

[The return from the grave, or Marx and the present crisis.](#)

G. Carchedi, Amsterdam, March 12, 2009

An analysis of the present crisis requires an evaluation of the most influential theses that purport to reveal its cause, consequences and possible remedies. There are five of them. The first one holds that the crisis has originated in the financial/speculative sphere due to extremely high levels of debt, rampant speculation, a permissive monetary policy, the loosening of rules governing borrowing and lending due to deregulation, and so on. In short, the crisis is the outcome of policy mistakes. The implication is that the crisis could have been avoided if different policies had been chosen. For example, Robin Blackburn states that “The source of the problems which surfaced in 2007—though some had warned about them years earlier—did not lie only in the US deficits or the Fed’s easy money policy. It also lay in an institutional complex and a string of disastrous incentives and agency problems riddling an over-extended system of financial intermediation”.¹ The obvious question is: given that crises are a recurrent and constant given of capitalism, if crises were due to the policy makers’ mistakes, why would these mistakes be recurrent and constant? If crises were epiphenomena, why would they recur regularly? Why would their amplitude grow to such a scale that they nowadays affect the whole of the world? Why would they accompany the introduction of capitalism whenever and wherever it penetrates and changes other modes of production? Why can’t policy makers learn from their mistakes? Obviously, there must be some structural reasons that prevent them from learning from their past mistakes, i.e. that force them to make those mistakes. Moreover, if it were only a matter of human error, crises would in principle not be inherent in capitalism, they would not be a necessarily recurrent manifestation of capitalism’s inner contradictions. The class content of this notion is revealed further down in discussing the underconsumptionist and the profit squeeze theories.

A second thesis, one that is presently enjoying wide currency within the Left, holds that the cause of crises has been a long-run fall in wages. Lower wages, it is submitted, instead of increasing the rate of profit cause it to fall because of failed realization first in the consumer goods sector and from there to other sectors. This is so because, in underconsumptionist fashion, the economy is driven in the last instance not by the movement of the average rate of profit (ARP) but by aggregate demand. This is demand for consumption goods by consumers, for investment goods by the capitalists and for both types of goods for public expenditure by the state. It can be argued that the demand for consumer goods is the crucial one. A fall in the demand for consumer goods provokes a chain reaction because the demand for the means of production needed to produce those consumer goods falls as well; this fall, in its turn provokes the fall in the demand for means of production needed to produce those means of production. If wages decrease, a part of the consumption goods, and thus of the investment goods, cannot be sold and capital suffers a loss. Consequently, the ARP falls. Lower wages are thus the cause of the crisis. Lower wages, in their turn, have been the result of neo-liberalist policies. If correct, this thesis would be a great critique of neo-liberalism. Unfortunately, this is not the case.

Marx had invalidated this thesis already in the second volume of *Capital* by noticing that

“It is sheer tautology to say that crises are caused by the scarcity of effective consumption ... That commodities are unsaleable means only that no effective purchasers have been found for them ... But if one were to attempt to give this tautology the semblance of a profounder justification by saying that the working-class receives too small a portion of its own product and the evil would be remedied as soon as it receives a larger share of it and its wages increase in consequence, one could only remark that crises are always prepared by precisely a period in which wages rise generally and the working-class actually gets a larger share of that part of the annual product which is intended for consumption. From the point of view of these advocates of sound and “simple” (!) common sense, such a period should rather remove the crisis” (*Capital*, Vol. II, pp.410-11).

That crises are preceded by a period of high wages and thus of relatively high consumption and realization of commodities was true in Marx’ times as it is nowadays. In the high growth period following post-WWII, wages grew at a sustained pace. As table 1 below shows, in the US wages grew by 2.5% annually from 1967 to 1973. After that year, suddenly the US economy started to experience increasing difficulties and the rate of growth of wages fell substantially (with the exception of the 1995-2000 quinquennium) until it became negative in the 2000-2004 period

Table 1. Trends in average wages, 1967-2004

Annual wages (thousands of 2005 \$)		Wages: annual growth rates:	
1967	25,509	1967-73	2.50%
1973	29,672	1973-79	0.1
1979	29,891	1979-89	0.9
1989	32,718	1989-2000	1.3
1995	33,657	-2084	0.5
2000	37,860	-3995	2.4
2004	37,424	2000-2004	-0.3

Source: State of Working America, 2006-7, table 3.1

Empirical observation, however, is insufficient to definitively reject a theory. Marx was obviously aware of the possibility that not all the output produced could be sold: "The entire mass of commodities ... must be sold. If this is not done ... the labourer has been indeed exploited, but his exploitation is not realised as such for the capitalist ... The conditions of direct exploitation, and those of realising it, are not identical. ... The first are only limited by the productive power of society, the latter by the proportional relation of the various branches of production and the consumer power of society" (1967, p.244). If commodities are unsold, capital suffers a loss and the ARP falls. Could lower wages, then, reduce the ARP and be the cause of crises? Consider the ARP before the wage cut

$$(1) \text{ ARP} = s/(c+v)$$

If wages are reduced, profits increase. This is the view of the individual capitalist. It applies also to the economy as a whole *only on one condition*: that the commodities not purchased by labour (due to lower wages) are purchased by capital (thanks to higher profits). It is capital's purchasing power that ensures the full realization of commodities in case of wage reductions. Therefore, if capital lacks sufficient purchasing power, some commodities will not be sold. A loss follows. Let us see what the consequences for the ARP are.

If wages are cut, (a) this wage cut must be deducted from variable capital and thus from the denominator of the ARP, thus reducing the costs of production. This increases the ARP *even if profits do not increase*. (b) If capital has sufficient purchasing power to absorb all the commodities not bought by labour, profits increase by the same quantity as the wage cuts and this increases the numerator of the ARP. (c) Inasmuch as the commodities that are not purchased by labour are not purchased by capital either, capital suffers a loss. This must be deducted from the numerator, from profits. Call

x = wage cut

y = capitals' absorption capacity.

Then, the following three considerations hold: (1) if $x > y$, $x - y = z$ = loss; (2) If $y = 0$, the loss is at its maximum, i.e. $z = x - y = x$; (3) in discussing the effects of wage cuts on the ARP, y cannot be $> x$ because we consider only the absorption capacity needed by capital to purchase the commodities not purchased by labour. Formula (1) becomes

$$(2) \text{ ARP} = (s+x-z)/(c+v-x)$$

If capital has sufficient purchasing power to absorb all the commodities that cannot be bought by labour, i.e. if $x = y$, there is *no loss* and capital gains both from lower wages and from the concomitant higher profits. Formula (2) becomes

$$(3) \text{ ARP} = (s+x)/(c+v-x)$$

If capital has no absorption capacity, all the commodities not purchased by labour are not bought by capital either. The loss (z) equals the wage cut (x) and there is *maximum loss* and thus minimum increase in the ARP. Formula (2) becomes

$$(4) \text{ ARP} = (s+x-x)/(c+v-x) = s/(c+v-x)$$

These different ARPs can be now compared to the ARP prior to the wage cut, i.e. formula (1). Given that $x > z$,

$$(5) (s+x)/(c+v-x) > (s+x-z)/(c+v-x) > s/(c+v-x) > s/(c+v)$$

Four conclusions follow. First, inequality (5) shows that, following a wage cut, the ARP rises to a level higher than the pre-cut level even in the case of maximum loss, i.e. even if all the profit accruing from lower wages is wiped out by the impossibility by capital to realize that extra profit. Lower wages cannot decrease the ARP to the pre-cut level and thus cannot be the cause of crises. This disproves definitely the underconsumptionist thesis.

Second, lower wages can cause realization failures if capital's absorption capacity is insufficient, and yet they cannot decrease the ARP to its level prior to the wage decrease. After a wage cut, the ARP rises even with maximum absorption failure, i.e. even if all the consumer goods not bought by labour cannot be bought by capital either. Labour becomes poorer by that much. Capital can keep growing thanks to lower wages even if less is sold to labour, i.e. even if labour has become poorer. It would be a strange capitalist indeed she who would close down a profit making enterprise only because it cannot sell all its output or because her labourers have become poorer.

Third, in general in the upwards phase both profits and wages increase and both capital and labour get richer. As accumulation slows down, wages come under pressure but capital's absorption capacity is sufficient to buy the consumer goods not bought by labour. Capital gets richer at the expense of labour. As depression and crisis set in, not only labour's absorption capacity falls due to lower wages but also capital's absorption capacity falls. The reason why capital's absorption capacity (i.e. profits) decreases in times of depression and crises is that in the downwards phase the weaker capitals go bankrupt. Every time a capital (say, capital A) ceases production, other capitals (say, capitals B) with which capital A had exchanged its products cannot exchange their products with capital A any more. They either cannot realize the value incorporated in those products or they must realize less value if those products are sold at lower prices. This loss decreases capital B's ability to absorb those consumption goods that could not be purchased by labour. The loss by some capitals is what explains other capital's decreased absorption capacity and thus failed realization. Thus, in the downward phase both labour and capital become poorer. Capital because of the fall in the ARP (see charts 1 and 2 below) and labour because of lower wages as shown in table 1 above and in table 2 below. If the minimum wage can be seen as a proxy for the value of de-skilled labour power, then table 2 indicates a rise in that value in the golden age of post-WWII capitalism and lower values ever since with an absolute low in 2005. The percentage changes are even more dramatic. The value of labour power falls by 29.5% from 1979 to 1989, it rises by 14.6% from 1989 to 2000, and then falls again by 11.8% from 2000 to 2005. For the whole period 1967-2005, the value of labour power falls by 25.7%.

Table 2. Value of minimum wage, % change

1979-89	-29.50%
1989-2000	14.6
2000-2005	-11.8
1967-2005	-25.7

Source: The state of working America, 2006-7, table 3.40

Fourth, if the increase in the ARP caused by lower wages can be completely or partially counterbalanced by an equal or smaller decrease in capital's absorption capacity, and if the ARP decreases by more than the increase due to lower wages, i.e. if the ARP decreases below the pre-wage cut level, *there must be a reason explaining the fall in the ARP that is not the fall in wages* (which is another way to prove the incorrectness of the underconsumptionism). The reason for the fall in the ARP is not difficult to find. The movement in the ARP is determined by two factors, the rate of exploitation (and thus by lower or higher wages) and by the organic composition of capital, i.e. the ratio of constant to variable capital. If the organic composition of capital increases, the ARP decreases. In fact, if the organic composition of capital is c/v and if the rate of surplus value is $s' = s/v$,

$$(6) \quad s'/(c+v) = (s/v)/[(c+v)/v] = s'/[(c+v)/v] = s'/(1+c/v)$$

Formula (6) shows that, given a certain s' , the ARP decreases as c/v increases, i.e. if the percentage increase in c is greater than the percentage increase in v . If c and v are expressed as percentages, this is always the case because an increase in c is at the same time a decrease in v . An increase in constant capital and/or a decrease in variable capital decrease the quantity of labour employed and thus the quantity of value and surplus value produced. This explains the tendential fall in the ARP, which is tendential because of many counteracting factors of which lower wages is one example.

In short, the underconsumptionism's mistake is three-fold. First, it does not see that the fall in the ARP following wage cuts is caused by labour's *and* capital's insufficient absorption capacity. If capital's absorption capacity remains the same or grows, it can compensate the fall in wages and concomitant loss of purchasing power by labour and thus the loss for capital. Second, it does not see that, if only the effect of lower wages on the ARP is considered, this fall starts from a level of the ARP higher than the pre-cut level and cannot fall to that level. Third, it does not see that the fall of capital's absorption capacity, and thus of the ARP, below its pre-cut level, it is not due to wage cuts but to the process just highlighted, i.e. that the ARP would fall even if wages did not fall (and actually it can fall also when wages increase). Since in the downwards trend the fall in capital's absorption capacity is greater than the advantage deriving from lower wages and since capital reduces wages in order to hold back the fall in the ARP, the illusion arises that it is wage cuts that cause the ARP to fall below its pre-cut level and thus that cause the crisis. But elementary algebra shows that this cannot be the case.

But there is a further two-fold critique. First, if lower wages were indeed the cause of crises, in principle the economy could exit the crisis through higher wages. But, as we shall see shortly, higher wages increase the realization by labour of commodities but decrease profits. Second, if the economy could exit the crisis through higher wages (a lower rate of exploitation), crises would be due to wrong distributional policies, and could thus in principle be avoided. If crises can be avoided, the economic system does not tend towards depressions and crises, as Marx holds, but towards recovery and booms, i.e. prosperity, as it is held almost unanimously even by many Marxists. The consequences for labour are disastrous. If the system tends towards prosperity and growth, even if through economic cycles with periods of depressions and crises, the system is rational. But if the system is rational, the struggle to replace it with a different system becomes irrational, because it fights against a rational system, and a pure act of will not based on an objective movement. Labour is deprived of the theoretical basis upon which to base its struggle. This is the class content of underconsumptionism. Underconsumptionism is not only irreconcilable with Marxism, it is also (and for this reason) deeply inimical to labour.

As an aside, we should mention that some authors argue that the peculiarity of this crisis is that the rest of the world has been able to postpone the realization difficulties due to labour's underconsumption by exporting consumer goods to the US. US consumers have been able to purchase those goods by incurring higher and higher levels of debt. However, the thesis continues, US consumers have recently become unable to absorb those goods due to collapse of the credit and debt system heralded by the collapse of the sub-prime mortgages and loans. This is why realization problems have re-emerged in the rest of the world. Whether this is a correct rendition of the present situation or not (the financial crisis will be dealt with later on), the origin of the crisis is still sought in the sphere of realization and the temporary postponement of these difficulties is provided by the US consumers' debt. The *debt* dimension accounts for the *delay* in the explosion of the crisis which is caused by decreasing possibilities to realize all the consumer goods as a result of lower wages. The critique above applies here too. Without the absorbing function of the US consumers based on debt, the rest of the world as well as the US consumers would have been faced with realization difficulties long ago. But this does not mean that these difficulties, whether delayed by debt or not, are the source of crises. This critique applies also to the case in which the level of wages is made to depend on class struggle. In this view, the present crisis has been caused by too low wages due to labour's failure to stop capital's offensive. The implication is that the economy could exit the crisis if a labour offensive could impose higher wages. The cause of the economic cycle is then the political cycle, the ups and downs of the class struggle. This thesis too must answer the critique above, namely that whether the class struggle explains the level of wages or not, lower wages cannot explain this or any other crisis because the effect of lower wages on the ARP can only be positive even if the maximum realization failure is considered.²

If lower wages cannot be cause of lower profit rates and crises, the theoretical possibility opens up to reverse the relation of causation, i.e. for the crisis to be the cause of lower wages.³ This brings us to the third alternative explanation, one that identifies the cause of crises in higher, rather than lower, wages.⁴ The argument runs more or less as follows. During recoveries and booms wages increase. At a certain point they become too high, the higher costs of production indent profitability and the rate of profit falls. The system is pushed over the edge and growth turns into depression. Then, if wages are sufficiently low, profits start increasing again. In this theory, falling profitability is caused neither by the percentage fall in the production of (surplus) value (as in Marx) nor by failed realization (as in underconsumptionism) but by the higher costs of labour power. This approach too comes in for a number of criticisms.

To begin with, empirical research refutes this thesis. In a recent (unpublished) paper, Alan Freeman tests the relative weight of the organic composition of capital and of wage share on the rate of profit. The author uses macroeconomic categories as proxies for the Marxian ones. The argument is that if the capital/output ratio is shown to dominate over all else, including the wage share, (a) the profit squeezed thesis is empirically undermined and (b) Marx's thesis is substantiated even in terms set by his detractors. In macroeconomics, the rate of profit is usually defined as

$$(3) \pi/K$$

where π is annual profits and K is accumulated fixed capital plus variable capital. Following a common procedure, this formula can be re-written as

$$(4) (\pi/Y) \times (Y/K)$$

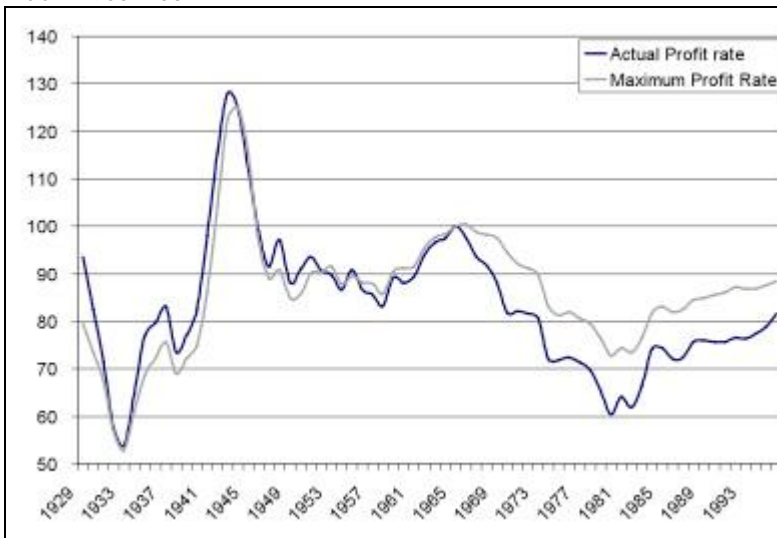
where Y stands for annual net output ($\pi + v$). In formula (4) the first term is the capitalists' share of income, or profit share, and the second is the output/capital ratio that Freeman prefers to call the maximum profit rate. Charts 1 and 2 show the results.

Chart 1: US profit rate and US profit share
Index: 1965=100



Source: Alan Freeman, What makes the US profit rate fall? Unpublished paper

Chart 2: US actual and maximum profit rate ('output-capital' ratio)
index: 1965=100



Source: Alan Freeman, What makes the US profit rate fall? Unpublished paper

It should be mentioned that the notions of π , K and Y diverge from Marx's own. On the one hand, K does not take into account constant circulating capital. On the other hand, for Marx the rate of surplus value is $s' = \pi/v$. But here it is $\pi/Y = \pi/(\pi+v)$. Moreover, the figures are those provided by official statistics. These figures are the monetary expression of use values rather than of value (a point to be discussed in more detail below). If these corrections could be made, the figures of the ARP would diverge from those in the two above mentioned charts. But the point is not the exact measurement of the ARP. The point is to gauge the relative weight of the two components on the ARP.

Keeping the above in mind, the results are summarized by the author as follows: "Chart 1 shows what would have happened if the only thing affecting the profit rate was the profit share – that is, if the output-capital ratio (maximum profit rate) were held constant. Chart 2 shows what would have happened if the profit share had no effect at all – that is, if the profit share is held constant". Chart 1 shows that the profit rate line and the profit share line do not exhibit the same general features. More precisely, in terms of regression analysis, a regression of the profit rate against the profit share between 1929 and 1965 yields an R^2 of 0.008, that is, 99.2 per cent of the variation in the profit rate is unexplained by the profit share. Over the period 1929 to 1996, R^2 is 0.193; that is, 80.7% of the variation in the profit rate is unexplained by the profit share. Given that income is divided into profits and wages, if the profit share has almost no explanatory power, the same holds for the wage share. On the other hand, chart 2 shows that the

output/capital ratio accounts for 91.9% of the variation in the profit rate between 1929 and 1965, and 75.7% of the variation between 1929 and 1996. With the sole exception of the five years of decline from 1965 to 1970, it accounts for almost the whole variation in the profit rate since 1929. Regression analysis cannot prove causation, yet these data are a powerful empirical support for the thesis that ties casually the ARP to the organic composition of capital. Further empirical substantiation will be provided below by charts 3 and 4 below.

Empirical refutation is important but even more important is theoretical invalidation. Two points can be mentioned in this connection. First, it is true that crises are preceded by economic growth in which wages rise (see Table 1 above). However this does not establish causation. The point is that the profit squeeze theory, just as the underconsumptionist one, is a redistributive theory which, as all similar theories, implies that the quantity of new value produced (wages plus profits) is the same. Clearly, then, the rate of profit decreases because it is implicitly assumed that the total value to be redistributed remains the same (or falls). However, in the high phase (the one assumed by the theory to explain the turning point from the high to the low phase) the new value produced rises. It is then perfectly possible and it actually occurs that in the upwards phase both profits and wages increase. The profit squeeze theory, then, cannot explain the inception of the depression. The reason for the turning point must be sought elsewhere. This reason has already been stressed above, it is the increase in the organic composition of capital. It can be shown, both theoretically and empirically, that the organic composition of capital keeps increasing also in the upwards trend, when accumulation is still increasing but the ARP starts decreasing. Higher wages decrease further the ARP, they accelerate that fall, but are not its principal cause. After depression sets in, the role of higher wages as an explanation for the crisis becomes even less plausible. During depressions and crises, wages tend to decrease (they are a countertendency, as pointed out above) rather than increasing. Consequently, "nothing is more absurd ... than to explain the fall in the rate of profit by a rise in the rate of wages" (Marx, *Capital III*, p.240). The profit squeeze theory cannot explain the course of depressions and crises either.⁵

Second, aside from this critique, we should consider the profit squeeze's class content. It has been pointed out by many commentators that this theory ends up by giving ammunition to the employers' claim that crises are due to too high wages and thus that in order to avoid/exit the crisis lower wages are necessary. Indeed, we have seen above that lower wages do increase the ARP. However, what explains recoveries and booms is not an increase in the share of profits relative to that of labour within the context of an unchanged production of surplus value, it is not an increase in the ARP due to redistribution, but that increase as a consequence of an expanded production of value and surplus value. For lower wages to spur a recovery, then, the extra surplus value must be invested. But in the downwards trend, capital eschews investments in the productive sphere where the profit rates are falling. They resume investing vigorously only when the turning point in the cycle has been surpassed. After that point, lower wages contribute to the recovery but cannot start the recovery before that point. But there is a deeper objection that has escaped, to the best of my knowledge, the commentators. This objection is similar to that raised against the Okishio's theorem (G. Carchedi, *Limits and Challenges of the Consistency Debate in Marxian Value Theory, Research In Political Economy*, Volume 25, Emerald Press, forthcoming 2009). Contrary to Marx, in the profit squeeze theory *labour is seen as a cost rather than as the source and content of value*. This is the standpoint of the individual capitalist for whom labour is indeed a cost. For the individual capitalist, higher costs (including wages) cause the ARP to fall and lower cost (wages) cause the ARP to rise. If this is extrapolated to the whole of the economy, i.e. if only the cost-effect of technological innovations is considered, and if technological innovations are the motor of capitalist competition, capitalism's inner dynamics is tendentially towards growth rather than crises. The consequences for labour's struggle are the same as those of underconsumptionism. Labour's struggle for the abolition of capitalism becomes both irrational (because it aims at superseding a rational economic system, a system tending towards economic growth and thus welfare) and a pure act of voluntarism (because it is not any more the conscious manifestation of the system's inherent tendency towards crises and thus towards its own supersession). This impact for labour's struggle is devastating. This view's theoretical horizon, as well as of any view that abandons the analysis in terms of value in favour of an analysis in terms of costs, is that of capital. Only value analysis makes possible an economic theory consonant with labour's interests and struggle. As held for underconsumptionism, the profit squeeze theory is not only inconsistent with Marx, not only it introduces an alien class content into Marxism, it is also a powerful demotivating factor for labour.

Up to here it has been held that distributional changes cannot cause crises. Then, there is only one alternative left: to look for the cause of crises in the sphere of production. A commonly held view, and this is the fourth thesis about the cause of crises, holds that crises are caused by decreasing productivity levels. This is contrary to Marx's view that crises are determined by the decreasing production of value and surplus value coupled with increasing productivity levels, i.e. of labour shedding and productivity increasing new technologies. If the decreasing productivity thesis were correct, we should be able to observe a decrease in productivity on the basis of which to explain the decrease in the ARP shown in chart 2 from 1945 to 1980, approximately. However, as table 3 below shows, the whole of the 1959-2007 period is one of increasing productivity (with only some occasional drops lasting only one year), whether the ARP increases or not

Table 3. Output/hour in the non farm business sector, 1992=100

1959	51.3	1985	87.5
1960	51.9	1990	94.5
1965	61.4	1995	102
1970	68	2000	115.7
1975	76.2	2005	134.1
1980	80.6	2007	135.9

Source: Economic Report of the President, 2008, table B49.

Data for 2007 refer to the first quarter. Output refers to GDP in that sector.

Notice that this refutation rests on the use of the categories used by the opponents of Marx, i.e. on official statistical data that collect the monetary expression of *use values*. These data do not measure the value contained in those use values. Since the decrease in the value produced is lost sight of, only the direct relation between physical productivity and ARP is perceived.⁶ Table 3 above, then, provides an empirical internal critique of the thesis. The only alternative left, and this is finally the fifth view, is Marx's thesis, i.e. the inverse relation between productivity and the ARP. Let us then set out briefly the cyclical movement.

New means of production, i.e. innovations, increase labour's productivity, defined as units of output (use values) per unit of capital invested. But they at the same time usually replace people with means of production. They are *labour shedding and productivity increasing innovations*. The economy's organic composition of capital, i.e. the proportion of constant capital (invested in means of production) to variable capital (invested in labour power) and thus of machines to labourers rises. If less labour power is employed, less (surplus) value is created by the innovating capitals. But this smaller quantity of (surplus) value is embodied in a greater quantity of use values, units of output. The economy as a whole produces more use values but less (surplus) value. This is the contradictory outcome of technological innovations and at the same time the *ultimate cause of economic crises*.

Due to the tendential price equalization within sectors, the innovators sell their greater output per unit of capital for the same unit price as the price of the smaller output (also per unit of capital) of their less efficient competitors. The former realize a higher rate of profit. But, if they produce less surplus value, their greater profitability cannot but come from the appropriation of surplus value from the other producers (laggards) in their own branch, i.e. through the price mechanism. At the same time, given that capitals migrate across branches searching for the highest feasible rate of profit, the several branches' profit rates tend to equalize into an average rate of profit (ARP).⁷ There is thus also a transfer of value across branches whenever a branch as a whole, due to the price of its products, realizes more or less value than that produced by it. Thus, if due to technological innovations in a branch less surplus value is produced in that branch and if that branch realizes the average rate of profit (i.e. if the average productivity capitals realize the average rate of profit), the innovators in that branch appropriate value both from the laggards in that same branch and from other branches.

In short, for Marx technological innovations tend to decrease the average rate of profit because they tend to replace labourers with machines. Since only labour creates values, the output per unit of capital increases while the value incorporated in it decreases. As Marx writes, "The value of a commodity is determined by the total labour-time of past and living labour incorporated in it. The increase in labour productivity consists precisely in that the share of living labour is reduced while that of past labour is increased, but in such a way that the total quantity of labour incorporated in that commodity declines" (Marx, *Capital*, Vol.1, international Publishers, New York, 1967, pp.260-261). It follows that "The rate of profit does not fall because labour becomes less productive, but because it becomes more productive" (op. cit. 1967, p.240).

It is this contradictory outcome, an increasing output of use values incorporating a decreasing quantity of (surplus) value, that is the ultimate cause of crises: "periodical crises ... arise from the circumstance that now this and now that portion of the labouring population becomes redundant under its old mode of employment" (op. cit, p.264). In other words, ultimately crises are the consequence of labour reducing but productivity increasing technological innovations. Therefore, "the ultimate reason for all real crises [as opposed to financial and speculative crises, G.C.] always remains the poverty and restricted consumption of the masses [due to the expulsion of labour as a consequence of labour decreasing and productivity increasing technologies, G.C.] as opposed to the drive of capitalist production to develop the productive forces [the productivity of labour through those technologies, G.C.] as though the absolute consuming power of society [rather than the poverty and restricted consumption of the masses, G.C.] constituted their limit" (op. cit. p.484). As argued above, this quotation should not be interpreted in an underconsumptionist light, as if it were impossible to realize all the (surplus) value produced. This would then be the ultimate cause of crises. But for Marx there is no such theoretical impossibility.

Faced with increased competition and consequent financial difficulties, some of the laggards introduce the new (or newer) productive technique. They too increase their organic composition of capital and thus their productivity. But they too contribute to the rise of unemployment. A further decrease in the (surplus) value produced follows. The ARP falls further. Lower average profitability plus higher unemployment mean that the downturn has set in.

If the fall in average profitability goes far enough, some firms, among the technological laggards in whatever sector, start going bankrupt. Further unemployment follows. Sales fall due not only to both labourers' and capitalists' reduced purchasing power but also because, due to an uncertain future, the employed labourers increase their hoardings and because productive capitals invest less, i.e. a part of productive capital is kept idle. A further fall in demand and more bankruptcies follow. The downturn has become a crisis. On the one hand, capital as social relations has been destroyed: the relationship between workers and capitalists has been severed. On the other, money capital lies idle. This is matched by unsold commodities. Excess money and commodity capital has been created. *Crises generate both excess capital (in its money and commodity form) and lack of capital (as social relations).*⁸ If crises are ultimately determined by contracted reproduction of value as surplus value per unit of capital invested as expressed by a fall in the ARP, recoveries should be fuelled by an expanded reproduction of (surplus) value also per unit of capital invested as expressed by a rising ARP. But, as we shall see below, this is possible only after sufficient capital (the less productive units) has been destroyed.

The rise in the organic composition of capital following the introduction of labour shedding and productivity increasing technologies is a regular and inevitable factor in the development of capitalism, a factor that acts sometimes openly and sometimes subterraneously. Given that the new technologies replace percentage-wise labourers with means of production and given that only the labourers produce value and surplus value, the ARP falls. If the economy is still in a period of high growth, the labour power liberated by the bankrupt capitals can be absorbed by the stronger capitals that are still expanding the scale of their production. In spite of the decreasing ARP, the rate of capital accumulation is sufficiently strong to ensure enlarged reproduction. The mass of surplus value increases but, under conditions of an increasing organic composition of capital, an increase in the rate of accumulation *decreases* the ARP.

As this movement progresses, i.e. as more and more of the technological laggards leave the scene, unemployment starts surfacing and less and less value and surplus value is produced. This is *destruction of capital as a social relation*, i.e. the severing of the relation between capital and labour.⁹ At this point, the *mass* of value and surplus value produced falls too. This reinforces the fall in the average *rate* of profit, given that it is the low organic composition (low productivity) capitals that usually go bust.¹⁰ The fall in the mass of surplus value produced is further reinforced by the decreasing capital utilization as a conscious means to reduce production. If less means of production are used, less labour power is used and less surplus value is produced. The numerator of the ARP falls but the denominator is unchanged given that the ARP is computed on the whole of the capital available for investment and not only on that actually invested and operating. The capitalists try to hold back this downwards movement by reducing wages but in and of themselves lower wages cannot start a new upwards movement.

We have seen that what ushers in the economic depression is not simply a fall in the ARP but this fall *as a consequence of a decreased production of value and surplus value*. Thus, the course of the cycle is determined not by the ARP for the economy as a whole but by the ARP *for the productive sectors only*. During depressions and crises it becomes increasingly difficult for borrowers to invest in the productive (of surplus value) sphere, given that productive capital itself experiences increasing profitability and thus realization difficulties. Then, this money flows to the financial and speculative sectors where higher profits can be made. But these sectors are unproductive.

Both lower wages and the flight to the financial and speculative sectors are examples of countertendencies. Let us then consider the notions of tendency and countertendencies as applied to the theory of crisis. In Marx's theory, the reduced profitability due to the increase in the organic composition of capital, i.e. the introduction of labour shedding and productivity increasing new technologies, is the tendential movement. The counter-tendencies hold back and retard the manifestation of the tendency. However, the tendency must manifest itself because as the downwards trend proceeds, the effects of the counter-tendencies weaken. This is why, as Marx puts it, the tendency is only "delayed", "checked", "partly paralyzed", "retarded", "not [done] away with ... but [simply] impair[ed] [in] its effect" by the counter-tendencies (Marx, *Capital III*, pp. 226, 232-237). It is in this sense that lower wages are a counter-tendency. As a counter-tendency, they can only "delay", "check", etc. the tendency in the double sense that there are biological and/or socially determined limits to the reduction of the workers' purchasing power so that the more wages are lowered the less easy it becomes to lower them further and thus to increase the ARP.

There are other countertendencies besides lower wages. The one pertinent to this work is capital's flight from the productive sectors, where profitability falls, to the unproductive sectors (the commercial, financial and speculative sectors) where higher rates of profits can be gained. As the production of surplus value decreases due to decreasing employment in the productive sectors, firms start closing down and the working class' purchasing power decreases as well. Some wage goods remain unsold. Equally, the capitalists' purchasing power for means of production decreases

as well. Some investment goods remain unsold. To stimulate the sale of the unsold commodities (mistakenly perceived as the prime cause of crises) and possibly new production, the monetary authorities stimulate credit by increasing the quantity of money. Moreover, capital flows from the productive to these unproductive sectors. This makes possible the artificial inflation of profits in these unproductive sectors. Debt (and speculation) start growing disproportionately compared to the production of value and surplus value incorporated in the commodities (and thus relative to purchasing power). The process snowballs and acquires a dynamism of its own. But this cannot go on indefinitely. Sooner or later debts must be repaid. As unemployment surges, an increasing number of debtors default on their debts. This applies both to the productive and to the financial sector. But it is in the financial and speculative sectors that the crisis erupts at first. The present crisis has manifested itself first in the banking sector. If the value of some banks' assets falls below the value of their liabilities those banks become insolvent with the result that depositors will rush to withdraw their funds. If the run on the banks cannot be stopped, those banks go bankrupt. As long as the phenomenon is limited, the crisis can be contained. The present financial crisis exploded when a few giant banks with a predominant weight in the financial sector saw their equity shrinking and eventually becoming negative. We shall return to this point later.

The basic point is that financial crises are caused by the shrinking productive basis of the economy. A point is thus reached at which there has to be a sudden and massive deflation in the financial and speculative sectors. Even though it looks as if the crisis has been generated in these sectors, the ultimate cause resides in the productive (of surplus value) sphere, i.e. in the shrinking productive basis of the economy and in the attendant falling profit rate *in this sphere*, even though this downwards movement has manifested itself at first in the financial and speculative sectors.¹¹ It is not the case that decades of low wages have led to realization problems and finally to the bursting of the financial bubble (at present the dominant view within the Left). Rather, decades of shrinking production of new value have forced capitalists (1) to lower salaries (something that is mistakenly seen by some as the cause of the crisis) and (2) to shift to highly profitable financial and speculative investments which, however, being based on fictitious capital, could only conceal the true state of the productive basis of the economy (something that is mistakenly seen by others as the cause of crisis). The reduction of both classes' purchasing power *reveals* in a *gradual* way, and the collapse of the financial and speculative sectors *reveals* in a *sudden* and abrupt way, the continuously shrinking productive basis of the economy that had been concealed through increasing levels of debts.

But the crisis creates the conditions for the next recovery. If sufficient capital as social relations has been destroyed, capital can start expanding again. A number of factors make this reversal possible. First, wages are lower and rates of exploitation higher due to labour's weakness following the economic crisis. Second, the price of the means of production is also lower because the crisis has caused a fall in prices, because the new technologies have made possible the production of cheaper means of production, and because some means of production have been taken over by the survivors at a price lower than the remaining value (i.e. net of amortization). Moreover, given the previous low capacity utilization, unutilized means of production can be brought back into production. Third, the survivors have further vantage points, namely they face less competition due to the laggards having left the scene so that they can fill the share of the market left void by the bankrupt competitors and are better equipped to penetrate the new branches of production that have come into being and that initially have a lower organic composition of capital. These factors spur the surviving capital to start enlarged reproduction. This is made possible not only by easily available and cheap labour power willing to accept higher rates of exploitation but also by large quantities of money capital that has been set aside during the crisis. As employment starts increasing, new purchasing power is created and thus labour's absorption capacity rises. The mass of surplus value grows together with a higher rate of surplus value. Capital absorption capacity rises as well. The realization difficulties decrease progressively and eventually are minimized. Recovery and boom follow.

These as well as other factors spur the capitals that have weathered the storm to resume production. However, as soon as new labour shedding and productivity increasing technologies are introduced in the ascending phase of the cycle, the conditions are re-created for a new phase of depression and crises. As long as the mass of new value grows to such an extent that the surviving capitals absorb the labour power 'liberated' by the weakest capitals that have gone bankrupt, the decreasing rate of profit and the possible closure of the less efficient capitals does not affect economic growth, even if the ARP might decrease due to the higher organic composition of capital of the surviving firms. But when the new technologies start provoking generalized bankruptcies and spreading unemployment, the mass of profits starts falling as well. A lower rate of profit as a consequence of a lower mass of profit ushers in a new period of depression and crisis.

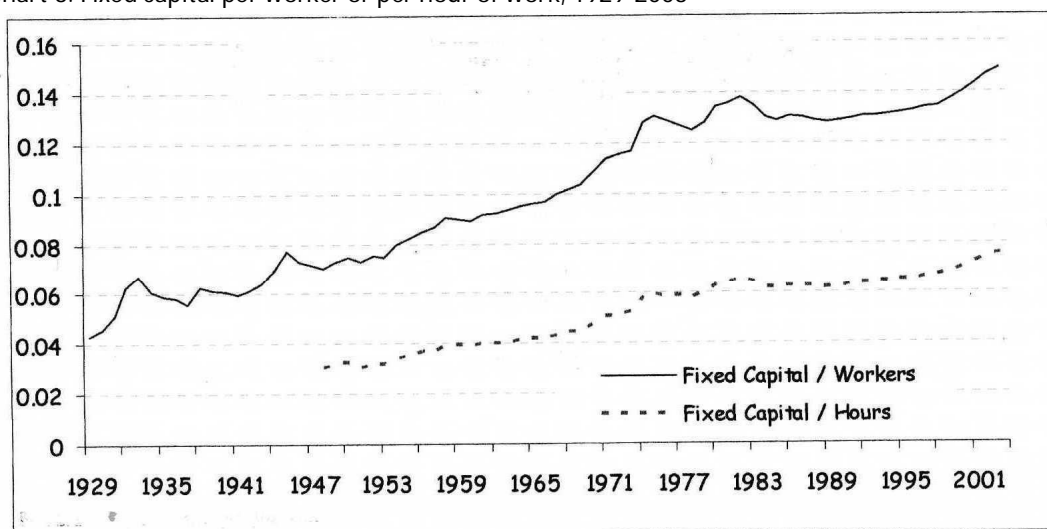
The features just sketched can be found in all the major crises that have battered the world economy since capitalism has become the dominant socio-economic system. Even though each crisis has its own forms of appearance and consequences,¹² it is important to stress the common characteristics because it is they that reveal the unchanged nature and working of the capitalist system. This holds also for the great 1929-1933 depression.¹³

The Wall Street crash of 1929 was preceded by a recession in the real economy, a feature common to other leading capitalist countries Germany, Belgium and Britain. In the US, the 'Big One' was preceded by a period of intense speculation, huge expansion of credit, enormous concentration of wealth in a tiny fraction of the population and the destruction of the trade unions. The similarities with the present crisis are obvious. At the same time, the US average rate of profit had been falling by about 40% between the 1880s and the early 1920s while the organic composition of capital had been rising by about 20%. Profitability recovered briefly through the 1920s but only due to an increased rate of exploitation. This does not mean that investments declined everywhere. In 1928 and 1929 output increased three times faster than consumption, partly due to the completion of investments started in the previous period and their coming into operation at the onset of the crisis (Ford's River Rouge auto plant was completed in 1928) and partly due to investments in new sectors that seemed to offer higher profitability (the radio set sector). Nevertheless investments in the productive sphere as a whole kept declining. The upsurge in luxury consumption was utterly insufficient to fill the gap between production and consumption basically because capital needs to capitalize profits rather than consume them unproductively. Capital flowed massively into the unproductive sectors, basically the sales efforts (by the end of the 1920s these expenditures had grown to two thirds of total surplus value) and the financial and speculative sector (that caused a succession of speculative booms and great increases in the price of stocks and real estate). To counter the falling purchasing power, the upsurge in the sales effort had to be supported by growing debt. When the debt could not be serviced any longer, the speculative bubble burst. Banks had to resize their balance sheets. Successive waves of bank failures followed. Developments in Germany followed basically the same pattern while Britain showed specific characteristics that, however, fit well in this scheme.

It is instructive to review briefly also the Japanese crisis of the 1990s. When Japan entered the financial crisis in the 1990s it had had a period, from the 1950s to the late 1980s, of rapidly rising ratio of capital to workers. In the 1980s this ratio grew four times as fast as that in the US. Consequently the profit rate fell from 36.2% in the 1960s to 14.5% in the 1990s. At the same time, real wages were low (exploitation high) something that limited the internal market's absorption. Within the new international setting, the logical thing to do was to find outlets in the export markets. But in the late 1980s the long term fall in the profit rate made itself finally felt. The opportunities for domestic investments shrank and export channels came under pressure due to the international economic depression. To encourage both investments and consumption, the government resorted to massive injections of liquidity by encouraging the banks to vastly increase their lending. This liquidity found its way in speculation. Bank loans fuelled steadily increasing prices both in the real estate market and in the stock exchange. But when prices collapsed in these markets, banks got into troubles. The use of public money in 1995 to rescue the bank system did not have the desired effect. Neither did it help to resort to Keynesian policies through massive investments in the public sector. The relatively very large role assumed by the state (state expenditures amounted to 8% of GDP and the proportion of the labour force employed by the state to 10% of the total) avoided the collapse of the system but did not rescue it from its malaise.

Let us now return to the present. Similarly to the two crises dealt with above, the present financial crisis finds its prime cause in the shrinking production of surplus value as the other side of the coin of increased efficiency. Chart 3 shows the growth of fixed capital per worker, which corresponds to Marx's organic composition of capital

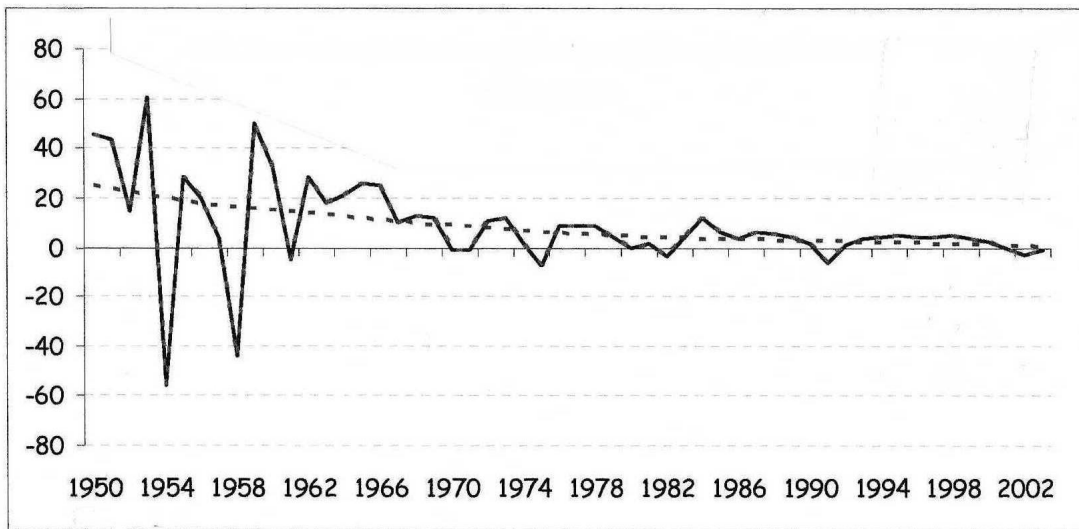
Chart 3. Fixed capital per worker or per hour of work, 1929-2003



Source: Giussani (2005) unpublished paper

and chart 4 shows that this phenomenon is coupled to the replacement of labour by capital. More specifically, each incremental unit of fixed capital generates a lower percentage increase in employment and even a negative absolute increase (if the percentage increase is negative). In other words, more and more constant capital creates less and less jobs.¹⁴

Chart 4. Us incremental labour/fixed capita ratio



Source: Giussani (2005) unpublished paper

These charts are telling. However, they are based on official data concerning both the productive and the unproductive sectors. We get an idea of the difference between the official data and more realistic data from table 4.

Table 4. US employment percentage share by sector, 1979-2005

Industry sector	1979	1989	2000	2005
Goods producing	27.8%	22.3%	18.7%	16.6%
- Mining	1.1%	0.7%	0.5%	0.5%
- Construction	5.1%	4.9%	5.2%	5.5%
- Manufacturing	21.6%	16.7%	13.1%	10.7%
• Durable	13.6%	10.2%	8.3%	6.7%
• nondurable	8.0%	6.5%	4.8%	4.0%
Services producing	72.2%	77.7%	81.3%	83.4%
- trans. utilities	4.0	3.8	3.8	3.7
- wholesale trade	5.0	4.9	4.7	4.3
- retail sale	11.3	12.1	11.6	11.4
- information	2.6	2.4	2.8	2.3
- fin., ins., real estate	5.4	6.1	5.8	6.1
- services	26.0	31.8	37.0	39.3
Total	100.0	100.0	100.0	100.0

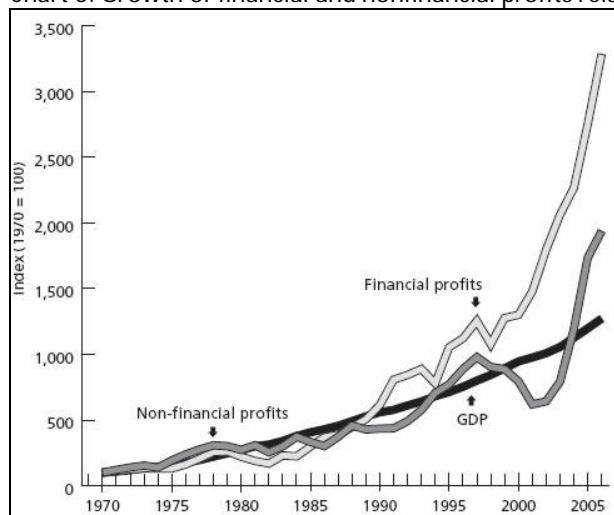
Source: State of Working America, 2006-7, table 3.27

These data are eloquent. If the goods producing sector is identified with the productive sector in Marxian terms, the productive basis of the US economy falls from 27.8% in 1979 to 16.6% in 2005 while the unproductive sector rises from 72.2% to 83.4% in the same period, i.e. the productive sector falls from 38.5% of the unproductive sector to 19.9%. Thus, the decline in the US economy's capacity to produce value and surplus value goes back to the 1970s. It is at that time that industrial capital begins to shift to financial capital.¹⁵ The US are by no means an exception: "Some 31 million manufacturing jobs were eliminated between 1995 and 2002 in the world's 20 largest economies. Manufacturing employment declined during a period when global industrial production rose by more than 30%." (Gerry Gold and Paul Feldman, *A House of Cards*, Lupus Books, 2007, p. 24).

We have now all the empirical data supporting Marx's thesis. Chart 3 shows the increase in the organic composition of capital accompanied productivity increases (table 3) and by capital's decreasing absorption capacity for labour (chart 4), while table 4 shows the decreasing share of employment in the productive sectors, i.e. the decreasing production

of new value. These data fully support Marx's thesis as to the cause of the long term fall in the ARP as shown in chart 2 and thus Marx's theory of crises. This highlights the basic contradiction leading to economic crises and thus to falling wages and labour's purchasing power as an attempt to halt the fall in profitability. As for the rise in the profit rate starting in the 1980s (see chart 2) in spite of the rising organic composition of capital (see chart 3), this is probably due to the liberalisation of financial and capital markets and to the great speculative boom starting around the beginning of the 1980s and thus to a much greater rise of profits in the financial than in the non-financial sector, as shown in chart 5 below

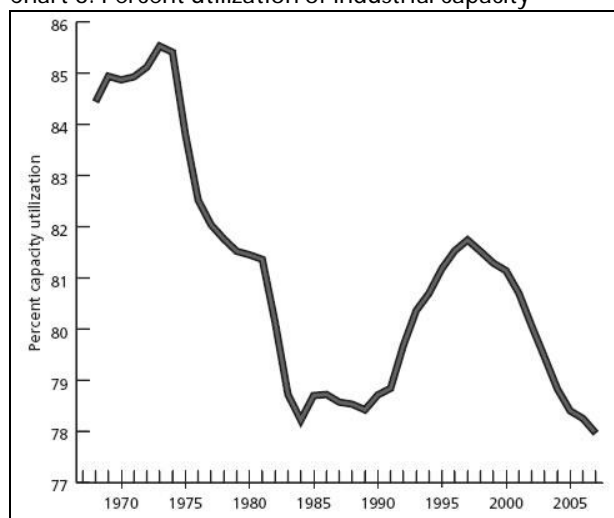
Chart 5. Growth of financial and nonfinancial profits relative to GDP (1970 = 100)



Source: John Bellamy Foster and Fred Magdoff, *Financial Implosion and Stagnation, Back To The Real Economy*, <http://monthlyreview.org/081201foster-magdoff.php#fn33b>

This chart shows a dramatic rise in non-financial profits, a greater rise than in the non-financial profits. This can be explained by the increasing investments by non-financial corporations in the financial sector (by buying among other things their own shares and those of other companies). The line indicating profits in the non-financial sector is thus a mixture of financial and non-financial profits. But this indicates a rise in indebtedness rather than in the production of surplus value. As mentioned above, the downwards pressure on the ARP is augmented by the decreasing capacity utilization. This is graphically illustrated by chart 6 below

Chart 6. Percent utilization of industrial capacity



Source: John Bellamy Foster and Fred Magdoff, *Financial Implosion and Stagnation, Back To The Real Economy*, <http://monthlyreview.org/081201foster-magdoff.php#fn33b>

The long term decline in the ARP has provoked a series of financial crises, the last one being the present one. This crisis exploded in 2007. In the previous years (2003-2005) the government had pursued an easy monetary policy to limit the economic damage following the technological bubble of 1990-1991.¹⁶ Also, mortgage standards had been severely curtailed to allow purchases by people who otherwise would have been seen as unreliable borrowers. Hundred of thousands of US home owners had been lured into buying a home even if they lacked the financial means

(these were the so-called subprime mortgages). This is why the housing prices skyrocketed even if on the one hand wages and more generally income kept decreasing and on the other the number of new houses built kept increasing. This price rise generated a speculative bubble. This was a sure recipe for a future mortgage crisis. But the danger did not come only from subprime mortgages. A price rise for even a relatively low number of houses is sufficient to push upwards the estimated value of all other (unsold) houses and thus the borrowing capacity of those home owners. This increased the creditworthiness of those home owners. It is on this basis that a second mortgage could be obtained on the basis of highly overestimated collaterals. This extra credit was used by the home owners to support their declining purchasing power but at the same time, being based on overvalued creditworthiness, it further weakened the possibility of the home owners to repay their mortgages. In addition million of home owners profited from lower interest rates to refinance their mortgages. Many borrowers were not told that payments were fixed for two years and that they would both become higher after that period and dependent on the level of Fed interest rates, which also rose substantially starting from 2004. Higher interest rates plus increasing unemployment sparked a wave of defaults and repossessions. Millions lost their houses. This in its turn had a dramatic effect on house prices, reversing the housing boom of the previous years. The effects spilled over to the broader economy with the building industry expected (in November 2007) to cut its output by half.

The first signs of the coming crisis appeared in 2006 when defaults started to increase. Nevertheless, lending proceeded at a sustained pace. Banks had invented financial instruments (basically, contracts) that allowed them to shift the insolvency risks to other institutional investors and thus to insure themselves against those risks. We shall see further down a couple of example of what these instruments were and why they failed. In 2007, more and more of those loan holders became insolvent. Foreclosures followed. The crisis exploded in June 2007 when two hedge funds owned by one of the US major banks, Bear Stearns, which had invested heavily in the subprime market, collapsed. More and more banks and other institutional investors found out that they had in their portfolios derivatives based on insolvent loans.¹⁷ This further deflated the housing prices. In early 2009 the situation was sketched as follows by the Congressional Research Services and reported by New York Times of 12 February 2009 (available at <http://topics.blogs.nytimes.com/2009/02/12/the-us-financial-crisis-the-global-dimension-with-implications-for-us-policy/>)

Some of the largest and most venerable banks, investment houses, and insurance companies have either declared bankruptcy or have had to be rescued financially. In October 2008, credit flows froze, lender confidence dropped, and one after another the economies of countries around the world dipped into recession. The crisis exposed fundamental weaknesses in financial systems worldwide, and it continues despite coordinated easing of monetary policy by governments, trillions of dollars in intervention by governments, and several support packages by the International Monetary Fund.

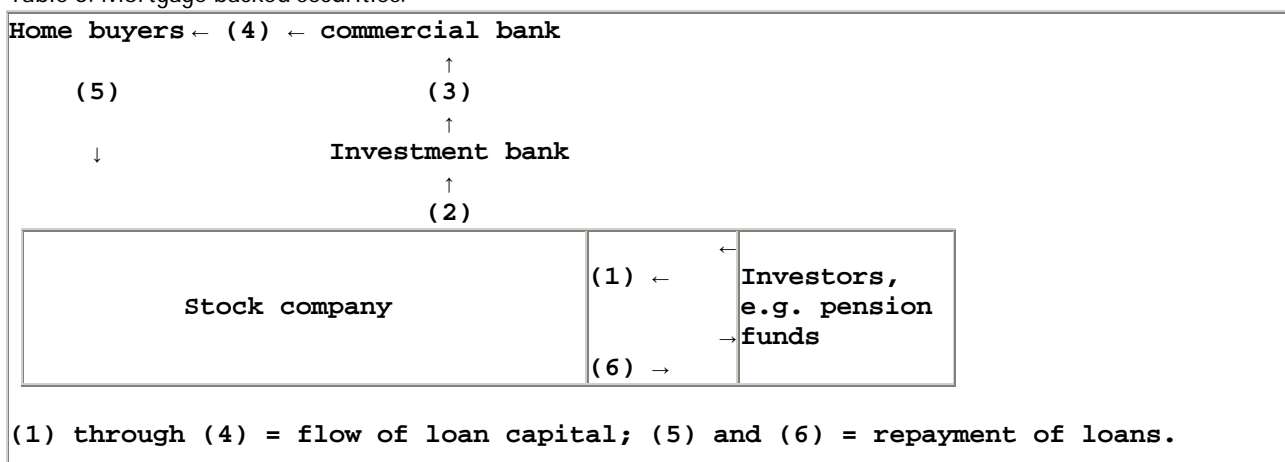
Some of the biggest banks and insurance companies had to be rescued by the government through infusions of liquidity. But this did not stop the financial crisis that in the meantime had extended itself to prime mortgages, due to the generalized fall in housing prices as a consequence of foreclosures, and to the real economy like the three biggest auto makers, due to the increasing difficulty firms had to finance their operations and to refinance their debts. Let us then see how the financial measures needed by the system in a futile attempt to at least postpone the crisis only contributed to inflating the speculative bubble and thus to make the crisis worse when the bubble burst.

To stimulate demand in spite of decreasing wages, the monetary authorities increased the quantity of money. This is basically printing money with which the FED purchases treasury bills from the public. The sellers of the treasury bills partly spent it and partly deposited it in their bank accounts. The banks granted credit for a multiple of those deposits. As a consequence, interest rates fell. But more importantly, the banks started to use the inter-bank deposits, whose function had been clearance on a daily base, for speculative purposes, i.e. to fund speculative activities. Also, credit was stimulated by financial deregulation which effectively allowed banks to create credit at a multiple whatsoever of what they held in reserve. On the other hand, the financial system (banks) needed to find new ways to invest that extra supply of money and to grant credit in a situation in which incomes were falling and the creditworthiness of the borrowers as well as the possibilities to find outlets for investments were decreasing. The way to stimulate demand this time was found in the mortgage market and in the securitization of mortgage loans. It is here that the subprime mortgages and crisis come in. To see this, three notions must be briefly highlighted, the mortgage backed securities, the collateralized debt obligations, and the credit default swaps.

Suppose a commercial bank grants a loan to a borrower for the purchase of a house. Traditionally, the commercial bank could use the depositors' money to grant a loan that would be paid back by the debtors. They were the bearers of the risk in case of the borrower's default. With the ballooning of the speculative sector, banks have resorted to a different strategy in order to shift the risk of default to others, to the general public. A commonly used practice is as follows. The commercial bank (or a broker) bundles together many mortgages and sells them (i.e. it sells the right to collect principal and interests) to another bank, an investment bank. The commercial bank renounces the right to collect the mortgages' principals and interest payments from the home buyers but acquires the right to receive the

capital it needs from the investment bank. The commercial bank accepts a discount on its loan because it can collect now rather than in the future and at the same time it avoids the risk of possible defaults on mortgage payments. The commercial bank, thus loans capital which is not its own. The investment bank must provide the capital for the commercial bank but it does not have it. To find that capital, the investment bank creates a corporation to which it transfers those loans in exchange for the capital it needs to pay the commercial bank. To get that capital, this corporation issues bonds which the investment bank sells to the public, i.e. private individuals but also hedge funds, pension funds, etc. In this way, the company gathers the money that it transfers to the investment bank. This, in its turn, uses that capital to pay the commercial bank that in its turn loans that money to the home purchasers. The bond holders provide indirectly the capital for the home loans and the home owners repay the loans to the stock company that in turn uses it to pay principal and interest to the bond holders. If the demand for those stocks is sufficiently high, their price exceeds the value of those assets (the future stream of payments for principals and interests) and the bond issuer makes a profit. These bonds are *mortgage backed securities*, i.e. the loans have been securitized. They are one of the many forms of *derivatives*, i.e. contracts that derive their value from an underlying asset (the mortgaged houses, in this example). Their advantage for the purchasers of these bonds is that they, in theory, can easily be sold (or, at least, so it is believed) if, for example, the house market gets into trouble. But in case of default, if the stream of payments to the company that has issued those bonds stops, the bond holders' demand for credit restitution cannot be met by that company. If the company goes bust, the stock holders lose their capital.

Table 5. Mortgage backed securities.



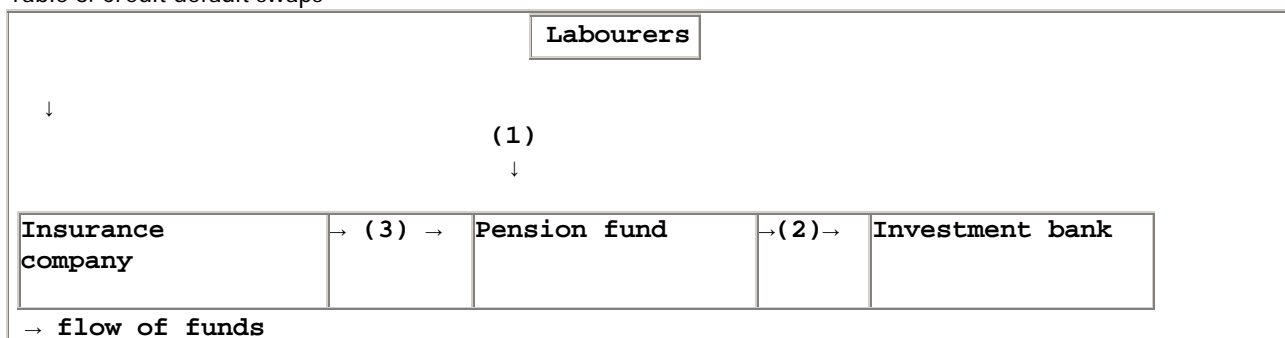
The danger inherent in this example of 'financial engineering' was that the investment bank, given that it collects substantial fees on loan issuance and runs no risk in case of homeowners' default, underplayed the solvency of the loan takers. The credit criteria became looser and looser till when a borrower did not even need to have a job or a stable income. This process was further facilitated by the failure of credit rating agencies to properly rate the solvency of the loan takers. The drive to grant even more mortgages was reinforced by transforming those mortgage backed securities into *collateralized debt obligations* (CDOs). This means that the bonds are divided by the issuer (the corporation) into three different tranches. The investors looking for a less risky investment get a lower interest but are the last to lose in case of default. The opposite for those who seek higher returns and are willing to accept a higher risk. The third tranche lies in the middle of the other two tranches. In this way, more funds could be collected than if only one type of investors had been targeted.¹⁸ To hide the insolvency of a good deal of the CDOs from the public eye, banks repackaged different CDOs with different ratings into bonds whose degree of riskiness was unknown.¹⁹

Those CDOs found their way into the banking system. Banks have now large quantities of these financial instruments as assets on their balance sheets. Once it became known that many of these CDOs were based on worthless mortgage backed securities (due to defaults in the housing market), the market price of these CDO collapsed and the market for them dried up. The banks knew that their assets did not reflect their financial solidity because the CDOs on their balance sheets were grossly overestimated. Given the banking system overexposure to CDOs, failure to realize the CDOs held by a bank could have meant bankruptcy. This was a very real danger. Given that banks had debts to each other, a given bank's failure implied the impossibility to renew its loans to other banks. They too would have faced the threat of bankruptcy. This would have ignited a domino effect. Banks became scared and less willing to renew their reciprocal debts. Every bank wanted to have as much as cash possible to offset the negative effect of the writing off of the CDOs they held as assets. Each bank wanted to keep liquidity for itself and thus was unwilling to renew the credit it had granted to other banks. This meant that they had to start selling their assets. Since the market for the CDOs had dried up, they had to sell their better assets. When this became insufficient, some of those banks were faced by the danger of insolvency. The depositors became concerned and began asking their money back. But this was difficult if

not impossible not only because of the illiquidity of the assets but also because credit had been overextended thus increasing the danger of a run on the banks. This process spilled over to the real economy. Banks became unwilling to grant loans also to non-financial companies. These companies too started to have financial difficulties and this resulted into a generalize crisis especially in those companies and branches which were highly leveraged. While the size of this domino effect has been contained by central banks' intervention and injection of liquidity into the ailing financial institutions, massive writing off of the CDOs in the ailing institutions' balance sheets has been necessary. The banking sector is now facing huge losses as many of the mortgage bonds backed by subprime mortgages have fallen in value.

The third feature specific to the present speculative bubble is the *credit default swaps* (CDS). Suppose a pension fund has money to invest. By statute, it can only invest in very safe concerns. At the same time, the pension fund wants high interest rates on its investments. But safe investments usually pay low interest rates. For example, suppose that pension fund would like to invest in (buy the bonds of) an investment bank. But suppose that the investment bank's rating by a rating agency is less than that required by the pension fund's statute. Given this relatively negative rating, the pension fund cannot buy the bonds of the investment bank. It is here that CDS come in. The pension fund can take out an insurance on its credit (the purchase of bonds from a poorly rated company) with an insurance agency specialized on debt default. A necessary condition is that this insurance company has been given a high rating by the rating agency. Then, the pension fund pays a fee to the insurance agency and this latter pays the pension fund if the investment bank defaults on its debt. In this way the investment fund's bonds have been upgraded because they are insured by a highly rated insurance company. Or so it seems.

Table 6. Credit default swaps



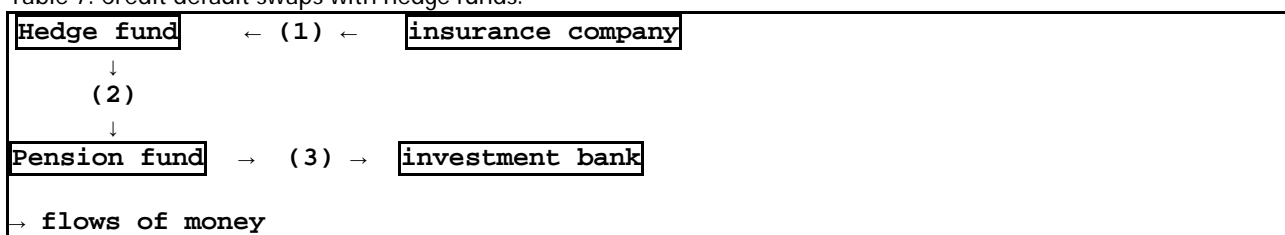
The problem is that the insurance company, just because it has got a very good rating from the rating agency, is not required to set aside the money it would need if the investment bank were to default. It might keep enough capital aside according to some model that computes the probability that a debtor defaults but does not have to put aside the whole or even a reasonable part of the capital ensured. Moreover, the insurance company ensures many other institutions like that pension fund. As long as it does not get downgraded by the rating agency, it can go on insuring investors that buy bonds from poorly rated loan issuers without any limit. The reason, of course, is that it can keep collecting interests on the debts it ensures. But the insurance company itself is not ensured against a financial collapse. If the bubble bursts and the borrowers default, the insurance company cannot cover a part or the whole of the lenders' (the pension fund's) credits and the lenders lose their capital. If the lender has not invested its own capital (as in the case of the pension fund which collect the labourers' pensions) it is those who have provided that capital that suffer the loss. It is in this way that the labourers' pensions have been (sometimes drastically) reduced.²⁰

The problem is further exacerbated because the insurance company, due to the disbursement of capital to the creditors (e.g. the pension fund in the example above) might become undercapitalized and thus might lose its status as a highly rated company. Then, all those lenders (e.g. other pension funds) that relied on this insurance company to lend to low rated borrowers (the investment bank in the example above) will have to unwind their contracts. This cannot but mean added financial difficulties for the borrowers. The bankruptcy of one borrower has thus a domino effect. It causes financial difficulties not only for the lender (e.g. the pension fund) and the loss of capital for those who have provided capital to the lender (the labourers), but also for all other lenders that had relied on the high rating of the insurance company and thus for the borrowers that had relied on the lenders' loans.

But the ingenuity of the 'financial architects' goes even further. Consider again the example above. The insurance company ensures the pension fund against the risk of the investment bank's default because its assessment is that the latter will not default. A hedge fund, on the other hand, might have a different view and consider the probabilities of default much higher. The hedge fund buys the CDS. Now the pension fund is not ensured by the insurance company but by the hedge fund and the hedge fund buys an insurance from the insurance company in case it has to pay the pension fund. In case of default by the borrower (the investment bank) the hedge fund pays out the pension fund and

is paid by the insurance company. The hedge fund bets on the borrowers' default. It can thus insure the lender for the amount it has lent the borrower but buy an insurance from the insurance company for a larger amount. If the bet turns out to have been accurate, the hedge fund pockets the difference. But this might cause the downgrading of the insurance company with the ramification just sketched.

Table 7. Credit default swaps with hedge funds.



In table 7, (3) is the pension fund's investment in the commercial bank and (1) and (2) are the flow of money to the pension fund in case of the investment bank's default. In case of default, the hedge fund pays the pension fund and is itself paid by the insurance company.

In the years preceding the burst of the financial bubble, the financial and speculative sectors have mushroomed into an extremely large and amazingly complex byzantine construction of derivatives whose underlying 'assets' have been almost everything under the sun because almost everything lends itself to speculation. This process has been made technically possible by new financial techniques like the one discussed above, the so-called financial engineering, which followed financial deregulation. Speculative debt and transactions have been blown to levels out of proportion with the productive basis and this has made impossible for debts to be paid back. This is a virtual growth, not a real one, based on ruthless speculation and fraud. The inflation of the bubble is accelerated by the financial institutions' corrupt and deceitful lending and accounting practices and a hidden system of account. The true amount of the bubble has been hidden by the banks' practice of packaging the subprime mortgages with other forms of more reliable credit and selling these financial 'products' to investors as highly rated bonds. But there is also an international dimension. As more low income people obtained subprime mortgages, an increasing volume of these assets (in fact, insolvent debts) has been repackaged with debts of a better quality, rated as high quality financial 'products', and sold globally.²¹ In this way, large amounts of worthless credit were sold on worldwide markets. As a consequence, the financial crisis extended from the US to other countries which both had bought US 'poisoned' financial instruments and themselves had engaged in the same financial practices.²² But aside from this, the financial crisis in the West has deep effects on the real economies in other countries. For example, the US negative balance of trade with China and other Asian countries expanded those countries' foreign reserves (in dollars) with which they bought US Treasury bills. The money flowed back to US financial institutions that loaned it to consumers and homebuyers. With the implosion of the US credit market, those economies' exports feel the crunch and are resized.

To sum up, both theoretical and empirical investigation has provided substantiation for the thesis that the crises' ultimate cause is the tendential fall in the average rate of profit. Wage movements can explain neither the crisis nor the cycle. The explanation is to be found in Marx, not in Keynes. But, internal critique aside, one should be aware of each of the two views' political and ideological ramifications. If lower wages determine crises, higher wages are the way out of crises. And if higher wages determine crises, lower wages are the way out of crises. Crises are at least in principle *avoidable*. If they are not avoided, it is because 'mistakes' have been made in wage, fiscal, monetary, etc. policies or because labour has not been able to impose better work and living conditions on capital. The reformist matrix of this redistributive view is clear: if the system is reformable, a different system is not needed. However, if crises are a constant feature of capitalism, we need a theory that theorizes their unavoidability, their necessity. This is exactly what the Marxian explanation does by focusing on the decreased production of (surplus) value due to technological innovations and concomitant rising value composition of capital as the ultimate cause of crises. Given that this is a constant of capitalism, the necessary, constant and unavoidable way capitals compete with each other, *crises are unavoidable*. Stated differently, in the former case (basically, a Keynesian perspective), if crises can be avoided, the system does not tend objectively and necessarily towards crises. The possibility is created to conceptualize capitalism as a system being or tending towards growth and equilibrium (even if at a level lower than full employment). In the latter (Marx's) case, the system tends towards crises through the economic cycle. In the former case, the system is inherently rational (it tends towards equilibrium and growth) and Labour's fight to supersede it is therefore irrational. Labour is deprived of the objective, rational base for its fight. This fight becomes a pure act of volunteerism. In the latter case, the system is irrational and Labour's fight to abolish it is then both rational and the conscious expression of an objective movement, the tendency the system has to supersede itself. The choice of a crisis theory rather than another is an individual one. But, given the different class content of the different theories, this choice places the individual theorist on one side rather than another in the struggle against capital.

1 Robin Blackburn, 2008, *The Subprime Crisis*, *New Left review*, March-April, p.72, Blackburn only mentions in passing Baran and Sweezy's theory of overproduction in footnote 44 without elaborating.

2 For J. Robinson "the maldistribution of income is quite as deeply embedded in the capitalist system as Marx believed the tendency to falling profits to be, and cannot be eliminated without drastic changes in the system" (1962, p.72). If by maldistribution Robinson means simply the distribution between wages and profits, this is indeed a permanent feature of capitalism. But the point is that this permanent feature cannot be held to be the origin of crises. The same holds if by maldistribution it is meant too low levels of wages and realization difficulties for the above mentioned reasons.

3 For the Monthly Review school the long-term wage reduction is also a consequence rather than the cause of depression. "Stagnation in the 1970s led capital to launch an accelerated class war against workers to raise profits by pushing labor costs down. The result was decades of increasing inequality". However, stagnation is seen as "the *normal state* of the monopoly-capitalist economy, barring special historical factors" and the post-WWII stagnation is the manifestation of the petering out of the temporary historical factors that had caused the prosperity of the 1950'and 1960'. The authors, following the works of Paul Baran, Paul Sweezy, and Harry Magdoff, identify these historical factors "as: (1) the buildup of consumer savings during the war; (2) a second great wave of automobilization in the United States (including the expansion of the glass, steel, and rubber industries, the construction of the interstate highway system, and the development of suburbia); (3) the rebuilding of the European and the Japanese economies devastated by the war; (4) the Cold War arms race (and two regional wars in Asia); (5) the growth of the sales effort marked by the rise of Madison Avenue; (6) the expansion of FIRE (finance, insurance, and real estate); and (7) the preeminence of the dollar as the hegemonic currency".

4 This is the essence of the neo-liberalist view of crises as well as of the profit squeeze Marxist view. This latter was in vogue in the 1970's in the US but is undergoing a revival. It saw the cause of the decline in the US rate of profit in greater workers' power and higher wages and thus lower profits. More recently, Peter Gowan wishes to break "with the orthodoxy that it was 'real economy' actors that caused the crisis" (2009, p. 24) and argues that the changes in the financial system that caused the speculative bubble were, in their turn, caused by the need to reduce the share of labour of national income. Yet he neither specifies what "the orthodoxy" is nor argues why it should be abandoned.

5 Anwar Shaikh's critique of the profit squeeze school is that it fails to consider the difference between surplus value and "the bourgeois category of profit (net operating income)". See: An introduction to the history of crises theories, p. 239, available at <http://www.countdownnet.info/>. This critique is insufficient in that it does not provide a theoretical, internal critique.

6 Sometimes, the money profits computed in this way are confusingly called surplus value. But these profits are not the monetary expression of Marx's surplus value.

7 Within sectors there is a tendential equalization of prices (but no equalization of profit rates), across sectors there is a tendential equalization of the profit rates (but not of prices). The ARP is a statistical construct; there is no actual formation of the ARP, only a tendency which is nevertheless an element of reality. This means that the capitalists do not invest according to an average profitability. Rather, they seek the maximum feasible rate of profit. But it is through this individual search for the maximum rate of profit that the tendency towards an average arises.

8 Very generally speaking, in the downturn phase supply increases due to technological innovations but demand and the ARP fall. In the crisis, supply too decreases, due to closures and bankruptcies.

9 In a recent paper A. Kliman submits that by destruction of capital Marx "meant ... not only the destruction of physical capital assets, but also, and especially, of the value of capital assets ... debts go unpaid asset prices fall, and other prices may also fall, so the value of physical as well as financial capital assets is destroyed". These factors become the condition for the next recovery. See Kliman, "The Destruction of Capital" and the Current Economic Crisis, unpublished paper, January 15, 2009, available at <http://akliman.squarespace.com/crisis-intervention/>. But unpaid debts are a loss for the creditors and a gain for the debtors. There is no destruction of value, only a transfer of value from the creditor to the debtor. Similarly for falling prices.

10 According to many commentators, the weakest capitals stop their operations when their rate of profit becomes too low for them to justify production, for example when their profit rate falls below the rate of interest they can gain on treasury bills. While these factors and personal and psychological considerations might play a role, their ceasing operations is not so much a matter of choice but one of choice-less necessity. The average rate of profit is an average of the high rate of profits of the innovators and of the low rates of profit of the laggards. It moves downwards because the innovators realize higher profits that is more than offset by the rates of profit of the laggards, i.e. at the expense of

the laggards. If the average rate of profit moves downwards, some laggards will be forced out of production because their profits turn into losses.

11 A similar conclusion is reached by Bellamy Foster and Magdoff but within a different perspective, the stagnationist one: since financialization can be viewed as the response of capital to the stagnation tendency in the real economy, a crisis of financialization inevitably means a resurfacing of the underlying stagnation endemic to the advanced capitalist economy. John Bellamy Foster and Fred Magdoff, *Financial Implosion and Stagnation, Back To The Real Economy*, <http://monthlyreview.org/081201foster-magdoff.php#fn33b>

12 Perhaps the most momentous consequence of the present one is, a David Laibman stresses, the re-proletarianization of the US labourer: "The crisis of homelessness in the U. S. working class is precisely the assertion of a central capitalist imperative: reproduction of the proletarian status of workers ultimately requires their propertylessness" ([The Onset of the Great Depression II: Conceptualizing the Crisis](#)). Strictly speaking, proletarianization refers to the expropriation of the means of production. However, Laibman makes an important point here. Homelessness, in the literal sense, i.e. not as lack of home property but as lack of a home, is a powerful means to further weaken labour. This process has gone further in the US than in the European countries.

13 The following two paragraphs rely heavily on Chris Harman 2009, *The Slump of the 1930s and the crisis today*, *International Socialism*, no.121, pp. 21-48 to which the reader is referred for further details.

14 In the UK "the number of economic inactive rose from around 1 per cent in 1970 to figures lying between 10 and 20 per cent, depending on the years involved." Hillel Ticktin, *Critique* no. 46, http://www.metamute.org/en/content/notes_on_the_last_few_months#sdfootnote5sym. However, Ticktin seems to think that the cause of this has been a "deliberate shift in order to contain the working class, who were demanding more control over production, higher wages and better conditions".

15 These data are only indicative. For example, given that under certain conditions (see G.Carchedi, 2005, *On the Production of Knowledge, Research in Political Economy*, Vo. 22, pp. 267-304) the production of knowledge can be productive of surplus value, the category 'information' could be added to the productive sectors. Or, inasmuch as the firms in the productive sector, say, advertise their own products they perform unproductive labour. Vice versa, inasmuch as the firms in the unproductive sphere hire labourers for the maintenance of buildings, computers, etc., they perform productive labour.

16 This might be one of the immediate causes of the present crisis (in the housing sector) but it is certainly not its ultimate cause. Lower interest rates might be needed to stimulate demand but demand stimulation was in its turn needed due to the long term profitability crisis of the US economy.

17 For the notion of derivatives, see below

18 The behaviour of the loan issuer, who has only to gain and nothing to lose by issuing loans to potentially insolvent mortgage takers, has been called a 'moral hazard'. But, aside from whether this behaviour is moral or immoral (it depends on the class determined standpoint) the question is that this behaviour is determined in general by the need to make profits and in this particular case by the extra pressure on capital to find those high levels of profitability that are no more available in the real economy.

19 "The products bundled in cdos, however, came from hundreds of thousands of unidentifiable sources, whose credit-worthiness and cashflow capacity was not known; they were sold 'over the counter', without any secondary market to determine prices, far less an organized market to minimize counterparty risk. In short, they were at best extremely risky because more or less totally opaque to those who bought them. At worst they proved a scam, so that within a few months of late 2007 the supposedly super-safe super-senior debt tranches within such cdos were being downgraded to junk status". Peter Gowan, *Crisis in the Heartland*, *New Left review*, 2009, No. 55, Jan-Feb. pp. 5-29, p.15

20 "Also suffering huge losses are the bondholders, such as pension funds, who bought [indirectly, G.C] sub-prime mortgage bonds. These have fallen sharply in value in the last few months, and are now worth between 20% and 40% of their original value for most asset classes, even those considered safe by the ratings agencies". BBC, *The downturn in facts and figures*, 21 November 2007, available at <http://news.bbc.co.uk/2/hi/business/7073131.stm>

21 As A. Pagliarone reports, the mortgage backed securities are sold also to foreign investors, mainly to the central banks of Japan, China and the UK. *Mad Max Economy*, Sedizioni, 2008, p.79.

22 As of November 2008, the world financial firms had lost 1,000 billion dollars. Vladimiro Giacché, *Scene da un patrimonio ... che non c'è più: banche e non solo*, *La Contraddizione*, ottobre-dicembre 2008, pp.46-55, p.46. The same author reports that the ratio between world debt and world GNP increased from 130% in 1980 to 350% in 2007, an all times maximum (p.48).