

**Roots of the Current Economic Crisis:  
The Falling-Rate-of-Profit Tendency,  
Insufficient Destruction of Capital, and Bubbles**

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## **Roots of the Current Economic Crisis: The Falling-Rate-of-Profit Tendency, Insufficient Destruction of Capital, and Bubbles**

[The law of the tendential fall in the rate of profit] is in every respect the most important law of modern political economy, and the most essential for understanding the most difficult relations. It is the most important law from the historical standpoint. –Marx, 1857-58

[T]he most important law of political economy ... is that the *rate of profit has a tendency to fall with the progress of capitalist production*. –Marx, 1861-63, emphasis in original

[T]his law is ... a mystery whose solution has been the goal of all political economy since Adam Smith. –Marx, 1894.<sup>1</sup>

### **I. Introduction**

This paper argues and presents empirical evidence suggesting that the current economic crisis is rooted in the law of the tendential fall in the rate of profit (LTFRP) put forward by Marx. It begins by discussing the contrary view of some prominent Marxist economists, that “the” rate of profit has recovered substantially since reaching a trough in the early 1980s. On the basis of this supposed fact, they dismiss the notion that the current crisis is rooted in a tendency of the rate of profit to fall, and regard it, instead, as a result of *distinct and separable* financial-market disturbances.

I argue that this view suffers from two critical flaws. First, its proponents fail to distinguish trends from cyclical variations; the claim that profitability has recovered largely stems from the fact that they compare a cyclical trough with a cyclical peak when assessing the trend in the rate of profit. Second, their rates of profit are based on the replacement cost (or “current cost”) of capital goods, and therefore are not rates of

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<sup>1</sup> Marx xxxx, p. xxx; xxxx, p. xxx; and xxxx, p. xxx.

profit in any meaningful sense. If we compare trough with trough, and measure the rate of profit as the ratio of profit to the actual sums of money invested in order to acquire capital goods, minus depreciation (their historical cost), there has been *no recovery* of profitability in the U.S. corporate sector since the early 1980s.

The paper then presents a theory that links the tendential fall in the rate of profit to the current crisis. The theory, in short, is as follows. The rate of profit tends to fall because its level at the start of a boom is unsustainable. In the absence of stimulative policy, *the rate of profit tends to fall to a lower, long-run rate of profit*, the level of which is regulated by the growth rate of employment, the share of profit that is reinvested, and the growth rate of the nominal prices relative to real values. This tendency is reversed especially by the destruction of capital (physically and in value terms), which restores profitability and ushers in a new boom. However, in contrast to what occurred in the Great Depression and World War II, capital was not sufficiently destroyed during the global economic slump of the mid-1970s, largely because of demand-management policies meant to prevent a repeat of the Depression. Thus the rate of profit has remained at a level too low to sustain a new boom.

The result has been relative stagnation, as measured, for instance, by profitability that has not rebounded and falling rates of growth of per capita GDP. Governments have repeatedly attempted to “manage” the relative stagnation by pursuing policies that encourage excessive expansion of debt. They have thus artificially boosted profitability and economic growth, but in an unsustainable manner that has repeatedly led to burst bubbles and debt crisis. The present crisis is the most serious and acute of these.

In order to test the theory, the paper also presents some empirical evidence, especially evidence that the rate of profit tends to fall, from its level at the start of a

boom, toward a lower, long-run rate of profit that is regulated by the growth rate of employment and the other factors mentioned above. The empirical results turn out to be consonant with the theory. In particular, the hypothesis of a tendency for the observed rate of profit to converge upon the long-run rate of profit is strikingly confirmed. It is worth noting that this hypothesis was not formulated *ex post*; it was first advanced ten years before the empirical study was conducted.<sup>2</sup>

## **II. Marxist Economists' Dismissal of the Relevance of Marx's LTRRP**

### **Dismissal**

Some prominent Marxist economists have recently asserted that the rate of profit in the U.S. has almost completely recovered from the fall it underwent through 1982.

Therefore, they contend, Marx's LTRRP is of little value, if any, when trying to explain the roots of the current economic crisis. Instead, they attribute the crisis to financial-sector phenomena—which they portray as largely unrelated to and separable from movements in profitability. Last July, Fred Moseley (2008) wrote,

Three decades of stagnant real wages and increasing exploitation have substantially restored the rate of profit [in the U.S.], at the expense of workers. This important fact should be acknowledged. ... The main

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<sup>2</sup> The hypothesis was put forward in Kliman 1999, pp. 7-10 and in Kliman 2003, pp. 23-26. The latter paper is a revised version of the former one. Freeman and Kliman (2000, pp. xxx-xxx) also contains a theoretical discussion of the convergence of the rate of profit upon the long-run rate (which it refers to as the “marginal rate.”)

problem in the current crisis is the financial sector. ... The best theorist of the capitalist financial system is Hyman Minsky, not Karl Marx. The current crisis is more of a Minsky crisis than a Marx crisis.

Earlier this year, and despite the fact that the crisis has worsened considerably since last July, Moseley (2009, pp. 300-01) also argued that the substantial restoration of the rate of profit verges on “almost complete recovery”:

the rate of profit is now approaching the previous peaks achieved in the 1960s ... The last several years especially, since the recession of 2001, has seen a very strong recovery of profits .... I conclude that there has been a very substantial and probably almost complete recovery of the rate of profit in the U.S.

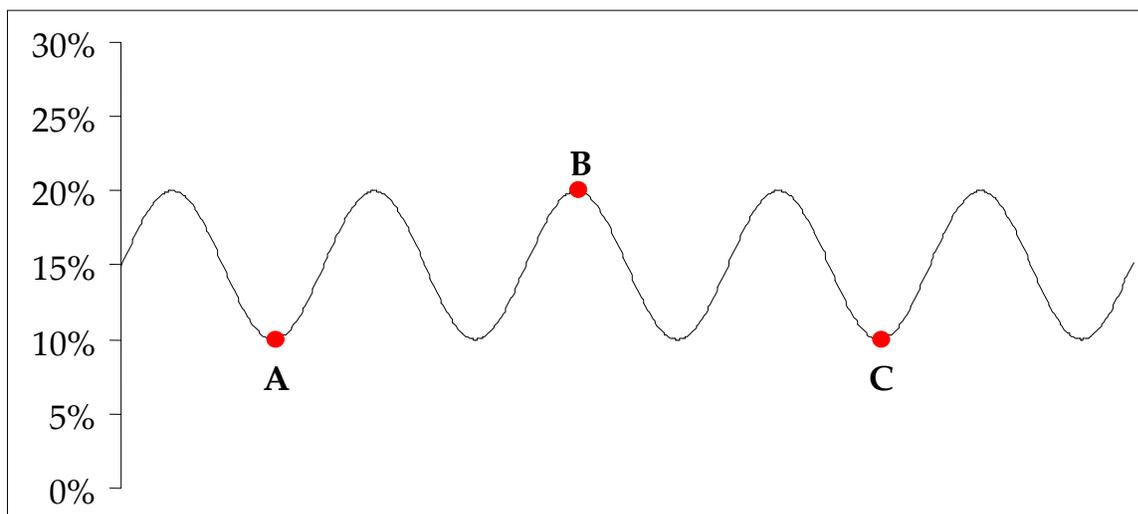
Estimates by Gérard Duménil and Dominique Lévy (2005) indicate that the rate of profit of the overall business sector in the U.S. has not recovered so substantially. Yet with regard to the corporate sector, their view echoes Moseley's; as of 1997, the rate of profit of the “Corporate sector ... recovered to its level of the late 1950s. ... Considering the evolution of the profit rate since World War II, the recovery of the profit rate appears nearly complete within the entire Corporate sector” (Duménil and Lévy 2005, p. 9, p. 11, emphases omitted). In light of this view, a recent report on comments made by Duménil at the November 2008 *Historical Materialism* conference come as no surprise: “Duménil ... mock[ed] the idea that ‘the profit rate had to be behind the crisis.’ . . . [H]e thought the crisis was of financial origin and that the profit rate had been relatively steady and had little to do with it.” The same report states that Costas Lapavistas,

another well-known Marxist economist, was “also dismissive of the profit-rate line” (Beggs 2009).

### **Cherry-Picking Troughs and Peaks**

Before arguing that the crisis *does* have a lot to do with Marx’s LTFRP, and that there has been no sustained recovery of corporate profitability in the U.S., I want explain why Moseley and Duménil have put forward the contrary view. They do so, in part, because they fail to distinguish between cyclical variations in profitability and longer-term (secular) trends in profitability. It is obvious that, in order to ascertain the trend, one needs to set aside or control for cyclical effects. Otherwise, one might take a completely *trendless* data series (such as the sine wave depicted see Figure 1) and conclude that it exhibits a rising trend simply by cherry-picking a trough point (A) and comparing it to later peak point (B). Or one might say with equal validity (i.e., none) that the series exhibits a falling trend, simply by cherry-picking a peak point (B) and comparing it to later trough point (C).

**Figure 1.**



But this is exactly what Moseley and Duménil-Lévy do. When he asserts that the rate of profit has almost completely recovered from its prior fall, Moseley is comparing his rate of profit during the *trough* or near-trough years from the mid-1970s through the early 1980s with the rate during the *peak* period of 2004-2007 or 2005-2007—even though it is clear to him that an unsustainable asset-price bubble was underway during the latter period (Moseley 2009, esp. section 5). Had he compared the troughs in his data, Moseley would have reported a rise in the rate of profit from 10% in 1980 to 14% in 2001, rather than the rise of twice that amount (to 17%-19%) that induced him to refer to an “almost complete recovery” of the rate of profit. And he would have reported *no recovery* in trough rates of profit from 1987 through 2001, the most recent trough year.

Similarly, Duménil and Lévy (2005) chose to analyze movements in profitability only through 1997. They made this choice, for reasons they do not explain, even though their paper actually presents data through 2000, and even though a few more years of data, including data for the trough year of 2001, were available when they published their paper. But 1997 was a peak profit-rate year. Thus when they state that the corporate sector’s rate of profit fell sharply through 1982 and then underwent a “recovery [... that] appears nearly complete,” Duménil and Lévy are comparing a *trough* to a *peak*.

Why do Moseley and Duménil-Lévy choose to cherry-pick their data in this manner? I do not know. I can only speculate that they “see” the increases in profitability, but not the subsequent declines, as significant, and that this stems from a “pre-analytical vision” of *Capital Resurgent* (Duménil and Lévy 2004), in which a neoliberal, free-market counter-revolution gave rise to a new, sustainable boom on the

backs of the working class. This vision has helped many on the Left find an “objective basis” for both the hopelessness and feelings of impotence they have experienced and for the resignation to the status quo, or mildly reformist alternatives to it, that they have taken to advocating. The data themselves do not tell such a clear-cut story.

### **Current-cost and Historical-Cost Rates of Profit**

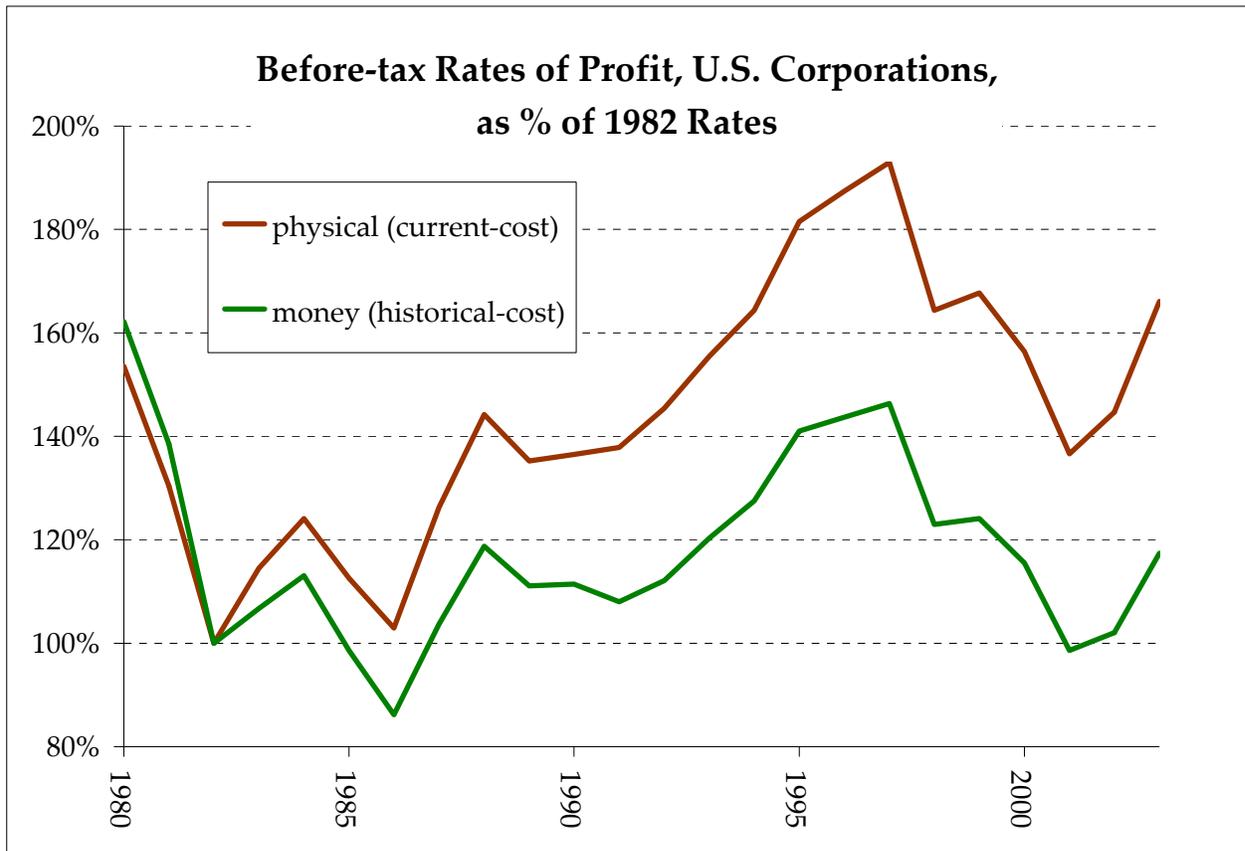
Another reason why Moseley and Duménil-Lévy find that the rate of profit has strongly recovered is that they value capital advanced, the denominator of the rate of profit, at its replacement cost, also known as current cost, rather than at its historical cost, i.e., the actual cost of acquiring the capital goods (net of depreciation). As Figure 2 indicates, using official Bureau of Economic Analysis (BEA) data for all U.S. corporations, financial as well as non-financial, the current-cost and historical-cost rates of profit have diverged markedly since 1982.<sup>3</sup>

The current-cost rate rose by 93.0% from the trough year of 1982 to the peak year of 1997. The historical-cost rate also rose sharply during that period, but by only half as much in percentage terms, 46.3%. Both rates then fell to a similar degree during the next four years. This left the current-cost rate 36.6% *higher* at the 2001 trough than at

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<sup>3</sup> The numerator of both rates is “Corporate Profits Before Tax,” reported in the BEA’s NIPA tables 6.17, A thru D, line 1. The denominators are the “Net Stock of Private Fixed Assets” of corporations, at current cost and at historical cost, reported in the BEA’s fixed asset tables 6.1, line 2, and 6.3, line 2, respectively. The denominator of the current-cost rate is the net stock of fixed assets at the end of the same year; the denominator of the historical-cost rate is the net stock of fixed assets at the end of the prior year.

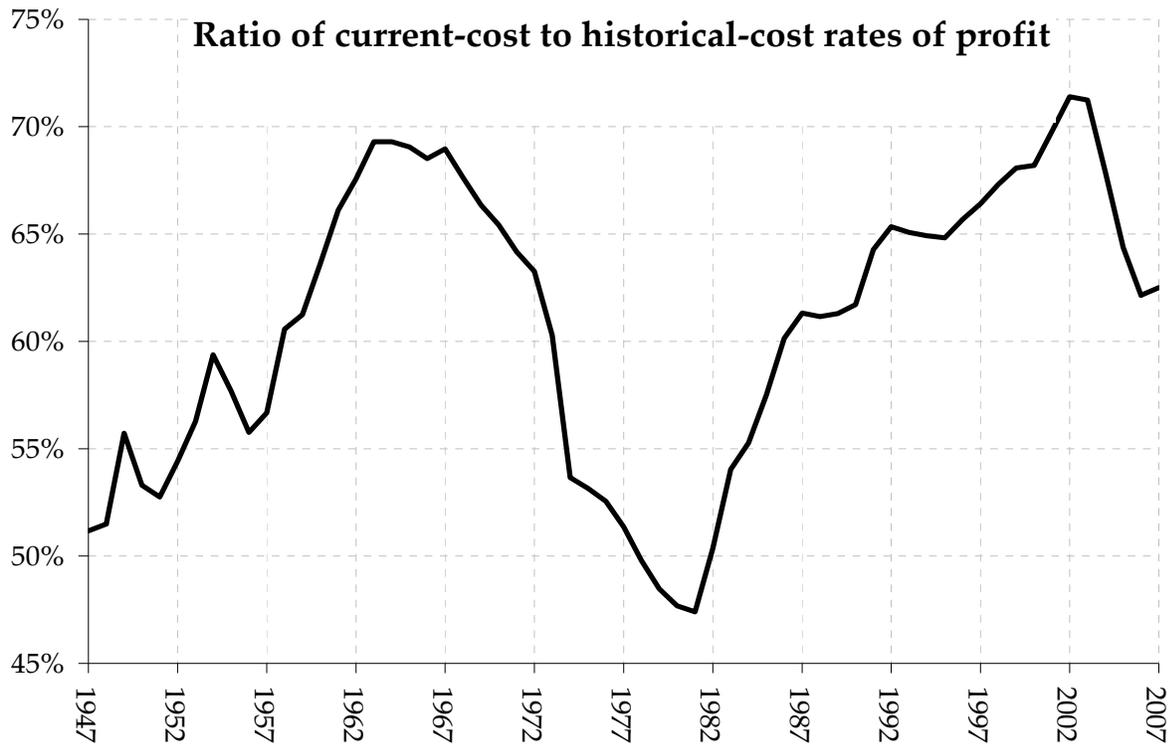
**Figure 2.**



the 1982 trough, while the historical-cost rate was 1.4% *lower* in 2001 than in 1982. Thus the current-cost rate has indeed recovered, even when we compare trough to trough, but there has been *no sustainable recovery* of the historical-cost rate.

Figure 3 examines the relationship between these two rates throughout the post-World War II period. The ratio of the current-cost rate to the historical-cost rate rose by 35% (not percentage points) from 1947 to 1964, then fell by 32% from 1964 to 1981, and then rose again, by 51% from 1981 to 2002. The fall occurred because of the accelerating inflation of the late 1960s through the early 1980s, and the subsequent rise is due to the deceleration of inflation (disinflation) that took place thereafter. In other words, because replacement-cost valuation retroactively revalues capital assets, instead of

**Figure 3.**



valuing them at the prices at which they were acquired, it inflates the denominator of the rate of profit in periods of rising inflation, artificially lowering the rate of profit, and it deflates the denominator in periods of disinflation, which raises the rate of profit artificially.

Thus the relationship between the current-cost and historical-cost rates of profit has been quite unstable over the last 60 years. Owing to this instability, judgments as to whether profitability has or has not recovered depend largely upon which of the two rates is discussed. Moreover, claims that the current crisis is rooted in distinct and separable financial-market disturbances, rather than in a persistent slump in profitability, can be valid only if the current-cost rate of profit is a valid measure of profitability. It is therefore clear that replacement-cost versus historical-cost

measurement is a matter of considerable empirical significance.<sup>4</sup> A choice must be made.

### **Why the Replacement-Cost Rate of Profit isn't One**

It is therefore worth assessing the argument in favor of replacement-cost valuation of capital investments. Mainstream Marxist and Sraffian economists have now used the replacement-cost, or current-cost, rate of profit to assess movements in profitability for nearly a half-century, at least since Okishio (1961). Is it really the case (I have been asked) that they have all been guilty of an outright error?

My answer is an unqualified “yes.” The replacement-cost rate of profit is simply not a rate of profit in the normal sense of the term.<sup>5</sup>

First of all, the replacement-cost “rate of profit” is not what businesses and investors seek to maximize. They base their investment decisions on measures of profitability such as the internal rate of return and net present value. Whereas the replacement-cost “rate of profit” values current investment expenditures and future

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<sup>4</sup> I point this out because some critics of the temporal single-system interpretation of Marx's value theory (TSSI) have dismissed its critique of replacement-cost measurement of the rate of profit by arguing—incorrectly, as we see—that the issue has little empirical relevance.

<sup>5</sup> The BEA publishes data for profits and capital stocks in terms of current costs, but it does not divide the one series by the other, nor sanction that procedure. It publishes no rate-of-profit information; its capital stock estimation procedures were developed for other purposes.

receipts simultaneously, using a single set of prices, these measures use current prices to value current investment expenditures, but use expected future prices to compute future receipts.

Secondly, the replacement-cost “rate of profit” fails to accurately measure businesses’ and investors’ actual rates of return, their profits as a percentage of the original amount invested. The discrepancy can be very large. Imagine, for instance, an investment that would generate a constant revenue stream over a very long time, if the price of the product produced by means of the investment remained constant. If, however, the price rises or falls by a constant percentage per period, it is easy to show that the actual rate of return  $r^A$  and the replacement-cost “rate of profit”  $r^{RC}$  are related as follows:

$$r^A = (1+\dot{p})r^{RC} + \dot{p}$$

where  $\dot{p}$  is the per-period percentage change in the product’s price (in decimal form).<sup>6</sup>

Thus if  $r^{RC} = 10\%$  (i.e., 0.10) but the price of the product falls by 2% per period (i.e.,  $\dot{p} = -0.02$ ), then  $r^A$  is 7.8%.

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<sup>6</sup> Denote the amount invested as  $I$ , and the per-period revenue stream if the product’s price remained constant as  $R$ . Then, applying the standard internal rate of return

formula, we have  $I = R \sum_{i=1}^n \left( \frac{1}{1+r^{RC}} \right)^i$  and  $I = R \sum_{i=1}^n \left( \frac{1+\dot{p}}{1+r^A} \right)^i$ . If the number of periods  $n$  is

large, then  $R \sum_{i=1}^n \left( \frac{1}{1+r^{RC}} \right)^i \approx R \left( \frac{1}{r^{RC}} \right)$  and  $R \sum_{i=1}^n \left( \frac{1+\dot{p}}{1+r^A} \right)^i \approx R \left( \frac{[1+\dot{p}]}{[1+r^A]-[1+\dot{p}]} \right)$ . Since the

Thirdly, contrary to what proponents of simultaneous valuation (e.g., Laibman 1999: 223) often claim, the replacement-cost “rate of profit” fails to accurately measure businesses’ and investors’ expected future rates of return. Imagine that a firm invests in new equipment that costs \$100,000 at today’s prices, and that the resulting increase in its output, if valued simultaneously—i.e., also on the basis of today’s prices—is \$10,000 per annum. The replacement cost “rate of profit” on this investment is 10%. Yet if the price of its product is expected to decline by 2% per annum, as in the example above, only the most naïve firm would overlook this information and expect a 10%, rather than a 7.8%, rate of return on its investment.

Finally, the replacement-cost “rate of profit” bears no clear relationship to the rate of capital accumulation (or “economic growth”). Yet this relationship is perhaps the main reason why the rate of profit is of economic importance. It is well known, for instance, that the rate of profit is the maximum rate of accumulation. However, it is easy to show that, if prices are falling, the replacement-cost “rate of profit” can exceed the maximum rate of accumulation by a considerable amount.

Imagine an economy without fixed capital, in which seed corn and labor are the only inputs, corn is the only output, and workers are paid in corn. At the start of the year, the capitalist farmers obtain one-year loans totaling \$40 million from their bankers. Since the price of corn is \$5/bushel, they use the \$40 million they’ve borrowed to purchase 8 million bushels of corn, which they then plant as seed and use to hire farmworkers. At year’s end, 10 million bushels of corn are harvested.

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two right-hand sides both equal  $I$ , they can be set equal to each other, and the relation given in the text is then easily derived.

Now imagine that the price of corn has fallen in the meantime to \$4/bushel. Sales revenue is  $\$4 \times 10 \text{ million} = \$40 \text{ million}$ , and the *replacement cost* of the 8 million bushels of corn invested at the start of the year is  $\$4 \times 8 \text{ million} = \$32 \text{ million}$ . Profit computed on the basis of replacement costs is therefore  $\$40 \text{ million} - \$32 \text{ million} = \$8 \text{ million}$ , and so the replacement-cost “rate of profit” is  $\frac{\$8 \text{ million}}{\$32 \text{ million}} = 25\%$ . In

terms of value (or price), however, there is no profit—even if we ignore the interest that the capitalist farmers must pay the bankers. The \$40 million in sales revenue received at year’s end is no greater than the \$40 million invested at the start. The actual value (or price) rate of profit is therefore 0%.

Which of these two rates of profit, 25% or 0%, more accurately depicts the maximum rate of capital accumulation—i.e., the farmers’ ability to expand their operations next year? Proponents of replacement-cost valuation contend that the maximum rate of accumulation is indeed 25%. The farmers invested initially 8 million bushels of corn, but end the year with 10 million bushels, which is a 25% increase. Thus they can supposedly expand their operations by up to 25%, by investing 10 million bushels of corn at the start of next year instead of the 8 million bushels that they invested at the start of the current year.

The farmers themselves, however, are a wee bit disappointed. Their one-year loans must now be repaid, and they have to use their entire sales revenue of \$40 million to repay the \$40 million that they borrowed at the start of the year. The farmers’ net worth hasn’t increased at all and, after repaying their loans, they have nothing left over with which to expand their operations. *Even in physical terms*, they are unable to accumulate. Moreover, they have not yet paid, and cannot pay, the interest that they

owe the bankers. If the same situation occurs year after year—with corn output exceeding corn input by 25% each year, but the price of corn falling by 20%—the farmers are soon drowning in debt.<sup>7</sup>

### **Logical and Methodological Bases of the Dismissal**

I have focused above on empirical arguments, but it must be stressed that two main reasons why the LTFRP is dismissed as irrelevant to an explanation of the current economic crisis are not empirical, but logical and methodological. First, mainstream Marxist and Sraffian economists have long dismissed the law, and have even regarded reference to it as a sign of dogmatism and obscurantism, on the ground that it is *logically impossible*. While Marx argued that labor-saving technical change produces a tendency for the rate of profit to fall, Okishio's (1961) theorem supposedly proved that

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<sup>7</sup> The farmers can, of course, continue to produce, and even produce an increasing amount of corn each year—if they can persuade their bankers to extend them new loans. This is not very likely. Simple spreadsheet computations show that, as long as the farmers must pay a positive rate of interest, the ratio of their debt to their sales revenue will grow exponentially, and the absolute level of their debt will also grow exponentially in the long term, even if the physical volume of corn they produce doesn't increase over time. It is also important to note that nothing is really different if the farmers are able to finance their own operations. Their books may not show that they owe interest to themselves, but if they continually extend zero-interest loans to themselves, they continually forego the interest that they could acquire by investing their money capital externally.

profit-maximizing capitalists will never adopt any labor-saving technical changes that have this effect. Any technical changes that raise their own rates of profit, given current prices and wages, will result in a higher (or constant) economy-wide rate of profit, when all is said and done.

Okishio's theorem has since been disproved by proponents of what is now known as the temporal single-system interpretation of Marx's value theory, myself included (see Kliman 2007, esp. Chap. 7). However, the myth that Okishio showed that the rate of profit cannot possibly fall for the reasons Marx stated remains prevalent among Marxist and Sraffian economists. The myth affects the debate over the causes of the current crisis, by making it less than respectable to even consider Marx's law as a potential determinant of the crisis.

There is also a methodological why both the LTFRP and the historical-cost rate of profit are dismissed. In an effort to be scientific, or at least good economists, mainstream Marxist and Sraffian economists have long embraced equilibrium modeling and what Steedman (1977, p. xxx) called the "physical quantities approach" to valuation and profitability. This approach compels one to measure the rate of profit in replacement-cost terms.<sup>8</sup> So the historical-cost rate of profit is dismissed simply because one would violate the methodological norms of equilibrium economics and

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<sup>8</sup> Since static-equilibrium prices are constant prices, it follows that, in a static equilibrium, the prices at which capital goods were acquired are the prices at which they can now be replaced. And when prices are constant, the only remaining determinants of the rate of profit are physical quantities. Thus the replacement-cost rate of profit is an essentially physical rate.

physicalism if one were to use it to assess movements in profitability. And since the the reclamation of the LTFRP against the Okishio theorem requires repudiation of replacement-cost valuation, it too must be dismissed, despite the fact that the theorem has been disproved, in order to protect these methodological norms. I cannot think of another plausible way of explaining why, although Duménil and Lévy (2005) study a great variety of measures of the rate of profit, all of these measures value capital investments at their replacement cost.

### **III. The Rate of Profit and the Crisis**

Since the replacement-cost rate of profit isn't a rate of profit in any real sense, and since there has been no sustainable recovery of the actual (historical-cost) rate of profit, and since the myth that Okishio's theorem refutes the LTFRP has itself been disproved, perhaps Marx's theory can help to explain the current economic crisis after all. I will now argue that it does help. In brief, my view is as follows:

- The rate of profit heads toward “the long-run rate of profit.”
- At the start of a new boom, the rate of profit is well above the long-run rate of profit, *so it tends to fall over time*.
- This situation persists unless there's sufficient “destruction of capital.”
- Destruction of capital restores profitability, and thus ushers in a new boom. This is what happened in the Great Depression and World War II.
- But there was insufficient destruction of capital in the economic crises of the mid-1970s and early 1980s. Rather than allowing there to be a depression (and subsequent boom!), policy-makers have continually encouraged excessive expansion of debt.

- This artificially boosts profitability and economic growth, but in an unsustainable manner; it leads to repeated debt crises.
- The present crisis is the most serious and acute of these.

### **The Long-Run Rate of Profit**

My first theoretical point in the above sketch is that the rate of profit heads toward the long-run rate of profit. So what I'm calling the "long-run" rate of profit is the rate toward which the actually observed rate of profit tends in the long run, all else being equal. What is this long-run rate? According to Marx's theory, all profit comes from workers' labor. Thus the long-run rate of profit depends in part upon (1) the rate of growth of employment. This is held down by labor-saving technical progress. The long-run rate also depends upon (2) the share of profit or surplus-value that is reinvested, (3) the relationship between profits and wages, and (4) the rise in money prices above the real value (determined by labor-time, according to Marx's theory) of goods and services (see Kliman 2003, pp. 123–26).

But just for the moment, let's ignore the factors (3) and (4). In other words, let's consider what the long-run rate of profit *would be* if the relationship between profits and wages were constant, and if money prices didn't rise above real values.

If prices equaled values, then the rate of profit could be expressed as a ratio of variables measured in terms of labor-time rather than as a ratio of variables measured in terms of money. So let  $S$  stand for surplus labor, i.e., surplus value in labor-time terms; let  $L$  stand for living labor; and let  $C$  stand for the capital invested in terms of labor-time. Then  $S/C$  is the *labor rate of profit*, i.e. the rate of profit measured in terms of labor-time. In the long run,  $S/C$  tends toward the *incremental labor rate of profit*,

$\Delta S/\Delta C = \frac{\Delta(S/L)}{\Delta C}$ , which is simply the labor rate of profit on new investments.<sup>9</sup> Now if the relationship between profit and wages were constant, then  $S/L$ , surplus-labor per worker, would be constant. Under this assumption,

$$\Delta S/\Delta C = \left(\frac{S}{L}\right)\left(\frac{\Delta L}{\Delta C}\right) = \left(\frac{\Delta L/L}{\Delta C/S}\right) = \left(\frac{\text{percentage growth rate of } L}{\text{share of surplus - value reinvested}}\right)$$

My estimates of the incremental labor rate of profit are estimates of this ratio,<sup>10</sup> and the mean value of the incremental rate is the *long-run labor rate of profit*, which I

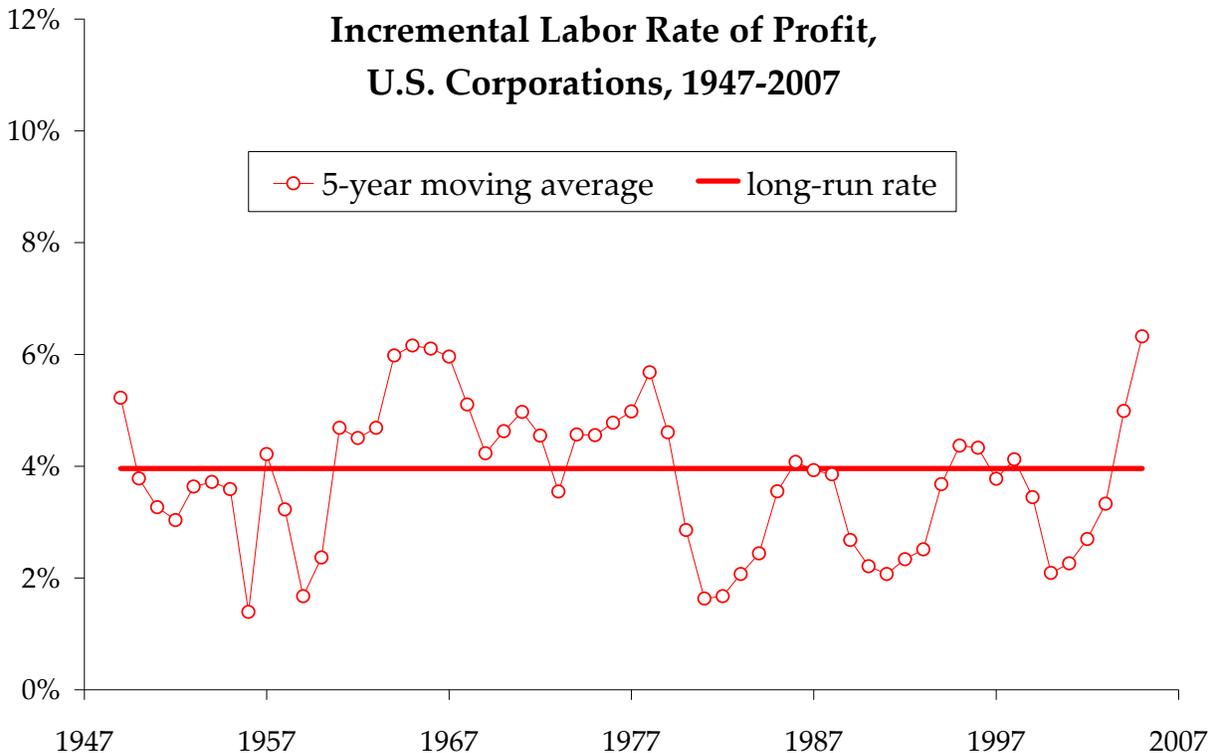
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<sup>9</sup> For instance, if an additional investment of 100 results in a 4-unit increase in surplus-value, then  $\Delta S/\Delta C = 4\%$ , and if new investments continue to yield a 4% rate of profit, then the labor rate of profit heads toward 4% in the long run.

<sup>10</sup> Because of limited data on the early years of this study (which begins in 1929), I have had to use employment (among the adult civilian noninstitutional population, as reported in the U.S. Bureau of Labor Statistics' household survey) to approximate  $L$ . Conversion of money figures into labor-time figures requires estimation of the monetary expression of labor-time (MELT). Because the data needed to compute the temporalist MELT are unavailable for years prior to 1987, I have approximated it by computing the simultaneist MELT, namely the ratio of nominal GDP to  $L$ . Reinvested surplus-value between years  $t$  and  $t+1$  is the monetary net investment in fixed assets in  $t+1$  (equivalent to the change between the two years in the historical cost of the net stock of these assets) divided by the MELT of  $t+1$ , while total surplus-value is monetary profit of  $t$  divided by the MELT of  $t$ . The share of surplus-value that is reinvested is the ratio of reinvested

have estimated for the whole post-World War II period (following the peacetime reconversion of 1946). As Figure 4 shows, the long-run labor rate of profit has been trendless, a constant 4.0% on average.<sup>11</sup>

**Figure 4.**



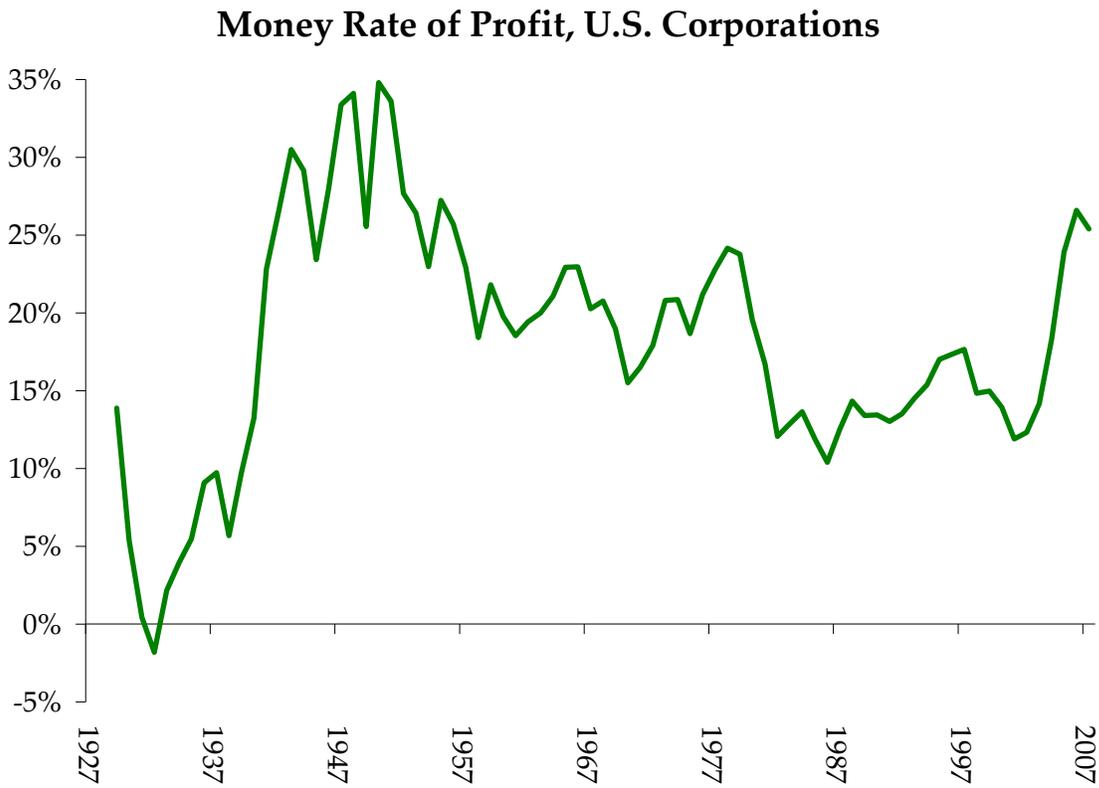

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surplus-value to total surplus-value. See note **x** above for further details on my measures of the historical cost of the net stock of fixed assets and monetary profit.

<sup>11</sup> Regression estimates indicate that the long-run labor rate fell on average by 0.00006 (six-thousands of one percentage point) per year, but this decline was not statistically significant at any reasonable level, since the *t*-statistic was only  $-0.238$ . And when the 1947 observation is removed from the series, the slope became positive (but even closer to zero and less statistically significant).

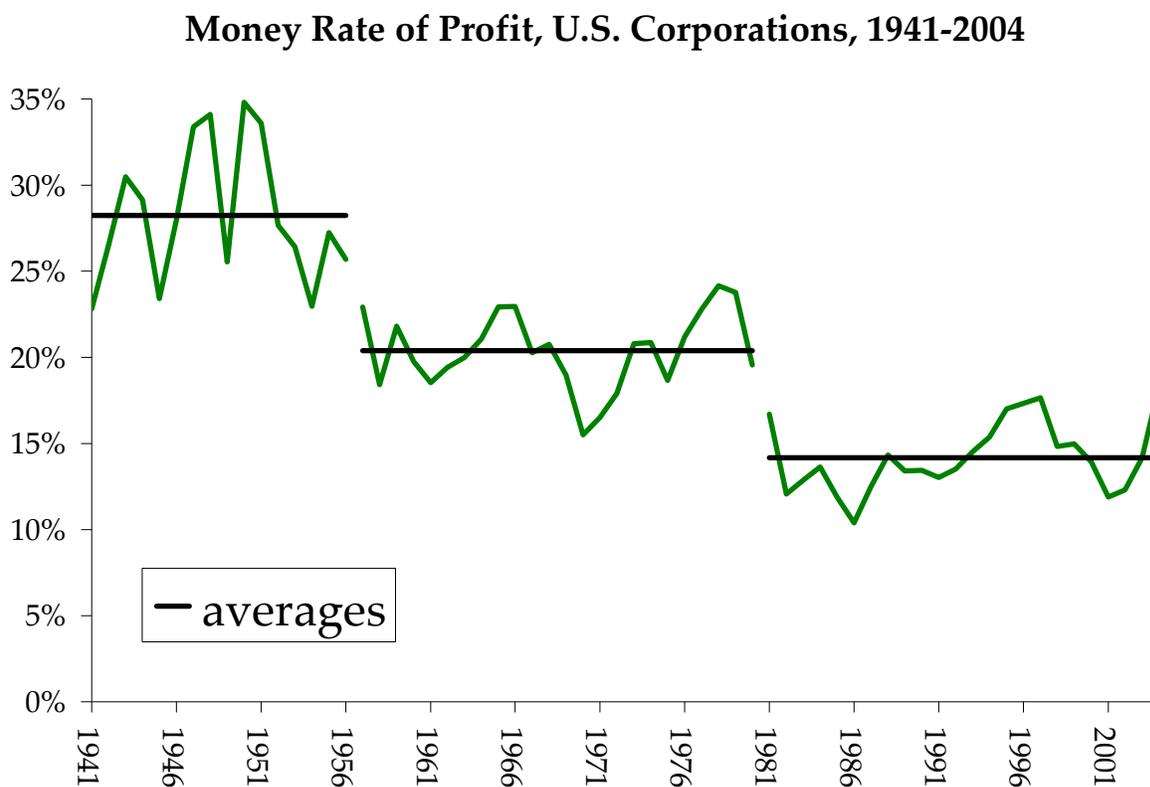
My second point in the above theoretical sketch was that, at the start of a new boom, the rate of profit is well above the long-run rate of profit, so it tends to fall over time. Figure 5 shows that the money rate of profit (measured in terms of historical costs) did in fact start off much higher in the boom that began after the Great Depression, and that it has tended to fall consistently since then.

**Figure 5**



Closer examination of the same data series reveals that there have been three distinct periods since the start of World War II. As we see in Figure 6, the money rate of profit averaged 28%, falling to 20% in the 1957-1980 period, and falling further to 14% in the period from 1981 through 2004.

**Figure 6.**

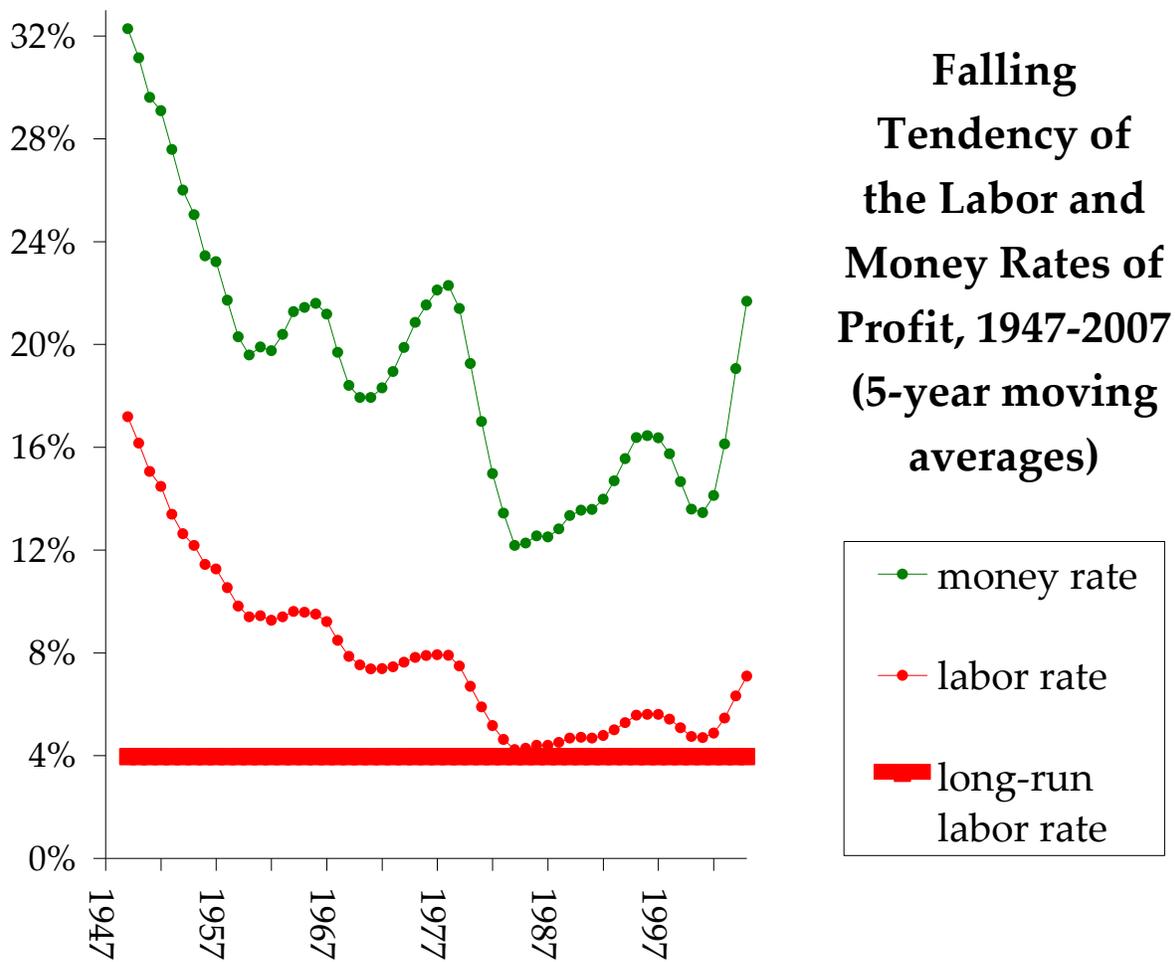


**Decomposing the Fall**

What caused the fall? Well, according to the theory presented above, there is the long-run labor rate of profit, 4%. Then there's the actual labor rate of profit, which is what the money rate of profit *would have been* if money prices didn't rise above real values.

Figure 7 shows that there has been a clear tendency for the actual labor rate of profit to head toward the long-run labor rate, just as the theory suggests. Beginning at about 18.5% at the start of the postwar period, the actual labor rate fell more or less consistently toward the long-run rate, bottoming out in 1986 at 3.7%, slightly below the long-run labor rate. Since that time, and up until the last few years of the period under

**Figure 7.**



study,<sup>12</sup> the actual labor rate remained quite close to the long-run rate. During the quarter-century from 1980 through 2004, the labor rate of profit averaged 5.0%, just 1 percentage point greater than the long-run labor rate.

Then there's the excess of the money rate over the actual labor rate. Prices have consistently risen in relationship to the real values of goods and services, and this consistently boosts the money rate of profit over the labor rate. But as Figure 7 shows, the gap between the two rates has been roughly constant—in fact, it has fallen by several percentage points since the rate of inflation came down in the early 1980s.<sup>13</sup> *Since the gap is roughly constant, the fall of the labor rate of profit toward its long-run level has been accompanied by a fall, of basically the same extent, in the money rate of profit.* And given the roughly constant gap between the two rates, it follows from the failure of

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<sup>12</sup> The labor rate, the money rate, and the physical (current-cost) rates all rose sharply in the 2004-2007 period. This seems to be partly a result of the asset-price bubble at that time. It also seems to be partly due to a very sharp decline in gross investment a few years earlier. Between 2000 and 2002, corporations' gross investment in fixed assets declined by 17%. The reduction in capital investment reduces the denominator of the rate of profit, thereby raising the rate.

<sup>13</sup> Why the gap has remained roughly constant is a topic requiring further research. But it is clear from the double-digit inflation of the 1970s and the subsequent disinflationary slump triggered by Federal Reserve policy that there are strict political limits to the rate of growth of money prices relative to labor-time values (which is the factor that creates the gap). Owners of assets will not sit idly by when these assets' command over labor and goods is rapidly eroded by inflation.

the labor rate to rebound—i.e. from the fact that it remained close to its long-run regulating rate for a quarter century—that the money rate of profit also failed to recover.

These results match the theory to a much greater degree than I expected before I began this analysis. They show clearly that *the dominant* cause of the fall in the observed, money rate of profit was the fall in the labor rate of profit toward a long-run level *determined by precisely the variables that Marx's LTFRP singles out*—the growth rate of employment and the share of surplus-value that is reinvested. Between 1947 and 1986, the labor rate of profit fell by 80% and the money rate fell by 69%. (The 11% difference is due to the only remaining factor, the rise in prices relative to labor-time values that kept the money rate of profit from falling by as great a percentage as the labor rate fell.)

### **Insufficient “Destruction of Capital”**

My next point in the above theoretical sketch was that this tendency of the rate of profit to fall toward its long-run level persists unless there's sufficient “destruction of capital.”<sup>14</sup> This is a key concept of Marx's (1989, p. 127–28) theory of capitalist crisis. By “destruction of capital,” he meant not only the destruction of physical capital assets, but also, and especially, of the *value* of capital assets.

In an economic slump, machines and buildings lay idle, rust and deteriorate, so physical capital is destroyed. More importantly, 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. Yet the destruction of capital is also the key mechanism that leads to the next

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<sup>14</sup> This section is based on the analysis presented in Kliman (2009).

boom. For instance, if a business can generate \$3 million in profit annually, but the value of the capital invested in the business is \$100 million, its rate of profit is a mere 3%. But if the destruction of capital values enables new owners to acquire the business for only \$10 million instead of \$100 million, their rate of profit is a healthy 30%. That is a tremendous spur to a new boom.

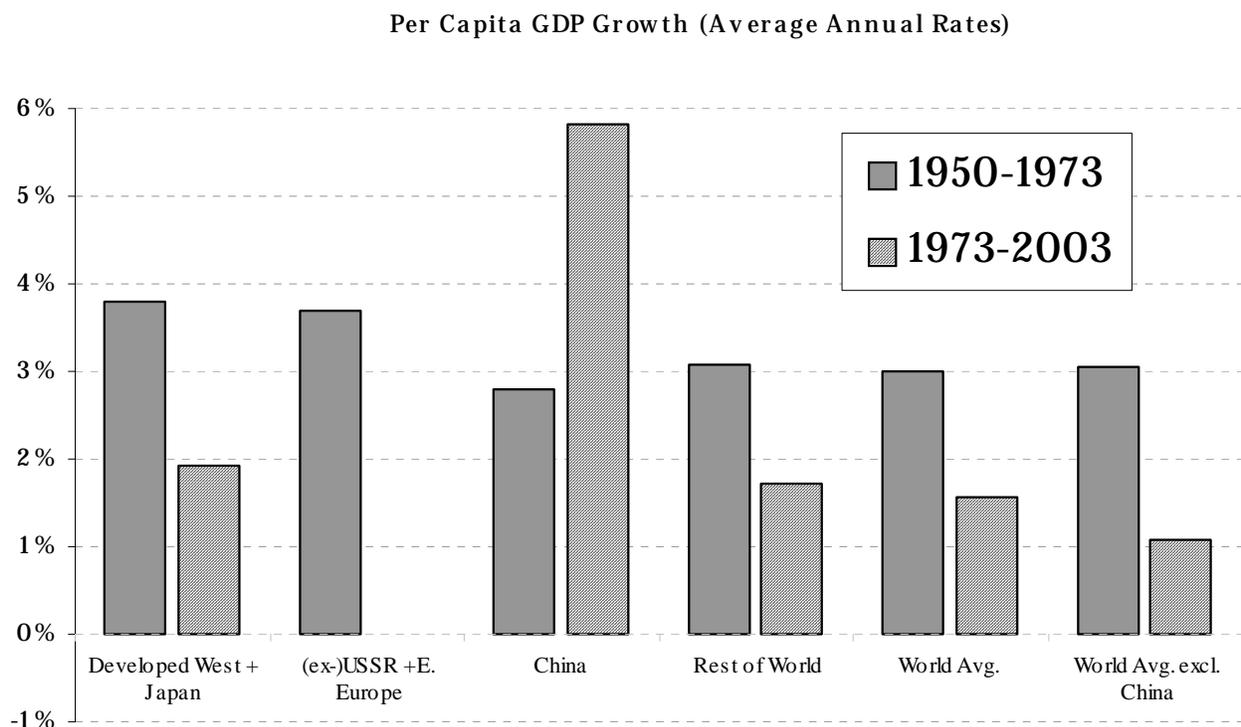
Thus the post-war boom came about, I believe, as a result of a massive destruction of capital that occurred during the Great Depression and World War II. One measure of that boom is the rise in the rate of profit that we saw in Figure 5, from  $-2\%$  in 1932 to 30% in 1943.

At the start of the Great Depression, the destruction of capital was actually advocated by conservative economists and policymakers, especially Andrew Mellon, President Hoover's Treasury Secretary. It was called "liquidationism." But in the 1970s and thereafter, policymakers in the U.S. and abroad have understandably been afraid of a repeat of the Great Depression. They have therefore repeatedly attempted to retard and prevent the destruction of capital. This has "contained" the problem, while also prolonging it. As a result, the economy has never fully recovered from the slump of the 1970s, certainly not in the way in which it recovered from the Great Depression.

The failure of the rate of profit to recover is one indicator of the lack of a new boom. Another indicator is the decline in per capita GDP growth. In the developed "Western" countries (including Japan), and in the world as a whole, the average growth rate of Gross Domestic Product per person during the 1973–2003 period was just barely

more than half the growth rate between 1950 and 1973 (see Figure 8). Excluding China, the worldwide growth rate fell by almost two-thirds.<sup>15</sup>

**Figure 8.**



In order to mitigate the effects of the economy’s relative sluggishness, and perhaps hoping to overcome it, policymakers have tried to prop up growth and profitability artificially throughout the last three decades. For instance, the slump has been contained in the developed countries to some degree by “exporting” it to the most

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<sup>15</sup> I have used the authoritative data compiled by Angus Maddison for the 1950–2003 period, available at [www.ggdc.net/maddison/Historical\\_Statistics/horizontal-file\\_03-2007.xls](http://www.ggdc.net/maddison/Historical_Statistics/horizontal-file_03-2007.xls). His GDP figures are measured in constant 1990 international dollars (Geary-Khamis dollars).

vulnerable parts of the Third World. In the U.S., profitability has been propped up by means of a decline in real wages for most workers and other austerity measures. And, most importantly for the present analysis, the sluggishness of the economy has been papered over by an ever-growing mountain of mortgage, consumer, government, and corporate debt.

For instance, reduced corporate taxes in the U.S. have boosted the after-tax rate of profit relative to the pre-tax rate, but this boost has been financed by additional public debt. More than three-eighths of the increase \$6.8 trillion increase in U.S. Treasury debt after 1986 (through fiscal year 2007) is attributable to reduced corporate taxes as a percentage of corporate profits. Almost all of the remaining increase in the government's indebtedness is used to cover lost revenue resulting from reductions in individual income taxes, reductions that have served to prop up consumer spending and asset prices artificially. Similarly, the effects of declining real wages have until recently been mitigated by easy-credit conditions and rising prices of homes and stocks, brought about by Federal Reserve policies and other means. This has allowed consumers and homeowners to borrow more and save less. Whereas Americans saved about 10% of their after-tax income through the mid-1980s, the saving rate then fell consistently, bottoming out at 0.6% in the 2005–2007 period.

In the long run, however, debt cannot be used to "grow the economy" faster than is warranted by the underlying flow of new value generated in production. Efforts to do so create bubbles, but bubbles burst. The current economic crisis, which began with and remains centered in the crisis in the U.S. housing market, provides a striking example of this phenomenon. In large part because the Federal Reserve pursued a "cheap-money, easy-credit" strategy in order to prop up the economy in the wake of the collapse of the

dot-com boom, 9/11, the recession of 2001, and the drop in employment that continued into mid-2003, home mortgage borrowing as a percentage of after-tax income more than doubled from 2000 to 2005, rising to levels far in excess of those seen previously. This caused home prices to skyrocket. Mortgage debt and home prices both doubled between start of 2000 and the end of 2005.

But the rise in home prices was far greater than the growth of value from new production that alone could guarantee repayment of the mortgages in the long run. New value created in production is ultimately the sole source of all income, including homeowners' wages and salaries, and therefore it is the sole basis upon which the repayment of mortgages ultimately rests. Between 2000 and 2005, total after-tax income rose by just 35% percent, barely one-third of the increase in home prices. This is precisely why the real-estate bubble proved to be a bubble.<sup>16</sup>

Thus, in the period since the crisis of the mid-1970s, there have been recurrent upturns that have rested upon debt expansion. For that reason, they have been relatively short-lived and unsustainable. And the excessive run-up of debt has resulted in recurrent crises, such as the Third World debt crisis of the early 1980s, the savings and loan crisis of the early 1990s, the East Asian crisis that spread to Russia and Latin America toward the end of the decade, the collapse of the dot-com stock market boom shortly thereafter, and now the crisis in the U.S. housing market that has triggered the most acute economic crisis since the Great Depression.

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<sup>16</sup> See Kliman (2008) for sources and further analysis of the housing market crisis.

#### **IV. What's Next?**

Policymakers are responding to this crisis with more of the same—much, much more. The U.S. government is borrowing a phenomenal amount of money, for TARP, Obama's stimulus package, the new PPIP (Son of TARP) bailout of the banks, and so forth. If these measures succeed—and that is still far from a sure thing—full-scale destruction of capital will continue to be averted. But if my analysis is correct, the consequences of *success* will be continuing relative stagnation and more debt crises down the road, not a sustainable boom. To repeat, unless sufficient capital is destroyed, profitability cannot return to a level great enough to usher in a boom. And given the huge increase in debt that the U.S. government is now taking on, the next debt crisis could be much worse than the current one. It is therefore not unlikely that the next wave of panic that strikes the financial markets will be even more severe than the current one, and have more serious consequences.

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