THE LAW OF THE TENDENTIAL FALL IN THE RATE OF PROFIT AS A THEORY OF CRISES:

TWELVE REASONS TO STICK TO IT.

G.Carchedi

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The Law has been the aim of recurrent attacks. If an attack fades, a new one emerges from the arsenal of Marx’s critics. I shall mention twelve such critiques, drawn principally from the critics’ current repertoire. I shall use deflated data for the material goods sectors (a proxy for the productive sectors) in the US.

**1. First critique**. The Law holds that technological innovations are productivity increasing but labour shedding. This is questioned. However, the following chart leaves no doubts

Chart 1.

 The L/A ratio indicates the number of labourers (L) per 1 million dollars of assets (A). It falls from 75 in 1947 to 6 in 2010 (this is the labour shedding effect) while productivity increases from 28 million dollars per labourer in 1947 to 231 million in 2010.

**Second critique**.. The Law submits an inverse relation between the OCC and the ARP, i.e. if the OCC rises, the ROP falls and vice versa. The critique is that technological innovations, by increasing productivity, decrease the unit value of the output, including the means of production (MOP). When these means of production enter the next production process as inputs, the OCC falls on this account. Supposedly, the movement is indeterminate. However, the fall in the OCC is a counter-tendency that can only retard the manifestation of the tendency. This too is shown empirically

Chart 2.

Tendentially, if the OCC rises, the ROP falls.

**Third critique**. There are many causes of falling profitability, besides the increase in the OCC due to technological innovations. Thus, the theory is deemed to be incomplete, or unsophisticated because it considers only one cause of falling profitability. However, the question is whether the other causes of falling profitability are also causes of crises. The critics do not address this point. Take for example, the rise in the price of labour power due to an increase in capital accumulation greater than the rate of growth of the labour force. The point is that firms do not invest to adjust to the supply of labour. They invest to increase their productivity. If labour is in short supply, labour-shedding technologies will increase the supply of labour. If the supply is plentiful (i.e. if labour is unemployed), labour-shedding techniques will further increase it.

At low wage levels, some capitals in some countries might not be induced to innovate. But other capitalists in other countries will innovate and due to their higher productivity will eventually force the former to innovate as well. If they fail to innovate, they fall in a state of permanent economic dependency, thus losing value to the former group of countries. But this is a different story.

**Fourth critique**. If new technologies reduce profitability, why should capitalists innovate? Clearly, the innovators realize higher ROPs. If other capitalists follow suit, the general, and thus the average ROP should rise, not fall. This is in essence Okishio’s standpoint.

This critique overlooks the labour shedding nature of technological innovations. The technological leaders increase efficiency but, by investing in high OCC MOP, i.e. by shedding labour, also create less value and surplus value. Nevertheless, they increase their own ROP because, by selling a greater output at the same price as that of the smaller output of the technologically backward capitals, they appropriate a share of the latters’ surplus value. The former increase their ROP at the cost of the latter. The total value and surplus value as well as the ARP fall.

Okishio has surreptitiously replaced Marx’s notion of labour as value creating activity (the point of view of labour) with the bourgeois notion of labour as a cost (the point of view of capital). This is a capital sin, if not for an Okishian, surely for a Marxist.

**Fifth critique**. The Law does not hold in a monopolized economy. It is held that the lack of capital mobility across sectors is an obstacle to the equalization of the rates of profit. It is also held that monopolies need not innovate so that their OCC does not rise and each monopoly’s rate of profit does not tend to fall .

However, the need to innovate arises also due to another reason, the price mechanism. Suppose the whole economy is composed of two monopolies. Monopoly A exchanges its output for monopoly B’s output at a certain price, being the monetary expression of a certain value. Suppose now that monopoly A introduces new technologies. Its OCC increases. Its output increases too. Suppose that with the same investment, A doubles its output. Given the unchanged technological requirement of the two capitals in terms of each other inputs (use values), capital B exchanges its whole output for half the output of capital A. But monopoly A, to produce half of its output, reduces by 50% its investment. A’s ROP increases both because of its lower denominator and because of the appropriation of value from monopoly B. B’s ROP falls. This is why monopoly A wants to innovate. Then, B too is compelled to innovate. The two ROPs tend to equalize, even if there is no capital mobility across sectors. Moreover, given that monopoly A has produced less value and surplus value, the ARP tends to fall.

**Sixth critique**. The Law cannot be empirically substantiated. There are three variations on this theme.

First, supposedly, there are no data to compute the ROP. This is quite a remarkable statement, given the wealth of estimates of the ROP not only in the US but also in a variety of other countries.

Second variation: the ROP cannot be precisely estimated. This is true, but precision is not the question here, approximation is inevitable but sufficient. What is important is that these quantifications allow the detection of the trend of the ROP. There have been many different estimates of profitability, both short term and long term, in a variety of countries. But all of them converge on the finding that the ROP has been falling, the difference being since when. For some since the end of WWII, for others since the end of the Golden Age.

Third variation: empirical studies quantify the ARP in terms of the money expression of outputs and thus of use values. But this is *not* what Marx intended. Indeed. However, it is possible to convert official data into value, i.e. labour, quantities. To compute the value ROP of any one year, one need only begin from one year earlier. No regression ad infinitum, thus.

In essence, the key is the relation between the number of hours (or of labour units) on the one hand and, on the other, the sum of money profits plus wages paid at the end of the year prior to the estimate, say year 1. These are known quantities. The ratio between the two quantities gives the monetary expression of one unit of labour (or of one hour).

α = (W+P)/NL

W = wages, P = profits, NL = number of labour units

For example, if W+P = $100 and NL is 5 labourers, 100/5 = 20, and $20 represents 1 unit of labour at the end of year 1.

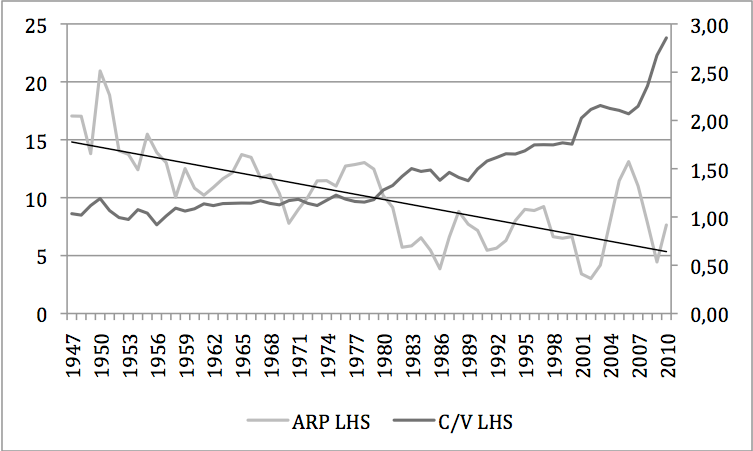
By applying this ratio, we can compute the labour content of wages and of profits separately. Further, given the inherent homogeneity of abstract labour, the same ratio can be applied to the price of the means of production, also at the end of year 1. This is the labour content of the means of production as the output of year 1. Given that the output of year 1 is also the input of year 2, this is also the labour content of the same MOP at the beginning of year 2. At the end of year 2 we compute again profits and wages in terms of labour. Finally, we divide profits in labour terms at the end of year 2 by the sum of the labour content of wages also at the end of year 2 plus the labour content of the MOP at the beginning of year 2. The *temporal* ARP in terms of labour (value) at the end of year 2 follows.

Chart 3.

Since money quantities can be converted into value magnitudes, the results of the analysis in money terms apply also to the value dimension. The Law holds both in money and in value terms. Moreover, the two ROP not only move in the same direction (tendentially downward) but also track each other very closely.

**Seventh critique**. Since the mid-1980s, the ARP has been tendentially rising, not falling. Thus supposedly the Law has ceased to operate. Consider figure 4.

Chart 4.



Tendentially, the ROP has been falling throughout the post-WWII period. If the whole secular trend in downwards, and that includes the period of rising profitability, then this period is a counter-tendency. Some critics reply that the period of rising profitability is too long to be a counter-tendency. The answer is that a counter-tendency continues al long as its causes last, in this case the historic defeat of the world working class. The Law must be understood in terms of the tendency and of counter-tendencies.

What then is the counter-tendency operating in this period? The rising rate of exploitation, the essence of neo-liberalism. This becomes evident if the effects of an increased rate of exploitation are removed, i.e. if in the numerator of the ROP we control for the fluctuations in the rate of exploitation. I call this the *constant exploitation ARP (CE-ARP)*, the ROP whose numerator has been computed by holding the rate of exploitation constant throughout the long-term period.

Chart 5.

Even though the ARP has increased between 1986 and 2010, the CE-ARP has decreased. A comparison between the two lines shows that a greater share of the shrinking new value has been redistributed from labour to capital. And this is why the ARP has risen.

It has been argued that the CE-ARP is not a ‘real’, but a hypothetical measure of profitability because it measures what profitability would have been under the assumption of a constant rate of exploitation, rather than what it has actually been. If correct, this objection would invalidate, say, the computation of the ROP with deflated prices. The point is whether the CE-ARP, just as deflated prices, helps us understanding features of reality that the ARP with variable rates of exploitation cannot disclose.

**Eighth critique**. It cannot be shown that labour is the sole creator of value. It is argued that the MOP create value too. Here, the fundamental mistake is that no distinction is made between use values and value. The MOP help creating use values, not value. The following chart shows it.

Chart 6.

If the OCC and thus the assets relative to labour rise tendentially but persistently while the CE-ARP falls tendentially but persistently, assets cannot produce surplus value. So they do not produce value either. Marx’s basic assumption is empirically substantiated.

**Ninth critique**. If crisis are caused by falling profitability, supposedly crises must be *immediately* preceded by a falling ARP*.* But the 2007-09 crisis has been preceded by 4 years of rising profitability. Again, the Law would seem to have ceased operating.

What is the Law about? The Law specifies an inverse relation between the OCC and the ROP. When the former rises, the latter falls and vice versa. From this, it does not follow that crises must necessarily be *immediately* preceded by one or more years of falling profitability. They may or may not. It depends on when the OCC inverts its direction. If it inverts its direction right after an upward profitability cycle, the crisis follows a period of rising profitability. Since an ascending cycle precedes always a downward cycle, there is nothing strange about crises being preceded by one or more years of rising profitability. The crises of 1980-82, 1990-91, and 2001-2002 are preceded by falling profitability. But the crises of 1954, 1957-58, 1960-61, 1970, 1974-75, are preceded by rising profitability.

Also the Great Recession has been preceded by rising profitability, the 2003-2006 recovery. In these four years, the CE-ROP rises from 7.1% to 7.5% due to a fall in the OCC from 2.15 to 2.07. See columns 2 and 6 of table 1.

**Table 1.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | ARP (1) | CE-ARP (2) | Employment (3) | New value (4) | Exploitation rate (5) | OCC (6) | Wage share (7) |
| 2003 | 4.1% | 7.1% |  |  | 13.1% | 2.15 | 30.4% |
| 2004 | 7.8% | 7.2% |  |  | 24.4% | 2.12 | 29.6% |
| 2005 | 11.4% | 7.3% | 1.6% | 11.6% | 35.5% | 2.10 | 28.9% |
| 2006 | 13.1% | 7.5% | 0.1% | 8.6% | 40.2% | 2.07 | 28.8% |

If a crisis need not be preceded by falling profitability, two questions arise. First, if falling profitability is not necessarily a sign of an imminent crisis, which is the indicator of an upcoming crisis? From the standpoint of the labour theory of value it can only be falling employment and usually falling new value. In fact, both the rate of growth of employment (column 3) and of new value (column 4) in table 1 start falling in 2005.

Second, that crises are not necessarily *preceded* by falling profitability is not to say that crises are not *determined* by falling profitability. They are. Consider again the 2007-2009 crisis. It has two aspects: it is both a financial and a profitability crisis. Let us begin with the latter aspect.

*The profitability crisis.* It starts in 2007, in spite of the previous rise in the ARP, because it is only in 2007 that the OCC starts rising after the previous 4-year (column 6). Spurred by higher profit rates in 2003-06 and hindered by high capacity utilization, in 2007 capitals start investing in higher OCC assets. The OCC rises from 2.07 in 2006 to 2.15 in 2007 and continues rising afterwards (column 1). Therefore the CE-ARP falls from 7.50% to 7.39% (column 3). This leads to a fall in the new value from 8.6% to -2.2% (column 4).

Table 2.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | OCC (1) | Exploitation rate (2) | CE-ARP (3) | New value (4) | Wage share (5) |
| 2006 | 2.07 | 40.2 | 7.50% | 8.67% | 28,8 |
| 2007 | 2.15 | 34.6 | 7.39% | -2.2% | 28,6 |
| 2008 | 2.36 | 26.1 | 6.83% | -9.5 | 27,6 |
| 2009 | 2.67 | 16.3 | 5.99% | -16.7 | 26,0 |

*The financial crisis*. To understand how it has been determined by falling profitability we must take a step back, to the 1997-2002 downward cycle.

Table 3.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Rate of exploitation (1) | ARP (2) | Wage share (3) |
| 1997 | 25.3% | 9.2% | 33.3% |
| 1998 | 18.2% | 6.6% | 34.1% |
| 1999 | 17.9% | 6.5% | 33.9% |
| 2000 | 18.2% | 6.6% | 34.0% |
| 2001 | 10.3% | 3.4% | 31.9% |
| 2002 | 9.3% | 3.0% | 31.1% |

From 1997 to 2002, the rate of exploitation tumbles down from 25.3% to 9.3% (column 1). Consequently, on the one hand the ARP declines from 9.2% to 3.0% (column 2) and on the other the wage share rises from 33.3% to 34.0% in 2000 (column 3) (but then falls to 31.1% in 2002 due to the 2001-2002 crisis). In 2003 capital starts redressing the situation.

As a means to raising profitability, from 2003 to 2006 capital raises the rate of surplus value, from 13.1% to 40.2% (column 5, table 1). Then, the ARP rises, from 4.1 to 13.1% (column 1, table 1). But there is a catch. The wage share, which had fallen from 34% before the 2001-2002 crisis to 30.4% after the crisis, falls further to 28.8 % right before the Great Depression, a negative growth of 15.2% in 7 years. Due to the fall in labour’s absorption capacity in the productive sectors, capital migrates to the financial sphere *in spite of rising profitability in the productive sectors*. From 2003 to 2005 the rate of growth of constant capital falls from 1.96% to 1.50%. It starts rising only in 2006. The influx of capital into the financial and speculative sectors inflates profits and eventually causes the financial bubble. The 2007 financial crisis *is* determined by falling profitability in 1997-2002 through the rise in the ARP as a consequence of the rise in the rate of exploitation, difficulties of realization and capital shifts to financial activities. The new vogue amongst Marxists that the 2007-09 crisis is a financial crisis not determined by falling profitability is wrong.

After 2006, the OCC rises, (table 2 column 1) the rate of exploitation falls (column, table 2) and the ROP falls on both accounts (column 3, table 2). At the same time, the wage share falls further to 24% (column 5, table 2). These are the conditions for the next financial and profitability crisis.

To sum up,

(a) the 2007 *profitability* crisis is *determined* by and *starts* with the rise in the OCC. It is *preceded* by a fall in employment;

(b) the 2007 *financial* crisis is *determined* by falling profitability. Specifically, the 1997-2002 downward profitability cycle determines the realization difficulties in 2003-06. Capital moves to the financial sectors and the 1997-2002 fall in profitability emerges in 2007 as the financial crisis.

**Tenth critique**. Each crisis is different because each crisis has a different cause. It is held by some Marxists that the Law is a ahistorical straightjacket or too simplistic. This view seems to have become a new vogue among Marxists. But this is the question. ~~I~~f crises are recurrent and if different causes emerge recurrently, what is the causes this recurrence? This question remains unasked, let alone unanswered. There must be something in the working of the system that is the cause of all these different causes. In other words, there must be an ultimate cause.  This is the tendential fall in the ROP, the effect of the increase in the OCC on the ROP due to labour-shedding and productivity increasing new technologies. Given the tendential nature of the Law, the tendency interacts with the counter-tendencies and the result is the specific form taken by the crisis of profitability. The Great Recession is a case in point.

**Eleventh critique**. Crises are caused by an insufficient quantity of money and not by falling profitability*.* Consider this chart

Chart 7.

While the quantity of money (M1+M2) grows persistently from 1959 to 2010, the CE-ARP falls persistently and the ARP (with variable rates of exploitation) falls up to the mid-1980s and then rises. The quantity of money has no influence on the long-term average profitability no matter how it is measured. I use the conventional definition of money, as M1+M2, to show that not only money proper (bills and coins) but also credit (which is not money) are impotent against the tendency towards the fall in profitability and thus crises.

**Twelfth critique**. Crises are caused by the class struggle. This is the profit squeeze theory. While the class struggle contributes to give a specific form to the cycle and can detonate the crisis, it cannot be the cause of crises. The reason is as follows. To explain how crises are endogenous to the system, how they spontaneously arise from within an upward cycle, one has to start from economic recovery, when both the rate of profit and the new value rise, and see how economic growth turns into its opposite. But the inverse relation between wages and profits holds only if the mass of new value is stable or falling. It does not necessarily hold if the new value rises, i.e. when the economy is recovering. If the new value produced rises, wages, profits and thus the ROP can all rise. As long as the new value grows, there is no inherent necessity for higher wages to cause a fall in the ROP, only a possibility. Then, there must be a factor that *necessarily* undermines the increase in the rate of growth of the new value created. This is the increase in the OCC due to labour shedding and productivity increasing techniques which can turn a positive percentage growth in new value into a negative percentage growth.

To sum up, it is better to stick to the Law. It works and it works well.