the case rather than a rise from 25% to “only” 2400%.

We cannot escape the problem that capitalist development of productivity has two contradictory effects on the profit rate. Maintaining the LTRPF presupposes that one can give reason for the claim that in the long run the effect of rising c/v must prevail over the effect of rising s/v . Carchedi/Roberts try to give such reason with the argument that the possibility for an increasing s/v is restricted by biological and social limitations of lengthening the working day and they illustrate this argument by a pretty numerical example. I do not deny that the working day has such limitations – but lengthening the working day is far from being the only possibility for increasing s/v . The whole fourth section of volume I of *Capital* deals with the production of relative surplus value. With a constant or even decreasing working day s/v can rise through rising productivity, ignored in the argumentation of Carchedi/Roberts. And there is no visible limit for the rise of s/v as long as productivity can be increased. But even if we imagine that one day a limit for a further increase in productivity would be reached, even this would not save the LTRPF. Why? In this case not only the increase of s/v would be limited but also the increase of c/v . When a further increase of productivity is not possible, why should more constant capital be used?

Shane Mage follows a different strategy to maintain the LTRPF: he simply changes the formula for the profit rate. While Marx considers $s/(c+v)$ as profit rate, Mage argues that v becomes smaller and smaller and therefore he simply drops it. Mathematically a little bit adventurous, but let us follow his considerations. Instead of the Marxian profit rate $s/(c+v)$ we consider now the “Mage rate of profit” s/c .

As organic composition Mage does not use the fraction c/v but the fraction $c/(v+s)$, abbreviated by Q . With s' for the rate of surplus value s/v , Mage now can write for *his* profit rate

$$s/c = s' / Q(1+s')$$

With this formula Mage wants to refute my demonstration that in Marx's profit rate formula one finds the rate of surplus value in the numerator and the value composition in the denominator and that there is no necessity in any claim as to which one will grow faster. With his new formula Mage states triumphantly that now the rate of surplus value appears "in *both* the numerator and the denominator", but constant capital appears only in the denominator. Seemingly Mage has the idea when s' appears in numerator *and* denominator this compensates each other to a certain degree and therefore the effect of growing c prevails.

However, that s' appears in the denominator is a kind of illusion. For $Q = c/(v+s)$ we can also write $Q = c / v(1+s')$ (Mage himself mentions this expression). When we insert this last expression for Q in the "Mage profit rate" we receive

$$s/c = s' / [c/v(1+s')] (1+s')$$

and we can see that s' appears not only *one* time in the denominator, it appears *two* times. And since these two instances cancel each other totally, the two terms $(1+s')$ in the denominator of Mage's profit rate can simply be shortened and we receive:

$$s/c = s' / c/v$$

That the appearance of s' in the denominator is just an illusion becomes obvious, when we understand that with Mage's way of defining we can put *any* magnitude in the denominator, let us say the date of Christmas. Let us just define $R = Q/2512$ then we can reformulate the "Mage rate of profit" as

$$s/c = s' / R(1+s') 2512$$

Suddenly we have the date of Christmas in the denominator of the formula. But we should be cautious to draw any Christian conclusions from this: the date of Christmas is only visible in the denominator because its inverse is hidden in R . Therefore the date of Christmas has absolutely no effect on the denominator. The same holds for $(1+s')$: it is only visible in the denominator because its inverse is hidden in Q . Therefore the rate of surplus value also has absolutely no effect on the denominator. When we use the simplest expression for the "Mage rate of profit"

$$s/c = s' / c/v$$

then we see the rate of surplus value s' in the numerator and the value composition c/v in the denominator. Whether the whole fraction will increase or decrease depends on the fact which one grows faster: s/v or c/v . The "Mage rate of profit" is confronted with exactly the same problem as the Marxian rate of profit.

3. An empirical test of the law?

In my article I argued that by observing empirically the movement of the profit rate, you can neither prove nor refute the "law." The observation just tells you what happened in the past, but the law maintains a proposition about what will happen in the future. To this

point Carchedi/Roberts agree, they write about me: “He is correct that past facts, in and of themselves, cannot constitute a proof that they will recur in the future.” Nevertheless Carchedi/Roberts know a case, where we can conclude from the past to the future: “Past developments can be predicted to recur in the future if we can argue that the same factors that determined the course of events in the past will keep operating in the future.” I agree. But the determining factors must keep operating in the future *really in the same quantitative relation*. When in the past an increase of productivity resulted in an increase of the value composition c/v which was bigger than the increase in the rate of surplus value s/v , it must be demonstrated that the same must happen in the future. But where is the argument for that?

When the rate of surplus value is s/v and you have a certain increase in productivity, let us say by 100%, then you can give a precise account of the new rate of surplus value, because the value of the labour power will fall by half and the other half of the former value of labour power will augment the surplus value. Therefore the new rate of surplus value will be

$$(s + v/2) / v/2 = (2s + v) / v$$

But what can you say about the rise of the value composition c/v ? In order to double productivity did the value composition rise by 50%, did it rise by 100% or did it rise by 200%? There is no certainty as to any of these possibilities, which will vary due to circumstances not determined by the given fall in the value of labor power. There is no argument which can connect any *given* rise of productivity with a *certain* rise of the value composition. When in the past doubling productivity required a rise of c/v by 200% there is no argument from which we could conclude that also in the future doubling productivity of necessity would still require a rise of c/v by 200%. Therefore we cannot know if the same factors (increasing rate of surplus value and increasing rate of value composition) really work *in the same quantitative relation* as in the past.

This is the decisive difference to the law of gravity, which is mentioned by Carchedi/Roberts. Newton’s law sets out not only that the gravitational force between two masses becomes *somehow* bigger with bigger masses, it gives a precise quantitative relation: when one mass is tripled, the force will triple, when both masses will double the force will be four times as big as before, when the distance between the masses is doubled the force will diminished to one fourth and so on. However, such a precise connection between the rise of productivity and the rise of c/v unfortunately does not and cannot exist.

Before closing this point, I want to make two additional remarks. (1) Commenting on my statement that the LTPRF cannot be proved empirically, Carchedi/Roberts write: “The same argument could be used to undermine the validity of any law, including the law of gravity (a possibility which Heinrich probably has not considered).” I already mentioned the difference between the quantitatively determined law of gravity and Marx’s law which is not determined in the same way. But there is another point: Obviously Carchedi/Roberts are not very familiar with the history of physics. Newton formulated his

law of gravity in his *Principia Mathematica*, published 1687. During the next 200 years this law was empirically confirmed again and again. Nevertheless Newton's law of gravity was overthrown almost 100 years ago by Einstein's general relativity theory.

(2) Reading the text of Carchedi/Roberts one gets the impression that it is very easy to check empirically whether the profit rate went up or down during the last 50 or 100 years. Anyone who wants to check this seriously has to confront at least two main problems. *First problem:* Statistics done by states or international organizations do not follow the notions of Marx. You will find neither surplus value nor the organic composition in official statistics. In order to use the ordinary statistical data a kind of translation is necessary. However, you cannot do this translation without any ambiguity, there are always different possibilities to choose among and the possibility you choose will always affect the quantitative results. *Second problem:* the foundations of the official statistics change in the course of time. With new accounting rules for companies or with new tax laws the statistical definitions of basic magnitudes also change. This means that you do not necessarily compare the same things when you compare statistical data from 1950 with data from 1990. Maybe the name of the magnitude remained the same, but the way in accounting data for this magnitude has changed considerably. I do not say that it is impossible to get the information from statistical data, but it is not so easy and unambiguous as it sounds in the text of Carchedi/Roberts.

4. Marx's changing views in the 1870s

In my article I wrote that Marx presumably had doubts in the 1870s about the LTPRF. Carchedi/Roberts maintain I would give as a reason for this presumption the fact that Marx in the 1870s intensively studied the credit system, which they do not accept as a convincing argument. I agree that studying the credit system is definitely not a reason for doubts about the LTPRF. However, I never stated this.

Regarding Marx's changing views in the 1870s I dealt with two different topics:

1. By a certain number of remarks in letters I tried to give evidence that Marx himself did not think that his crisis theory as it was formulated 1864/65 was finished. Among other factors Marx realized the big influence especially of national banks and he definitely wanted to rewrite the section on credit, and I presume that this would have influenced considerably his formulation of crisis theory.

2. I tried to make plausible that Marx changed his mind about LTPRF. I did not claim that I could *prove* this, but I presented some facts (which do not rely on his studies of the credit system), but which support the *presumption*, that he did so:
 1. In his manuscript from 1875, investigating the mathematical relation between the rate of surplus value and the rate of profit, it became obvious that there are many cases that display a rising profit rate, *although* the value composition of capital has risen. It then becomes obvious that the whole case is much more complicated than it looked in the manuscript of volume III of *Capital* written ten years before.
 2. I quoted Marx's hand written remark in his personal copy of volume I of *Capital* which Engels published as a footnote. This remark clearly indicates a *rising* profit rate together with a *rising* value composition of capital as a normal case.

If this remark actually represents Marx's view in the 1870s then he definitely abandoned the LTPRF. Because it is an isolated remark, we cannot be *totally sure* about that. However, this remark fits very well with the accountings of the mathematical relation between the rate of surplus value and the rate of profit from the manuscript of 1875. Therefore I *presume* that Marx changed his mind about LTPRF.

I can add a third point, which I did not stress in the article. In the 1870s Marx discussed crises several times, but he mentioned the LTPRF neither in letters nor in manuscripts or excerpts. If for Marx the LTPRF was really such an important point for explaining crisis as many Marxists believe, then this silence is rather strange. However, if Marx changed his mind about the LTPRF then this silence is not at all strange.

Capital in General in *Grundrisse* and in *Capital*

Fred Moseley criticizes my statement that Marx abandoned the distinction between "capital in general" and "competition of the many capitals" in *Capital*. Moseley identifies this distinction with that between production of surplus value and distribution of surplus value and he states that I did not give evidence that Marx abandoned this second distinction.

In the last point Moseley is correct. I did not give evidence that Marx abandoned the second distinction. I agree with Moseley that Marx developed this second distinction in *Grundrisse* and that he maintained it also in *Capital*. I would add that production of surplus value includes not only production as such but also circulation (simple circulation of commodities and capital circulation as it is presented in vol. II of *Capital*).

However, I do not agree with Moseley in *identifying* the two distinctions. Moseley presupposes that Marx under the heading "capital in general" wanted to present just the production of surplus value. For this identification Moseley gives no evidence. Indeed, nowhere can you find a statement of Marx limiting the presentation of "capital in general" to the production of surplus value. Contrarily, according to Marx's plan "capital in general" should encompass as its last category *interest* (see his letter to Lassalle, March 11,

1858), a category which belongs definitely to the distribution of surplus value. That Marx includes interest in the section of capital in general contradicts directly Moseley's claim that capital in general should present only the production of surplus value.

What was the reason for the distinction between capital in general and competition? It was Marx's insight that in competition the laws of capital only *appear*, but they are not *produced* by competition, therefore competition cannot *explain* such laws (see *Grundrisse*, MECW vol. 29, p. 136). As a consequence Marx wanted to present independently from competition all such categories, which only appear in competition. Interest bearing capital exists in competition but it is not the result of competition. Therefore its presentation belongs to capital in general.

The distribution of surplus value does not belong completely to the field of competition, therefore the two distinctions (capital in general – competition, production of surplus value – distribution of surplus value) cannot be identical. Although Marx maintained the distinction between production and distribution of surplus value in *Capital* he dropped the distinction between capital in general and competition.

To repeat the arguments in short (a more extensive treatment can be found in my article in *Capital & Class* no 38, Summer 1989): Marx presupposed that exclusion of competition means to exclude *any* individual capital and any special form of capital from consideration. Capital in general was explicitly meant as not being an individual or special form of capital (see *Grundrisse*, MECW vol. 28, pp. 236, 341; vol. 29, pp. 114-15). In the manuscript of 1861-63 Marx had to learn that the content he wanted to present under the heading of capital in general (categories from surplus value via profit and average profit until interest) needs the consideration of *special forms* of capital (capital producing means of production/ means of consumption) and of different *individual* capitals, otherwise it makes no sense to speak of an *average* rate of profit. Marx could not abstract *completely* from individual capitals, therefore the basic construction rule for the section of capital in general had to yield. In *Capital* we do not find any more the distinction that presents capital in general on the one hand and that presents competition on the other hand. Instead of this Marx considers the relation of *individual* capital and *total* social capital on different levels of abstraction. Marx himself stresses that in Vol. I as well as in Vol. II of *Capital* he starts with consideration of an *individual* capital (see *Capital*, vol. II, Penguin, pp. 468-71), a description which obviously contradicts the determination of capital in general in *Grundrisse*. There Marx states that when we consider capital in general "we are concerned neither as yet with a *particular* form of capital, nor with *one individual capital* as distinct from other individual capitals" (*Grundrisse*, MECW vol. 28, p. 236, emphasis by Marx).

Between 1857 and the middle of 1863 Marx used the term "capital in general" in manuscripts and letters as an important notion. The fact is that after the middle of 1863 Marx never again used this term, either in manuscripts or in letters. Moseley explains this by popularization: *Capital* should be popular, therefore Marx omitted such a Hegelian term. However, this argument is not very convincing. First, it does not explain why Marx omitted the term also in his letters. Second and above all, Moseley's argument is not convincing for *Capital* itself. In the first of edition of 1867 Marx included a number of

Hegelian terms. In the postface to the second edition Marx admitted that he had “coquetted” with Hegelian notions. That Marx on the one hand coquetted with Hegelian notions in the first edition but at the same time omitted the term “capital in general” because it sounds too Hegelian is not very plausible. It seems much more plausible that Marx omitted the *notion* because he abandoned the *concept* connected with this notion.