

## BEHIND AND BEYOND THE CRISIS<sup>1</sup>

By G. Carchedi  
York University

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The 2007 financial crisis has reignited the discussion on crises, their origin and possible remedies.<sup>2</sup> At present, the most influential thesis within the Left identifies the cause of the crisis from an underconsumptionist perspective and recommends Keynesian redistributive and investment policies as a solution. This paper criticizes these approaches and argues that the perspective from which to understand the crisis is Marx's law of the tendential fall in the average profit rate (ARP), for short the law.

**I. The law in a nutshell.** Let us summarize some essential features.

1. The capitalists compete against each other by introducing new means of production incorporating new technologies. This is not the only form of competition but it is by far the most important one to understand the dynamics of the crisis.<sup>3</sup>
2. The new means of production increase the *efficiency* (output of *use* values per unit of capital invested) of the technological leaders in the *productive* sectors.
3. At the same time, these technologies are designed to replace labourers with means of production. Therefore, the technological leaders' proportion of capital invested in means of production relative to that in labour power, for short the organic composition of capital, increases. Unemployment follows.
4. Since only labour creates value, less labour power employed means less (surplus) value created by high technology capitals. *Ceteris paribus* the ARP falls: "The rate of profit does not fall because labour becomes less productive, but because it becomes more productive" (1967, p. 240).
5. It follows that a greater quantity of use values incorporates a smaller quantity of (surplus) value, i.e. that falling profit rates and rising outputs are two sides of the same coin.
6. The technological leaders perceive the increased productivity as the way to realize higher profit rates. They do not know that they (let) produce less surplus value. But even if they knew, they would not care. Nor do they know that their rate of profit rises because, if they produce less surplus value but realize higher profits, they *appropriate* surplus value from two sources. First, from other sectors, if they attract purchasing power from them. The first to suffer from this drainage of purchasing power (value) are the weaker capitals in those sectors. Second, from the technological laggards in their own sector because the more productive capitals can sell at the same unit price a greater output per unit of capital invested than the output of the laggards. The formers' rate of profit rises while that of the latter's and the ARP drop. Eventually, the capitalists who cannot innovate lose on their investments and go bankrupt.
7. Like all laws of development, this law too is tendential. The same factor, technological innovations, determine both the tendency (the increase in the organic composition and thus the fall in the ARP) and the countertendencies. Several countertendencies can and do co-exist.
8. The tendency is such because it is kept back and delayed by the counter-tendencies but it eventually emerges when the countertendencies weaken to such an extent that they cannot hold back the tendency any longer. When the countertendencies exhaust their counteracting power, the *crisis* emerges. This is a sudden jump in bankruptcies and unemployment whose real scope had not been allowed to manifest itself (fully) by the countertendencies.
9. This means that the tendency continues to operate even if temporarily reversed by the countertendencies. This becomes empirically visible when the ARP is computed in the absence of the countertendencies.
10. The crisis creates the conditions for the recovery. The recovery emerges when these conditions have become sufficiently strong. Periods of growth alternate with period of crises.

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<sup>1</sup> An extended version of many of the arguments in this paper can be found in Carchedi, *Behind the Crisis*, Brill, 2010.

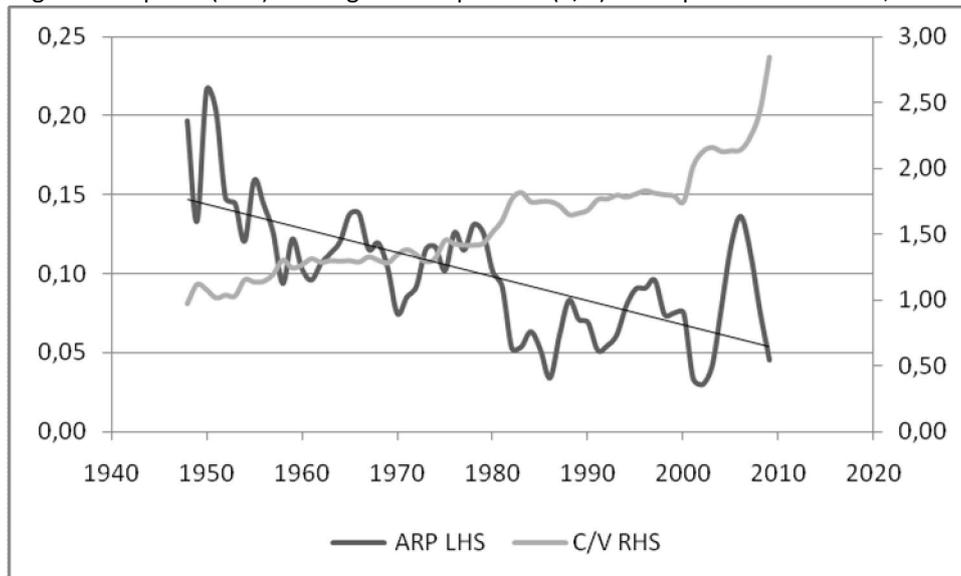
<sup>2</sup> For a useful review of contemporary Marxist theories of crises, see Joseph Choonara, 2009.

<sup>3</sup> "Marx argues that it is the difference between the two rates [rate of profit and rate of interest, G.C.], which he calls the rate of profit-of-enterprise ( $r - i$ ), that drives active investment. Keynes says much the same thing" (Shaikh, 2010, p.46). Actually Marx says no such thing. For Marx, 'active investment' is basically moved by competition, by the need to keep technologically abreast of the competitors. It is Minsky, not Marx, who says much the same thing as Keynes.

11. Since technological competition is the dynamics of capitalism, the economy tends *necessarily* towards an increase in the organic composition of capital, a decrease in the ARP, and crises. But the concrete shape of the ARP is the result of the interplay of the tendency and its counter-tendencies.

**II. Empirical evidence.**<sup>4</sup> Initially, the focus will be on the profits *realized* in the productive sectors rather than produced because these are the profits that can be capitalized as further productive capital and because this capitalization (or lack of it) is the basis for an acceleration or deceleration of the economy and thus of the cycle. Chart 1 below focuses on the productive (goods producing) sector of the US economy.<sup>5</sup> Chart 1 shows both a secular (from 1948 to date) falling trend in the ARP and a secular increase in the organic composition of capital ( $c/v$ ), in conformity with the law.<sup>6</sup>

**Chart 1**  
Average rate of profit (ARP) and organic composition ( $C/V$ ) in the productive sectors, 1948-2009



The ARP peaks in 1950 (22%), troughs in 1986 (3%), rises to 14% in 2006 and drops vertically to 5% in 2009. The organic composition rises from 0.98 in 1948 to 2.85 in 2009.

Within the secular downwards trend two long-term but shorter cycles can be discerned, 1948-1986 and 1986-2009. The trend of the ARP falls in the first period but rises in the second one. Some authors have concluded that if the system can be in a (financial) crisis while the ARP rises, as in the 1986-2009 period, the law can be discarded as an explanation of crises (Husson, 2010a and 2010b). Other authors (Kliman, 2010a and 2010b, Freeman, 2010) correctly deny this allegation but from a methodological stance different from what I consider to be Marx's own as set forth in the eleven points above.

Chart 1 shows the ultimate cause of crisis, i.e. the tendency of the organic composition to rise and thus the tendency in the ARP to fall *over the whole secular cycle*. The two trends move *necessarily* in the opposite direction as in Marx's theory. But, at each moment and for shorter periods, the size and the movement of the ARP and thus the timing, form, and length of the crisis or of the recovery are the result of the interaction between the tendency (the increase in the organic composition) and the counter-tendencies, and thus of whether the former overpowers the latter or vice versa. The view that the law holds only if the rate of surplus value is held constant is based on a serious misunderstanding, the conflation of the secular and shorter periods. It follows that

12. there is no mechanical, inverse relation at each point in time between a rise in the organic composition and a fall in the ARP (or vice versa), and

<sup>4</sup> Statistical sources and methodology are listed in the Appendix to this paper. For recent different ways to calculate the profit rate, see Kliman (2010), Freeman (2010), Roberts (2009), Moseley (2009), Shaikh (2010), Husson (2010), Giussani (2005), Wolff (2003), Ekonomakis et al. (2010) and Cockshott and Zachariah (2010).

<sup>5</sup> The rate of profit has been calculated at historic costs.

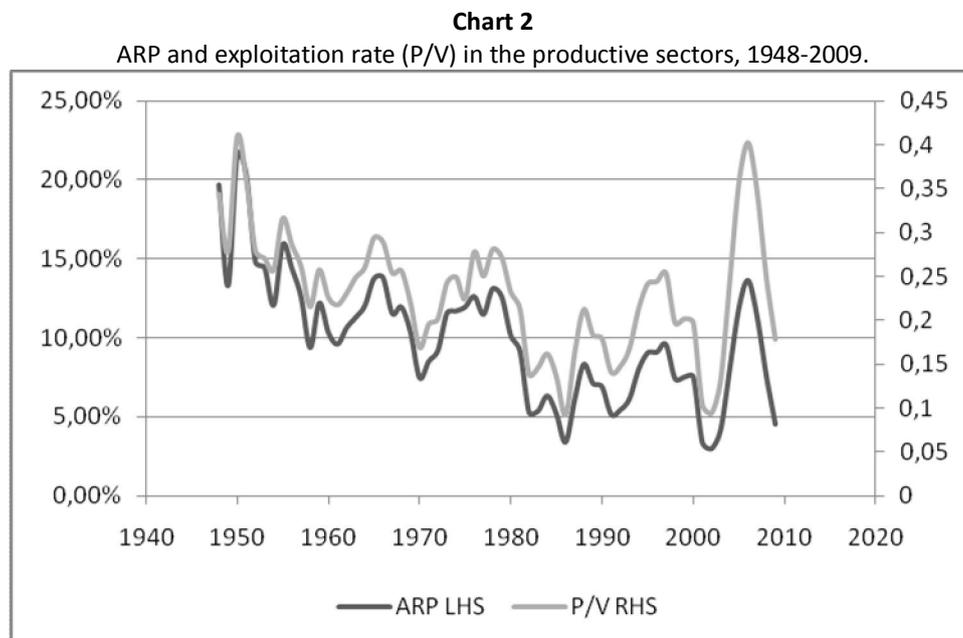
<sup>6</sup> Tendency and countertendencies refer to the theoretical status. Both are made empirically visible by their trends.

13. the secular downwards tendency keeps driving the economy towards the crisis even when in the shorter period its effect is temporarily suspended and reversed by the counter-tendencies.

In other words, *the tendency towards the crisis persists as long as the organic composition keeps rising, i.e. as long as the ARP would fall in the absence of the counter-tendencies*. Then, the increase in the ARP and the financial crisis can co-exist because the latter brings to an abrupt end those countertendencies that caused the former.

This paper considers three counter-tendencies. The first is the fall in the organic composition. The new technologies decrease the value of the output, including that of the produced means of production. In the following production period, the organic composition can decrease and, on this account, the ARP can rise. The critics of the law conclude that the effect of technological innovations on the organic composition and thus on average profitability is indeterminate.<sup>7</sup> However, there is no indeterminacy. What determines the necessarily downwards movement of the ARP and thus the tendency towards the crisis is the secular upwards tendency of the organic composition. The conjunctural indeterminateness takes place within this secular movement. Within it, the organic composition can rise together with the ARP.

Next, consider the rate of exploitation. Chart 2 shows that the ARP and the rate of exploitation exhibit roughly the same pattern. This indicates that in the 1948-1986 period the ARP rises in spite of a rise in the organic composition due to the rise in the rate of exploitation.



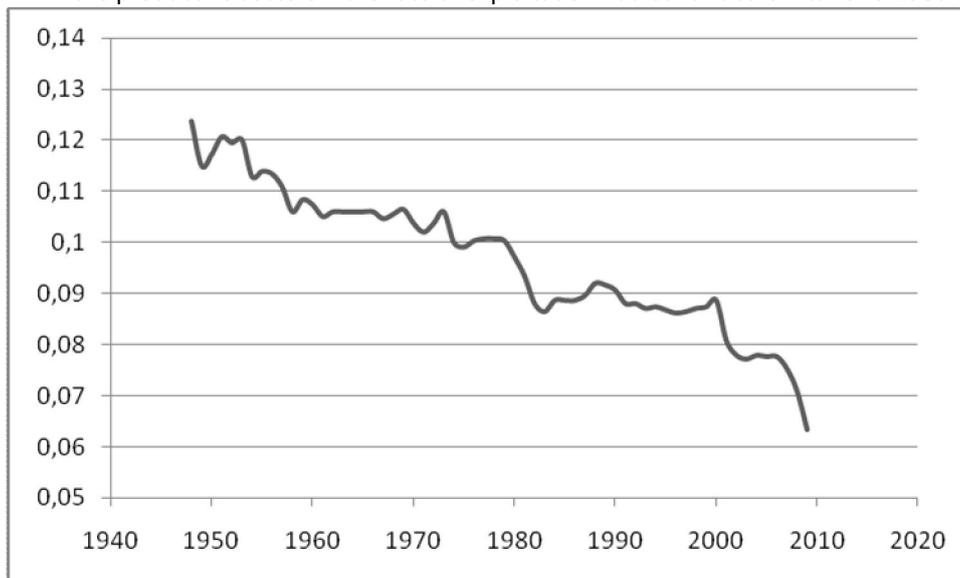
To assess whether this is the case, the average rate of exploitation has been computed for the 1948-1986 period and the ARP has been computed for the whole secular period according to this average, thus including the 1987-2009 period. This procedure shows what the ARP would have been in the 1987-2009 period if the rate of exploitation had not risen above the average of the previous period and thus isolates the course of the ARP from the increased exploitation for this period. Chart 3 shows that the ARP would have fallen dramatically. Therefore the ARP has risen because the rise in the rate of exploitation has overpowered the rise in the organic composition, because this countertendency has overpowered the tendency. We can get an indication of what the situation would have been if we consider that in 2006 the ARP was 14% but it would have been 8% without a rise in the rate of exploitation.<sup>8</sup>

<sup>7</sup> E.g. Husson, 2010a, p.8. But the critics along these lines are legions.

<sup>8</sup> Since wages include managerial income and that of all those who in Marx's theory perform the work of control and surveillance (Carchedi, 1977, chapter 1) and since this income derives from surplus value, a more accurate measurement of wages along these lines would produce a higher rate of exploitation. Richard Wolff (2010) reaches similar conclusions by focussing on manufacturing.

**Chart 3**

The ARP in the productive sectors if the rate of exploitation had continued on its 1948-1986 trend.



The rise in the ARP since 1986 has been due to an unprecedented jump in labour's exploitation. This is an indication of the magnitude of the defeat of the working class in the neo-liberalist era. The sad peculiarity is that the working class has not been able yet to rise again and claim a larger share of the new value produced. The view that the increase in the rate of exploitation cannot be considered to be a counter-tendency because it has been lasting since 1986 is based on a misunderstanding. A counter-tendency is such irrespective of the length of its duration. It persists as long as the conditions for its existence persists, in this case the defeat of the US (and the world's) working class.

The third counter-tendency is the migration of productive capital to the unproductive sectors where individual capitalists realize higher profit rates and the ARP rises but only under certain conditions. A distinction should be made between the commercial and the financial sectors.

Consider *commercial capital* first. The capitalist production (of surplus value) process is at the same time a labour process, a *transformation* of use values into different use values ( a *real* transformation), and a surplus value producing process, the provision of labour by the labourers for a time longer that the time needed for the reproduction of their labour power. Since commercial capital does not transform use values (it deals with commodities without changing them), it is unproductive. And if it is unproductive, the value accruing to it must be appropriated from the productive sector. If the commercial labourers buy commodities at below their value, they sell them at their value, and if they buy them at their value they must sell them at above their value. The more is the value gained by one sector, the greater is the value lost by the other and vice versa.

The transformation carried out by commercial labour is a *formal* transformation because it transforms (a) a real value into its representation, money, and vice versa, and (b) one form of representation of value into a different form.

Consider the work of drawing up the sale transaction (e.g. a title of ownership of a house). It could be held that the paper on which the contract is written is more valuable than a blank sheet of paper because of the ink consumed and the clerk's labour that have gone into that writing. However, that paper is more valuable because of the value it represents. Without that house that paper is worthless. The notary public might ask a higher fee for four hours of work rather than for two hours of work because unproductive labour mimics productive labour and is rewarded in terms of labour time. But this does not make of it productive labour. Since the value appropriated by the unproductive capitalist must be greater than the value of labour power employed, the harder and the longer commercial labour works, the greater the profits of commercial capital. Commercial labour is exploited in the sense that it appropriates, rather than producing, more surplus value than the value of its labour power.

The question now is whether commercial profits can raise the ARP and thus be a counter-tendency.

14. If the commercial capitalists purchase commodities from some capitalists at below their value and sell them to other capitalists at or above their value, there is *redistribution* of value within the capitalist sphere and the ARP is unchanged.
15. If commercial capital sells them to the workers at their value, there is no redistribution of value but *realization* of the value of the means of consumption.
16. If commercial capital sells them to the workers at above their value, there is an exchange of value for a greater quantity of a representation of value (money). In this case, there is *appropriation* of (a representation of) value from the workers, the ARP rises, and commercial capital has a countertendency function. But this countertendency comes up against its limit when savings dry up.

Consider next *financial capital*. If profitability falls in the productive sectors, capital moves to the financial sectors where higher profits can be made. This movement feeds the speculative bubble and ultimately the financial crisis. The origin of the financial crisis is thus to be found in the productive sphere. The opposite thesis holds that financial crises start in the financial sectors (e.g. Husson, 2010a, p.13; Chesnais, 2009-20010, p.11; Cockshott and Zachariah, 2010). This thesis is based upon three arguments.

17. The first argument is that the latest financial crisis has exploded in a period of rising profitability so that the productive sphere cannot be the cause of the financial crisis, contrary to Marx. This argument has been disposed of above.
18. The second argument is that financial and speculative activities are productive of value and surplus value because in these sectors money is invested in capital which begets more money than the money invested. The distinction between productive and unproductive labour should be abandoned and with it Marx's argument. This thesis overlooks that there is no real transformation in these sectors (see above).<sup>9</sup>
19. The third argument is that the financial crisis has first emerged in the financial and speculative spheres due to ballooning debts and policy mistakes (e.g. the deregulation and the attendant housing bubble and the subprime mortgage crisis of 2007). From there it has spilled over into the real economy. This is a subjective theory of crises. It can easily be dismissed by observing that if the same mistakes keep being made time and again, there must obviously be objective forces that compel economic agents to repeat those mistakes. Moreover, the financial crisis can affect the real economy only if the latter is already in a precarious situation.

For the present purposes, financial capital can be subdivided into money capital and loan capital. In *money capital*, money, a representation of value, becomes a commodity that can be bought and sold or exchanged for other representations of value. These are formal transformations, from a form into a different form of representation of value, as in the case of the exchange of different currencies or of the purchase/sale of stocks. This labour is unproductive.

*Loan capital* differs both from commercial and from money capital in that it is not a *representation* of value but of *debt*. It engages in transformations from a representation of value (e.g. money) into a representation of debt (bonds, derivatives, etc.), from a representation of debt into a different form of representation of debt (mortgages into mortgage backed securities), and from a representation of debt into a representation of value (the sale of a mortgage). These representations of debt are called by Marx *fictitious* capital: "With the development of interest-bearing capital and the credit system, all capital seems to double itself, and sometimes treble itself, by the various modes in which the same capital ... appears in different forms in different hands. The greater portion of this 'money-capital' is purely fictitious." (*Capital*, Vol. III, p. 470). For example, the same money (capital) appears first as a mortgage and then as a mortgage backed security. To consider these representations of debt as (financial) assets, as wealth, means to take the point of view of financial capital for which debt is wealth. No wonder, then, that economic theory considers the creation of credit and thus of debt as creation of money 'out of thin air', an absurd notion.

Titles of credit/debt have no intrinsic value. However, they have a price. Take a bond. Its price is given by the capitalization of future earnings and thus depends on the rate of interest. Marx refers to this as the "most fetish-like form" of capital because it seems that it is capital that creates surplus value, not labour (*Capital* III, p. 390). The reason

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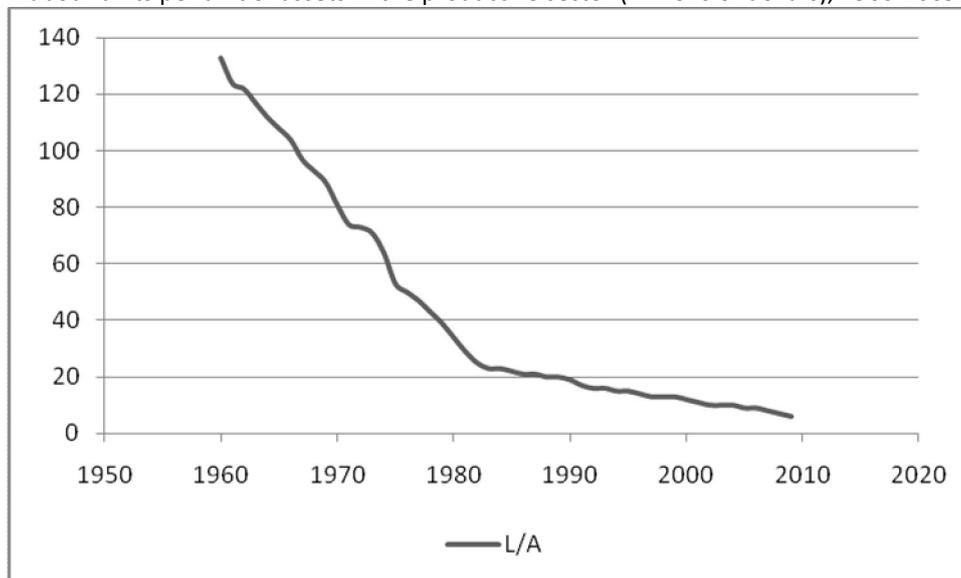
<sup>9</sup> Husson argues that financial profits should be included in the computation of the average profit rate because they are "a component of GDP of which the real counterparts are consumption, investment and the trade balance" Husson, 2010a, p.2).

why loan capital is fictitious capital is not that its price is due to the capitalization of future earnings. Rather this capitalization is the consequence of loan capital being fictitious capital because it is a representation of debt.<sup>10</sup>

If loan capital is fictitious, loan (financial) profits are fictitious too. They are fictitious not because they do not exist (as in some fraudulent accounting practices). They are the appropriation of a representation of value (money), and in this sense they are real. But they are fictitious because this appropriation is based upon a relation of debt/credit rather than of production. Financial capital sells valueless titles of debt for money. It appropriates value, always. If money is appropriated from other capitals, the ARP is unchanged. If it is appropriated from the workers, that rate increases. This is a countertendency. In essence, this is the class content of derivatives.

Chart 1 above shows that increasingly lower profit rates are *realized* in the productive sectors. This is because less value and surplus value are *produced* in those sectors. To see this, let us calculate the reciprocal of the organic composition of capital in terms of the labour power employed rather than in terms of variable capital (money wages). We obtain thus a ratio whose numerator is the labour power and the denominator are the assets, both employed in the productive sector. Call the former L and the latter A. Chart 6 shows the shape of the L/A ratio.<sup>11</sup>

**Chart 4**  
Labour units per unit of assets in the productive sector (millions of dollars), 1960-2009.



In 1960 133 workers were necessary for one unit of fixed assets. By 2009, that number had dropped to 6. The new value and thus the surplus value produced per unit of invested assets have been falling for the last 50 years and probably longer if pre-1960 data were available. The number of workers required by the growing value of the assets keeps decreasing and seems to tend towards the secular “absolute overproduction of capital”<sup>12</sup>, the point at which extra units of capital will produce no new value.<sup>13</sup> *On the basis of these technologies, there is an economic boundary to productivity increases.* This spells appropriation of surplus value from other countries, through appropriation of raw materials (e.g. oil) or through a constant deficit in the trade balance (since 1971) or by importing goods produced with low technologies and high exploitation rates from countries like China. But above all, as section IV below will argue, it spells the need for capital to self-destroy on a huge scale.

<sup>10</sup> Marx referred to capitalization as “the formation of fictitious capital” (Capital III, p. 466). But it is clear from the context that he means the formation of the price of fictitious capital. Perelman (2008, p. 19) and many other commentators considers capital as fictitious because its price is given by the capitalization of future incomes.

<sup>11</sup> This is only an indication of the production of value given that the value produced depends also on the length of the working day and on the intensity of labour.

<sup>12</sup> Marx, *Capital*, Vol.III, p.251.

<sup>13</sup> Each year L/A has been obtained by dividing total L by total A. This ratio is not the marginal ratio that has been computed by Giussani (2005, figure2) but it reaches similar results.

Actually, the number of productive workers per unit of assets is greater than that considered in chart 4 because value is created not only by labour employed in the production of objective goods (wrongly called material labour) but also by mental labour. Data on goods producing industries understate the surplus value produced. Indeed, mental labour can be productive of surplus value under conditions discussed in Carchedi 2010, chapter 2. Thus, chart 4 underestimates the production of new value. However, first, mental labour can also be (a) unproductive, (b) destructive, and (c) functional for the exploitation of labour. This reduces greatly the importance of mental labour for the production of new value. Secondly, the share of mental labour that has been incorporated in objective commodities is accounted for in the data above. Thirdly, the mental labour that is still un-embodied, e.g. an industrial patent, and that has been exchanged for objective goods, has also been accounted for by the objective goods industries' data. There remains only one category of mental labour, that which has been exchanged for the outcome of other mental labour and not yet incorporated in objective goods. It is doubtful whether this would alter significantly the data above.

**III. Lack of demand or lack of profits?** At present, Marx's law is challenged by underconsumptionism, the view that the crisis is the outcome of a decrease in the demand for *consumption* goods that in its turn is caused by a long-term drop in wages against a long-term productivity rise. Low wages translate into unsold wage goods, a loss for the producers of these goods, lower profitability in this sector, bankruptcies, unemployment, the spread of these difficulties to the sector producing investment goods, and the generalization of the crisis. Low wages, in turn, are said to have been caused by neo-liberalist economic policies.<sup>14</sup> Marx had empirically invalidated this thesis already in *Capital II* by noticing that crises are always preceded by a period in which wages rise (something that should not be construed as if crises are caused by high wages, see Carchedi, 2010). Why, then, can low wages not be the cause of crises?

Divide the economy into sector I producing investment goods and sector II producing consumption goods and assume a wage reduction across the board. Labour's purchasing power falls and labour cannot buy the consumption goods whose price is equal to the wage cut. Consider the following.

20. If *all* consumption goods are sold, i.e. if the goods that cannot be bought by labour are bought by the capitalists, lower wages imply greater profits for the capitalists in both sectors because the money saved on wages is used by the capitalists to buy the surplus product. The ARP rises.
21. If *no* consumption goods are sold because what cannot be bought by labour cannot be bought by capital either, sector I gains from lower wages and is not affected by failed realization because it does not produce consumption goods. Its profits rise. Sector II gains from lower wages but it suffers a loss because of lower realization of consumption goods by the workers in both sectors. It gains from its workers' lower wages what it loses from failed sales to those workers. Its net loss is then due to failed sales to sector I's workers. On balance, sector II loses what sector I gains. The numerator of the ARP does not change. The denominator does not change either because the money saved on wages is set aside as reserves that count in the calculation of the ARP. The ARP is constant, i.e. it does not fall even under this extreme assumption. But its internal composition has changed. Sector I's rate of profit rises at the expense of that in sector II.
22. If *some* of those consumption goods are sold, the ARP rises but less than if all goods were sold. Underconsumption of consumption goods due to lower wages *does not decrease* the ARP, at most it does not increase it.

But means of consumption are exchanged for means of production. Could the lower sale of the former not influence the sale of the latter, lower the ARP, and provoke the crisis? Consider the following:

23. If all the consumption goods that are not bought by labour are bought by capital, both sectors' profit rate rise. The ARP rises too.
24. If none of the goods unsold to labour are bought by capital, sector I pays  $w_1$  less to its workers, they can purchase  $w_1$  less means of consumption from sector II, sector II suffers a loss of  $w_1$  and cannot buy means of production from sector I for the same price. Sector I loses  $w_1$  due to unsold means of production but gains

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<sup>14</sup> As Laibman (2010, p. 382) points out, in this view the crisis is caused by a specific policy, neoliberalism, and not by the capitalist system. But if this crisis is caused by this policy, other crisis must have had other causes. For example, Anne Davies (2010, 419-420) speaks of a "variety of possible contradictions" causing the crisis, "such as ... a falling profit rate or a realization problem." However, if crises are recurrent, the question is what compels all those causes to recur. One cannot escape the question as to the ultimate cause of crises.

$w_1$  due to lower wages. Its rate of profit is unchanged. Sector II gains  $w_2$  from lower wages to its own workers but sells less means of consumption to them for an equal amount. Gain and loss compensate. But sector II suffers also a loss equal to  $w_1$  because of unsold means of consumption to sector I's workers. Its rate of profit falls. The ARP falls.

25. If some consumption goods are bought by capital, the ARP can either rise or fall.

Thus, it is possible that the ARP falls because of lower wages. However, this cannot be the cause of crises. First, the fall in the ARP is due only to the fall of sector II's rate of profit and there is no transmission mechanism in underconsumptionism for lower profitability in sector II to extend to sector I. Second, the underconsumptionist thesis rests upon the *assumption that the means of consumption not bought by labour remain unsold*. But in a situation of rising mass and rates of profit (the starting point needed to explain the origin of the crisis within recovery and boom), the means of consumption that are not bought by workers are either bought by capital or by the extra working force employed in the upwards phase of the cycle. To assume the contrary means to *presuppose* the crisis rather than explaining it. Four points follow.

26. the neo-liberalist policies based on massive wage reductions cannot be proved to have caused the present crisis;
27. underconsumption and its alter ego overproduction are the *result* of the crisis, they are a symptom, not the cause of the crisis;
28. if falling wages cannot cause the crisis, they must be its *consequence*, capital's conscious policy to offload the costs of the crisis onto its victims, the labourers.
29. once the crisis has set in, lower wages can worsen the crisis; but this is possible *only because profits are low and falling*, i.e. because the crisis has already set in.

Thus, lower wages can neither cause the crisis nor start the recovery. But the recovery cannot be started by higher wages either. Since higher wages do not increase the sale of investment goods, sector I's profits are reduced. Sector II gains from greater sales to its workers what it loses due to higher wages. But sector II sells also to sector I's workers. However, the sales by sector II of consumption goods to sector I remain unchanged: higher purchases by labour due to higher wages are matched by lower purchase by capital due to lower profits. The ARP falls.<sup>15</sup> This is the logical flaw inherent in the well meaning call for higher wages to exit the crisis. In sum, both higher and lower wages are impotent against the crisis.<sup>16</sup>

Underconsumptionism holds the contrary view on all the points made in this section. Of all the economic myths, the underconsumptionist views are the most firmly entrenched in the Left. But they are also the most damaging for labour because they support the illusion that the system is reformable, that redistributive measures can both avoid the crisis and reboot the economy. This deprives the struggle for the supersession of this system of its rationale.

**IV. The cycle.** If technological competition causes the increase in the organic composition (and thus of the efficiency) of the leaders and thus the bankruptcy of the laggards, the system tends towards capital's self-destruction. This is

Machinery which is not used is not capital. Labour which is not exploited is equivalent to lost production. Raw material which lies unused is no capital. Buildings ... which are either unused or remain unfinished, commodities which rot in warehouses – all this is destruction of capital (Theories of surplus value, II, p. 495)

Marx is referring here to the destruction of capital *in the real sector* and is implicitly distinguishing between two cases. If capital is a social relation of production, its destruction is the *severance* of that relation following the laggards' bankruptcies, so that means of production, labour power and other commodities are prevented from acting as capital. Outside of this relation, these commodities become potential capital which might become again realized capital in the next upwards phase of the cycle. This form of capital destruction leaves their use value and thus their value unaltered. Their price might fall because of their partial unemployment but this price movement rather than being capital

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<sup>15</sup> This should not be construed as if rising wages were the origin of crisis (the profit squeeze thesis). In the upwards phase, both the rate and the mass of profits rise so that rising wages dampen the rise in profitability but do not cause its fall.

<sup>16</sup> For Foster and Magdoff (2008) "the best way to help both the economy and those at the bottom is to address the needs of the latter directly". This helps labour, not the (capitalist) economy whose index of health is the profit rate.

destruction is a consequence of that destruction. For example, technological depreciation does not destroy constant capital as long as the laggards' means of production are still in use. Rather, there is a transfer of value from the laggards to the leaders via the price system. But Marx refers also to a second form of capital destruction. If, as a result of the crisis of realization, commodities lie unused in warehouses, part or all of their use value might vanish due to the effect of time, weather, etc. If their use value is destroyed, the value contained in them is also destroyed. This is "depreciation of values" and thus as a consequence a "fall in [their] price" (op. cit. p. 496). Wars have the same effect. In this case, price movements indicate not the destruction of a relation but of objective commodities. Falling prices do not cause the destruction of capital. Rather they are a consequence of it. In short, *destruction of real capital is the severance of the production relation and the destruction of (the value contained in) objective commodities as a consequence of that severance.*

The catalyst of the destruction of real capital is the destruction of fictitious capital. As mentioned above, as profitability falls in the productive sectors, real capital migrates massively to the fictitious sphere. The *financial/speculative bubble* is in the making. Let us consider two among the many forms taken by the bubble. The first is the overexposure of the institutions operating in the financial sphere. Suppose a bank wants to issue mortgages for 400M but has only 100M. Driven by the expectation of steady and rising profits, it borrows 300M, 100M from each of 3 other banks. Each of these banks signs a credit default swap with an insurance company. If now the mortgagers default, that bank lose (part of) its capital, its assets might fall below its liabilities, and it might have to fold up. The first bank's difficulties might cause a run on the other three banks if their depositors fear that the first bank could default on its debts, whether this is really the case or not. These banks might be unable to satisfy withdrawal demand and fail even if they were solvent. These bankruptcies affect the financial health of the insurance company as well. It has insured a credit of 300M because some Nobel prize winner clever statistician has developed a formula that shows that all the 3 banks cannot fail at the same time. In short, the assumptions upon which that formula is based does not consider a generalized crisis. If the crisis explodes, financial disaster strikes. The insurer does not have sufficient capital to pay the 3 banks and fails as well. A default unleashes a domino effect because of the pyramid of debts. This is *destruction of fictitious capital, the severance of credit relations due to bankruptcies in the financial sectors or the writing down of the price of the titles of credit if the creditors lose only part of their credit.*

The bubble can develop also in another way. As real capital flows into finance and speculation, the prices of the titles of credit rise, more investors expecting further higher price are drawn in, and the process becomes self-expanding. But at a certain point the debt burden becomes too heavy because of the decreased quantity of (surplus) value that can be siphoned-off from other sectors. Then, the demand for those titles diminishes and with it their price. The problem is compounded if the banks have bought derivatives whose collateral has become worthless, as in the case of collateralized debt obligation based on mortgage backed securities. Financial institutions that have bought those titles at inflated prices have now on their balance sheets assets whose price must be drastically written down or even erased. If capitalization falls too low, some banks might have to close down. Falling prices indicate a destruction of capital *only* in the financial sphere.

The chain reaction of defaults in the financial sphere ignites a similar process in the real sphere. But the productive sphere is affected by the massive destruction of fictitious capital because of the former's already weakened profitability, which is what provoked the migration of capital to the financial and the speculative sectors to begin with. The real economy is the cause of both the rise and the burst of the financial/speculative bubble. It is at this point that the real dimension of the weakness of the productive economy emerges. At present (April, 2011), the financial bubble has reached gigantic proportions. The size of the derivatives (e.g. mortgage backed securities, collateralized debt obligations, and credit default swaps, as analyzed in Carchedi, 2010) is now 10 times greater than the world's GDP and is growing. The explosion of the bubble has been countered by massive injections of liquidity basically in the banking system.<sup>17</sup> But skyrocketing governments' debts and deficits have taken the pressure off the banking system only to create a huge state bubble and a looming sovereign debt crisis: in March, 2011, the combined deficit of the OECD countries had grown almost sevenfold since 2007 while their debt had reached a record \$43 trillion. In the euro zone, deficits increased 12-fold in the same period while debts has risen to \$7.7 trillion (*Spiegel Online International*, "[Huge National Debts Could Push Euro Zone into Bankruptcy](#)", 05/03/2010). The recently agreed to European Stability Mechanism (which will replace the European Financial Stability facility which has come to the aid of Greece, Ireland, and Portugal) will only go into effect in 2013 and will be founded with only 500 billion euros (*Spiegel Online International*, "[European Central Bank Faces Interest-Rate Dilemma](#)", 04/08/2011). It is clear that this is only a postponement of the day of reckoning.

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<sup>17</sup> \$10 trillions, according to Bellamy Foster writing in March 2009 (Foster, 2009).

It is fashionable nowadays to try and integrate Minsky and Marx. A somewhat detailed critique of this approach is beyond the limits of space of this article. Here I shall mention only a couple of points. First, both for Marx and for Minsky the capitalist economy is fundamentally unstable and develops through time (whereas neoclassical theorems as well as many Marxists focus on equilibrium and abstract from time). But here the similarities end. Minsky (following Keynes) sees the economy “from the board room of a Wall Street investment bank” (p. 61), Marx from the perspective of labour. Therefore, for Minsky’s, the economy’s instability is basically *financial* instability. This is due to the “subjective nature of expectations about the future course of investment” (65). Investments here are basically financial investments because they are determined by borrowing and lending. For Marx, the economy’s instability is an objective feature, it is the result of the crisis prone tendency in the real economy towards crises, first in that sector and then in the financial ones. The major subjective determinant of investments and employment is the individual capitalists’ expected profit rates. But the ARP falls just because of the subjective nature of expectations, because all capitalists aim at maximizing their profit rates by introducing more efficient techniques. Also, for Minsky profits depend on expenditures whereas for Marx they depend of the rate of exploitation. More generally, Minsky erases Marx’s classes, class interests, and class struggle. Thus, for Minsky, government spending (deficit) can offset private spending and even increase profits (p. 64-5). For Marx, value transfers from capital to labour decrease profitability thus amplifying the cycle while transfers from labour to capital increase profitability but augment the difficulties of realization. Neither redistribution (see above) not Keynesian policies (see below) can push the economy out of depression and crisis. Marx’s and Minsky’s are not complementary but radically alternative theories. And, in any case, there is nothing in Minsky concerning financial crises and bubbles that cannot be explained by applying Marx’s analysis and categories to the present.

The downwards movement in the ARP is the *depression*. As mentioned in section II above, this movement is tendential, i.e. it is slowed down and held back temporarily by the countertendencies. When these latter have reached the point at which they become ineffectual, the crisis explodes. The *crisis*, then, is the point at which the countertendencies cannot hold back any longer the tendency so that the destruction of capital becomes manifest in a sudden and violent way. The *recovery* begins when the conditions emerge for the ARP to start rising again. In the recovery net capital accumulation increases. But if capital is accumulated on the basis of a renewed increase in the organic composition, the condition for a renewed depression emerges anew. Two points should be mentioned. During depression and crises capital accumulation slows down. But the essence of a crisis is capital destruction as a consequence of decreasing average profitability rather than what is determined by low profitability, low accumulation. Also, when the economic boom turns into depression (when the ARP starts falling) capital accumulation can continue for some time while the ARP has already started to fall because the labour force shed by the laggards is employed by the leaders. This reinforces the fall in the ARP. Expanded reproduction with a falling ARP is a foreboding of crisis but not yet the crisis.

Let us now consider the conditions for the recovery to take off. Just as the recovery carries within itself the seeds of the crisis, so is the crisis the humus that generates the recovery. A distinction should be made between the secular recovery and shorter-terms recoveries. Let us begin with the latter.

30. Labour power is available in large quantities due to unemployment. Consequently, wages are low and the rate of exploitation is high.
31. The speculative bubble must have burst so that the unproductive sectors’ claim on the surplus value extracted in the productive sector is reduced.<sup>18</sup>
32. Constant capital is available for the new productive investments both because of large reserves created during the depression and because following the explosion of the financial bubble, the capital that has migrated to the unproductive sectors returns to the productive one.
33. The commodities (including the means of production) of the bankrupt capitals are bought at that lower price by the survived capital. This decreases the average organic composition.

These are the conditions for an increased *production* of surplus value. But they are not sufficient. The extra value and surplus value must be *realized*. The condition for the extra surplus value to be realized is that sufficient capital has been destroyed i.e. that sufficient capitalists have gone bankrupt: “Under all circumstances (...) the balance will be restored by the *destruction of capital* to a greater or lesser extent.” (Marx, 1992, p.328). The capitalists who have

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<sup>18</sup> “Banks have written off about \$2-3trn out of debt assets of around \$60trn globally, so less than 5%. They still hold trillions of debt that represent worthless assets. Before profitability can really be restored, much more of this fake value needs to be destroyed.” Michael Roberts, p. 285.

weathered the storm can fill the markets left empty by the bankrupt capitalists or can create new markets that replace the older ones and which can attract the purchasing power previously spent on the product of the bankrupt capitals. At this point, the extra production gets the green light and profits are reinvested in the productive sphere, together with the reserves set aside during the crisis. Enlarged reproduction follows. Capital needs a moment of catharsis. It needs to destroy itself partially in order to regenerate itself. The larger the destruction, the more vigorous the recovery.

The most influential alternative to Marx's view are Keynesian policies. Section III above has rejected the view that pro-labour redistribution can start the recovery. The question now is whether Keynesian policies can perform the trick.<sup>19</sup> The strongest case for Keynesian interventionism as an anti-crises strategy hinges on the *investment* of idle reserves, i.e. of un-capitalized *surplus value*. In essence, the state appropriates profits (e.g. through taxation) or borrows them (e.g. by issuing state bonds) and uses them to commission public works to private capital (the case of appropriation or borrowing of labour's savings is not what is advocated by left Keynesians but will be dealt with below for sake of completeness).<sup>20</sup> Clearly, as long as these policies are applied within capitalism, their success must be measured by their ability to increase *private capital's profitability*.

The Keynesian argument holds that state investments increase employment and wages. These spur the sales of consumption goods to labour. And this in turn increases production and profits, thus starting the recovery. Let us examine this thesis.

Let us disaggregate private capital into two sectors, sector 1 producing public works, and sector 2 encompassing the rest of the capitalists, i.e. the producers of both means of consumption and of means of production. Faced with underconsumption (the Keynesian alarm signal), the state appropriates profits (e.g. through taxation) from sector 2 for a value of  $S$  and uses them (a) to pay sector 1 the going rate of profit  $p$  and (b) to advance the capital sector 1 needs for its production of public works ( $S-p$ ). Then:

34. The state receives public works from sector 1 for a value of  $S-p+p^*$ , where  $p^*$  is the surplus value generated in sector 1, whether  $p^*$  is equal to  $p$  or not. Sector 1 realizes its profits because it has gotten  $p$  from the state. The surplus value generated by it during the construction of public works ( $p^*$ ) belongs to the state.
35. How does the state realize  $S-p+p^*$ , the total value incorporated in public works? Under capitalism, value is realized only if and when it is metamorphosed into money through the sale of the use value in which it is incorporated. Since the state does not sell public works (unless it privatize them, but privatization falls outside the present scope), it would seem that that value remains potential, trapped into an unsold use value. However, public works have a different way to be sold, to realize their value. Their use value is consumed by the users of those facilities who, in exchange for this use, must pay for the share of the value contained in the public works they consume. Upon the total consumption of public works, the state receives  $S-p+p^*$ . The state realizes the potential value of public works by charging capital and labour for their use. These fees are an indirect reduction of wages and profits.
36. A value  $p$  is transferred via the state from sector 2 to sector 1. This transfer does not affect private capital's ARP. However, sector 2 has lost  $S$ . The private sector loses  $S-p$  to the state.
37. The state has gained  $S-p+p^*$ , sector 1 has gained  $p$ , sector 2 has lost  $S$ , and the private sector has lost  $S-p$ . The numerator of private capital's ARP decreases by  $S-p$ . The denominator rises because of the investment of  $S-p$  in sector 1. The ARP falls on both accounts. However, *employment and wages increase* due to the previously idle  $S-p$  which is invested by sector 1.
38. The state can provide public services to labour either partly or completely free of charge. This increases indirect wages but cannot prevent the ARP in the private sector from falling.

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<sup>19</sup> In what follows the focus is not on conformity to 'what Keynes really said.' This is important in a different context but beside the point here. The point is whether Keynesian policies are, or could be if properly and sufficiently applied, an antidote against the crisis rather than being at best a provisional palliative, a resting pause in the unfolding of the drama. This is not to deny that public works, for example infrastructures, improve the *productivity* (efficiency) of labour. But the question is whether, for how long, and in what measure they can improve private capital's average *profitability*. This, in the last analysis, is what matters to capital.

<sup>20</sup> The direct investment by the state rather than via private capital would introduce significant changes but would not alter the essence of the argument. Military Keynesianism and green Keynesianism are not dealt with here for lack of space. See Richard Wolff 2010; Bellamy Foster 2009.

Public investments not only reduce private capital's profit rate, they also crowd out private investments and thus reduce the mass of profits which can be appropriated by the state. This deprives Keynes' "somewhat comprehensive socialization of investments" of a real basis (Keynes, 1964, p378). However, to build public works, sector 1's capitalists (the producers of public works) purchase labour power and means of production from sector 2 and both capital and labour in sector 1 purchase means of consumption from sector 2. Sector 2 might expand and thus the mass of profits it generates might increase. But sector 2's private capital expands its investments and its mass of profit only if the rate of profit expands. The conditions are that Keynesian investments are large enough to absorb inventories and excess capacity so that new production can start, that they can be constantly renewed, that they are invested in low organic composition technologies, and that their profits are reinvested in the productive sphere so that more surplus value than **S-p** is produced, i.e. that private capital's average profitability increases. This is highly unlikely. Nevertheless, might not this increased profitability be the start of a new process of expanded reproduction?

As seen above, the recovery presupposes not only a greater *production* of surplus value percentagewise. It presupposes the existence of the condition for that greater production to be *realized*. This condition is the destruction of capital, the disappearance of the weaker capitals and thus the possibilities for the surviving capitals to step into the markets left vacant or to create new fields of investments replacing the old ones. But *each time Keynesian policies manage to raise private capital's average profitability, they at the same time prevent it from destroying itself and thus from creating the condition for its own recovery*. This disposes also of the Keynesian argument that Keynesian policies could be financed through borrowing and that the debt could be repaid when the economy sets in. Keynesian economists think that this is their strongest argument. Actually, it is here that the Keynesian hypothesis is weakest. Were it for Keynesian policies, recovery would never come about. At this point, radical Keynesians argue that the state sector should not work on capitalist principles and that its continuous expansion would provide a way towards a non-capitalist economy. Aside from the political naiveté of this argument, it is obvious that Keynesian policies find their limit in the decreasing production of surplus value in the capitalist sector.

Keynesian policies are at least co-financed by labour, i.e. through appropriation of the labourers' savings, i.e. of wages. Instead of determining the conditions under which these policies raise the ARP, let us assume that they always raise it. Then, the magic of Keynesian policies vanishes into thin air. In fact:

39. Higher profitability is labour-financed and thus at the cost of labour, contrary to the stated Keynesian aim.
40. The greater profitability does not depend upon the greater sale of consumption goods. On the contrary, there is an inverse relation between the two variables. The outcome in terms of profitability can be positive but that in terms of wages is always negative. This means that an increment in the labour-financed ARP requires greater underconsumption, contrary to the Keynesian hypothesis.
41. The secret of their success is revealed to be simply a higher rate of exploitation.
42. Most importantly, similarly to capital-financed Keynesian policies, even if labour-financed Keynesian policies increase average profitability, they hinder a self-sustained recovery because they prevent capital self-destruction.

We now come to the conditions for a long-term recovery and boom. Some authors argue that government investments are not successful because of its limited size. The example usually mentioned is the 1929 crash, the ensuing WWII, and the long period of prosperity that followed it. If massive state-induced investments in the arms industry have pulled the economy out of a long and deep recession and ensured a Golden Age for capital, so the argument goes, why could not the same be done in peacetime by investing in the civilian economy? Would this not be *the* condition for a long-term, possibly secular recovery?

Consider first the real impact of the war economy. Prior to it, the ARP fell from 14% in 1929 to 6% in the depth of the recession in 1933. After that, it started to recover and by 1939, right before the war it had climbed to 11%. After the very short spell of war induced high profitability, the ARP started to fall vertically. Only one year after the end of the war, in 1946 it had gone back to 14%, its 1929 level.<sup>21</sup> The war effort had only a very short-lived effect on post-WWII average profitability.

Why did the war bring about such a jump in the ARP in the 1940-45 period? The first factor was a fall in the organic composition because of near full capacity utilization of existing means of production (rather than the production of

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<sup>21</sup> I take these data from Freeman, 2010. My own data start in 1948.

new means of production). The denominator of the ARP not only did not rise, it dropped because the physical depreciation of the means of production was greater than new investments. At the same time, unemployment practically disappeared. Decreasing unemployment made higher wages possible.<sup>22</sup> But higher wages did no dent profitability. The conversion of civilian into the military industries caused the reduced supply of civilian goods to the advantage of military goods. Higher wages and the limited production of consumer goods meant that labour's purchasing power had to be greatly compressed in order to avoid inflation. Thus, labour's purchasing power was curbed by the institution of the first general income tax, consumer spending was discouraged (credit cards and consumer credit were prohibited), and consumer saving was stimulated principally through investment in war bonds. Consequently, rising wages did not affect the ARP because labour was forced to postpone the expenditure of a sizable portion of wages.<sup>23</sup> At the same time labour's rate of exploitation increased.<sup>24</sup> In essence, the war effort was a labour-financed massive production of means of destruction.

After the war, the economy started reconverting from military to civilian industries. This required the release of the purchasing power pent-up during the war. Capital started to flow into the production of consumption goods whose purchase was ensured by the freed purchasing power. The level of living of US labour rose. This spurred the manufacturing of means of production both for means of consumption and for means of production and thus the creation of the demand for these goods.<sup>25</sup> The multiplying reciprocal effects of high demand and productive capacity resulted into a long-run expanded reproduction. But this could not continue indefinitely because the seeds of the crisis had already been sown in this boom era. The basis for the manufacturing of the means of consumption and of production were the application of technologies developed during the war to the civilian economy. However, as these technologies became more and more capital intensive, the organic composition started to rise. At the same time, the power of the working class had grown due to near full employment during the war. Wages had risen and the rate of exploitation dropped because of labour greater negotiating power. Higher wages, lower exploitation and higher organic composition meant that the ARP started to fall soon after the war.

This deterioration was hidden by capital's higher physical production, by the technological leaders' higher profitability, and by labour's improved living conditions. This created a generalized welfare, even though very unequally distributed. Thus, before the effects of the lower ARP could emerge, 25 years went by. At that point, the long descent of the ARP that had begun right after the war put an end to the Golden age.<sup>26</sup> The effects of the fall in the ARP had been merely postponed. It looked as if the new technologies had spurred the economy and labour's welfare. Actually, far from increasing general profitability, they were the major force behind the long, secular increase in the organic composition and consequent fall in the ARP.<sup>27</sup>

But the war-related innovations had also another effect. When they started to penetrate into the civilian economy, new products came into being. New needs had to be created. The material basis of capitalism began to undergo a profound mutation. The post-WWII capitalist society changed beyond recognition while the fundamental laws of its motion remained unchanged.

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<sup>22</sup> "Between January 1941 and July 1945 average weekly earnings in manufacturing industry in the United States rose by 70 per cent." (Milward, 1977, p.236. See also p. 238).

<sup>23</sup> "In such circumstances the wartime gain in real wages was not comparable to a similar movement in peacetime" (Milward, op.cit., p.239).

<sup>24</sup> "The average working week in the United States increased from thirty-eight to forty-five hours during the war" (Milward, op.cit., p.229).

<sup>25</sup> Problems of realization were somewhat reduced also by the Marshall Plan. The plan helped create foreign markets basically for big US corporations. Its impact on US exports is contentious. From 1948 to 1952, 13.3bn were granted, which is only about 1% of GDP per year. However, one should consider which industries benefitted (\$3.5bn was spent on raw materials; \$3.2 billion on food, feed and fertilizer; \$1.9 billion on machinery and vehicles; \$1.6 billion on fuel) and which corporations: General Motors got \$5.5 million worth of orders between July 1950 and 1951 (14.7% of the total) and Ford Motor Company got \$1 million (4.2% of the total). The biggest beneficiary was Anderson, Clayton & Co. with \$10 million of orders up to the summer of 1949. William Clayton, the co-owner of this firm and the Undersecretary for Economic Affairs, whose tour of Europe and letters sent back to Washington played a key role in preparing the plan, and who pushed it through Congress, personally profited to the tune of \$700,000 a year.

<sup>26</sup> The US never gave up the war industry. This aspect of the crisis theory cannot be discussed here for lack of space.

<sup>27</sup> Some of the reasons for the post-WWII boom are mentioned also by the Monthly review school, but from a stagnationist perspective (Foster and Magdoff, 2008). Within that perspective, crises are not determined by the falling profit rate and overproduction becomes the cause rather than the consequence of the crisis.

The Golden Age lasted until around 1970. Around that year, the movement changed direction. The rising organic composition started to bite into employment. The rate of unemployment rose from 4.9% in 1970 to 10% in 2010 according to the U3 measure (but 17% according to the U6 measure and 22% according to SGS estimates). High unemployment affected the rate of exploitation that rose enormously especially with the advent of neo-liberalism (see charts 2 and 3 above). The condition of the working class began to deteriorate and has been worsening ever since.

The lesson to be learned from WWII is that massive military production and its guaranteed realization avoided the problem of realization that would have arisen if more civilian goods had been produced. The same result could have been achieved if wasteful or luxury goods had been produced. But the party was over as soon as the production of civilian goods (partly) replaced weapons production, the pent-up consumer demand was released, the rate of exploitation fell, and massive state-induced investments were discontinued because unsustainable. Thus, *within capitalism*, massive civilian investments as an anti-crisis policy would have to be labour-financed, i.e. based on low wages and high rates of exploitation (in order not to dent profits) and in wasteful or luxury goods rather than in wage goods (because their realization does not require higher wages). This can be done for a few years as during WWII but is unsustainable as a longer-term or permanent solution. But, this aside, this is not what one would call a labour-friendly solution. Moreover, the growing quantity of new value needed for these policies would have to be invested in low-technology, low organic composition techniques. But this is exactly the opposite of capitalist dynamics.<sup>28</sup>

What next? Forecasting is notoriously difficult. A third world conflagration is unlikely but given the nature of the beast, it cannot be ruled out. The solution will probably be economic, not military. The above has submitted that the conditions for the renewed production of increasing quantities of surplus value are already present and that what is needed is a generalized and massive destruction of capital. *This destruction of capital is inevitable because as chart 5 above shows the technologies incorporated in the productive assets are about to reach their limit in terms of production of new value.* Commentators stress the danger for the system coming from runaway debt in all its forms. This is correct, but it is only half of the story. Marxian theory goes further than the analysis of financial and speculative capital. The other, determining half of the picture is that new technologies, having practically cancelled variable capital in the productive sectors, have exhausted their propelling function. When they will reach their limit, a new phase of capital accumulation will start on the basis of massive wave of investment in new technologies. This is what happened after the Second World War. That war has been a mine of inventions, from the jet plane to ballistic missiles, from atomic energy to computers, from synthetic rubber to radar, just to mention a few. These inventions became the new technologies that flowed over into the civilian economy and became the new material basis of the post-war economy. They replaced old fields of investment and means of production and formed new ones (the need for whose commodities had to be created). Furthermore, old lines of production were completely revolutionized. The civilian economy was jump-started again.<sup>29</sup>

But that was 65 years ago. If the productive sector of the US economy is something to go by, existing technologies or new developments on the basis of these technologies are tending towards the point at which capital increments will produce no new value (see chart 4 above). What capital now needs is the application of radically different technologies that will create new commodities and new needs on a massive scale on the basis of an initial low organic composition. These new technologies have been developed towards the end of the last century and are available and ready for large-scale application across the entire spectrum of the economy when the economic conditions will be ripe. Let us mention some of them: biotechnology, genetic engineering, nanotechnology (that aims at the control of matter on an atomic and molecular scale); bioinformatics (the application of information technology and computer science to the field of molecular biology); genomics (the determination of the entire DNA sequence of organisms);

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<sup>28</sup> It is for these reasons that the following is unattainable. "If the state makes available, to as many people as possible on an equal basis, the capabilities that capitalism has brought into existence, stepping in wherever private capital will not, the crisis will end." (Freeman, 2009, [Investing in civilization](#), MPRA. p.12). Shaikh too thinks that direct government investments can pull the economy out of the crisis. This would stimulate "demand provided that the people so employed do not save the income or use it to pay down debt" (2010, p. 57). And Foster (2009) submits that "Theoretically, any increase in government spending at this time can help soften the downturn and even contribute to the eventual restoration of economic growth." One cannot fail to notice the unrealism of such Keynesian proposals.

<sup>29</sup> "a crisis always forms the starting-point of large new investments. Therefore, from the point of view of society as a whole ... a new material basis for the next turn-over cycle." Marx, *Capital II*, p.186. For Mandel, on the other hand, the upturn in the long waves is exogenous (1995, p. 42)

biopharmacology (the study of drugs produced using biotechnology); molecular computing (computational schemes which use individual atoms or molecules as a means of solving computational problems), and biomimetics (the science of copying life, i.e. the transfer of ideas from biology to technology).

We seem to be approaching a new phase of the development of capital's productive forces, a phase in which nature is not only exploited (destroyed) by capital but becomes capital and thus capital's basic productive force. On the basis of the history of capitalism, it is safe to speculate that this new phase, far from delivering a new era of civilization, will improve the condition of a minority of labour while at the same time generating new and even more terrible forms of exploitation. This, of course, assumes that this system will be able to avoid a major, human life-threatening ecological catastrophe, an increasingly unrealistic assumption. On this account too, humanity's only hope is a radical social restructuring following a socialist revolution.

**V. Marx or Keynes?** But let us return to the present. The struggle for higher wages, greater employment, and better living conditions can be waged from two opposite perspectives. From the underconsumptionist and Keynesian policies perspective, this struggle not only improves wages, employment, and the living conditions of the working class. It also provides the way out of the crisis by improving profitability through the labourers' greater purchasing power. This thesis stresses the commonality of interests between capital and labour. The Marxist thesis too argues that those demands are sacrosanct. But this struggle is waged from the perspective of the contradictory and mutually exclusive interests of the two fundamental classes. Labour should fight for a more favourable redistribution of value (including abolishing households' debts), for state induced civilian investments, and in general for labour-friendly reforms knowing that labour's gains are capital's losses and thus contribute to the objective weakening of capitalism rather than to its strengthening. This struggle should be part of a whole series of demands (including the defence of our ecological heritage and the reconversion of the military industry) whose purpose is in the short-term to make the culprits and not the victims pay for the effects of the crisis and in the longer-run to foster the consciousness that the way out of the crisis is the way out of this system. But this struggle should go further than mere antagonism. Labour should fight for these and other reforms from the perspective of, and thus introducing whenever possible, thoroughly alternative production and more generally social relations based upon cooperation, equality, and solidarity.

Since the capitalist economic system is a system of contradictory relations between social groups and classes, there will always be social subjects (to begin with, classes) who embody the tendency towards the supersession of the system and other social groups and classes who embody the counter-tendential movement towards its reproduction. Since people are conscious beings, there will always be social subjectivities expressing the systems' need to reproduce itself or its contrary need. Revolutionary social consciousness, whether realized or only potential, is thus a permanent feature of this system. Without this awareness, capitalism will continue to regenerate itself in new and more destructive forms that will remain, however, essentially the same. In the present conjuncture, underconsumptionism and the Keynesian ideology underpinning Keynesian reform programmes represent the main obstacle to the development of such awareness. For those who are truly interested in ending this barbarous social system, the choice is clear: Marx or Keynes.

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## Appendix. Statistical sources

The profit rate is computed for the productive sectors. The best approximation are the goods producing industries. These are defined as agriculture, mining, utilities, construction and manufacturing. However, in this paper utilities are disregarded (see below).

**Profits** are from BEA tables 6.17A, 6.17B, 6.17C, 6.17D: Corporate Profits before tax by Industry [Billions of dollars]. In the first three tables utilities are listed apart but in table 6.17D they are listed together with and cannot be separated from transportation. I have decided to disregard utilities in all four tables.

**Fixed assets.** Their definition is “equipment, software, and structures, including owner-occupied housing” ([http://www.bea.gov/national/pdf/Fixed\\_Assets\\_1925\\_97.pdf](http://www.bea.gov/national/pdf/Fixed_Assets_1925_97.pdf)). The data considered in this paper comprise agriculture, mining, construction, and manufacturing (but not utilities, see above). Fixed assets are obtained from BEA, Table 3.3ES: Historical-Cost Net Stock of Private Fixed Assets by Industry [Billions of dollars; yearend estimates].

**Wages** for goods producing industries and are obtained from Table 2.2A and 2.2B: wages and salaries disbursements by industry [billions of dollars].

**Employment** in goods producing industries is obtained from: US Department of Labor, Bureau of Labor Statistics, series ID CES0600000001.