

**Crisis Tendencies in Two Regimes:  
A Comparison of Regulated and Neoliberal Capitalism  
in the U.S.**

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## 1. Introduction

After World War II a significantly reformed version of capitalism emerged in the U.S., as in most other industrialized capitalist countries. Among the features of the new form of U.S. capitalism were an active role for the state as regulator of business and the economy as a whole, a welfare state, the acceptance of trade unions by most of big business, and a co-respective relation among large corporations in the core oligopolistic industries. This regime which can be called regulated capitalism, had been clearly established by about 1948 and lasted until about 1973.<sup>1</sup>

The working class had significant bargaining power under regulated capitalism, particularly when the unemployment rate dropped to a low level. Several features of the institutional structure in that period tended to reinforce workers' bargaining power. Trade unions represented a significant share of the private sector work force, and large corporations accepted them and agreed to engage in collective bargaining with them. State programs, such as unemployment compensation and Aid to Families with Dependent Children, provided a social wage which increased workers' bargaining power vis-a-vis their employer. Several sectors of the economy were regulated by a government agency, including power, transportation, and communication, and such regulation tended to promote the development of strong trade unions with significant bargaining power in those sectors.

A number of Marxist analyses of the US economy published shortly after that period viewed Marx's reserve army mechanism as a key cause of economic crises (Boddy and Crotty, 1975; Weisskopf, 1979; Bowles et. al., 1983). According to that analysis, if an economic expansion drives the rate of unemployment to a relatively low level, workers' bargaining power increases sufficiently so that the real wage rises faster than labor productivity. As a result, the share of wages in total income rises while the share of profit falls, resulting in a decline in the rate of profit. The declining rate of profit in turn causes an economic crisis, or recession.<sup>2</sup>

U.S. capitalism changed significantly after 1973, as the regulated form of capitalism itself went into crisis. By around 1979 a new neoliberal form of capitalism had emerged.<sup>3</sup> This transformation included deregulation of business, reductions in or elimination of social welfare programs, tight monetary policy that produced long periods of high unemployment, an aggressive attack on trade unions by both the state and big business, and the reappearance of an unrestrained form of competition among large corporations.<sup>4</sup> As regulated capitalism was dismantled and replaced by neoliberal capitalism, workers' bargaining power declined.

The dismantling of regulated capitalism and its replacement by a neoliberal form of capitalism appears to have resolved the problem, from capital's perspective, of the periodic squeeze on profits coming from rising real wages, which had characterized the earlier form of capitalism. However, no form of capitalism is free of crisis tendencies that cause periodic short-term crises, or recessions. The crisis tendencies that cause periodic crises in neoliberal capitalism are determined by the particular features of that form of capitalism. One can identify three possible crisis tendencies in neoliberal capitalism.

The first is underconsumption, a crisis tendency associated with capital having the upper hand in wage bargaining. Because of the limited bargaining power of labor in neoliberal capitalism, real wages tend to increase very slowly or even decline during economic expansions. There have been two long expansions in the U.S. in the neoliberal era to date, 1982-90 and 1991-2000. In the first the average real wage in the private sector fell by 2.1 per cent over the expansion, while in the second it rose but only by 0.6 per cent per year.<sup>5</sup>

A stagnation or decline in real wages is associated with the underconsumption crisis tendency. If the real wage stagnates or declines while labor productivity increases during an expansion, the share of profit in total income should rise, creating a potential realization problem. Unless accumulation or some type of unproductive spending (such as state spending or capitalist consumption) rises rapidly to absorb the rapidly rising profit-component of the value of output, production will outrun demand.<sup>6</sup>

A second crisis tendency can be found in the neoliberal institutional structure associated with the nature of competition in neoliberal capitalism. In contrast to the co-respective behavior toward one another by large corporations in the regulated capitalist era, in the neoliberal era capital-capital relations are characterized by unrestrained competition. Price wars, which rarely occurred in sectors dominated by big capital in the previous era, became commonplace in the neoliberal era. Unrestrained competition caused the threat of bankruptcy to return to the world of the large corporation, from which it had been almost entirely banished in the previous era.

Some analysts have argued that the unrestrained competition of neoliberal capitalism leads to excessive investment, as rival firms battle for survival by trying to raise their market share. This in turn leads to excessive creation of productive capacity, resulting in underuse of capacity.<sup>7</sup> Growing idle capacity eventually causes a downturn in investment, which sets off the crisis.

The third crisis tendency which can be found in neoliberal capitalism is associated with asset bubbles. Economic expansions in neoliberal capitalism tend to produce asset bubbles. The 1980s expansion produced a bubble in commercial buildings in some sections of the U.S., which, when it burst, led to the massive savings and loan collapse of that decade. The 1990s expansion gave rise to the great stock market bubble of 1995-2000. The expansion since 2001 produced a massive housing bubble (Kotz, 2006). The 1920s, which was the last period prior to the New Deal in which the U.S. had a liberal institutional structure, also saw huge bubbles in both real estate and securities.

A liberal institutional structure tends to produce bubbles in an economic expansion because rapidly rising profits, and rapidly rising personal income of wealthy households, create a pool of funds seeking investment that exceeds the available profitable productive investment opportunities. As a result, the excess investable funds find their way into the purchase of assets, which tends to raise asset prices, eventually setting off a speculative rise in asset prices -- that is, an asset bubble.<sup>8</sup>

An asset bubble in turn has an impact on the real economy. As paper wealth increases, both consumption and investment are stimulated, tending to rise at a rate out of line with increases in ordinary income. Investment may be so overstimulated that productive capacity rises faster than demand, as the euphoria and elevated expectations induced by the bubble affect corporate decision-makers who form an exaggerated estimate of future returns to investment. Once the bubble bursts, and consumption and investment return to levels in line with ordinary income, a large overhang of excess productive capacity is revealed, which may depress the incentive to invest for a lengthy period.

It would appear that the crisis tendencies in neoliberal capitalism would differ from those of regulated capitalism. The aim of this paper is to investigate whether the above view of the different crisis tendencies in regulated and neoliberal capitalism is consistent with the empirical data on economic crises in the U.S. during those two eras. Section 2 develops a methodology for determining which crisis tendencies are present through analyzing data about the rate of profit and its determinants. Section 3 applies the methodology developed in section 2 to empirical data for the

U.S. economy during 1949-2000. Section 4 offers concluding comments.

## 2. Crisis Tendencies and the Rate of Profit

Weisskopf (1979) developed a methodology in which the average rate of profit is expressed as the product of several factors, each of which is interpreted as reflecting a particular Marxist crisis tendency. He used this approach to determine which of several possible crisis tendencies, including the reserve army effect and underconsumption, was the operative one in the U.S. economy from 1950-79.<sup>9</sup> This paper follows an approach similar to that of Weisskopf (1979), although with some differences.<sup>10</sup>

Most Marxist analysts have considered the rate of profit to be the key factor in economic crises.<sup>11</sup> The central role of the profit rate is due to its impact on capital accumulation, which is believed to be sensitive to changes in the rate of profit. In the U.S. national income and product accounts, the variable investment is the closest approximation to the Marxist concept of capital accumulation.<sup>12</sup> In the U.S. economy, economic crises have always begun with a decline in investment. In the 9 recessions since the start of the period of regulated capitalism in the U.S., real gross private domestic investment declined in the first year of all 9 recessions, by an average of 7.6 per cent.<sup>13</sup> By contrast, consumption rose slowly in 7, and fell slightly in 2, of the 9 recessions. Government purchases rose in 7 of the 9 recessions, falling significantly (by 6.8 per cent) only in the 1954 recession after the Korean War had ended (U.S. Bureau of Economic Analysis, 2006, Table 1.1.1).<sup>14</sup>

In the typical economic expansion, the rate of profit reaches a peak and then declines prior to the crisis. As will be shown in the following section, the rate of profit for the nonfinancial corporate business sector in the U.S. economy declined in advance of every business cycle peak since 1950, except for the 1981 peak when the profit rate reached its maximum at the time of the peak.<sup>15</sup> This pattern is consistent with the view that a declining profit rate eventually sets off the crisis by causing a decline in investment

There are various ways to define the rate of profit. All forms of the rate of profit are a ratio of some measure of profit or surplus value to some measure of capital, traditionally expressed as a percentage per year and often represented by the symbol  $r$ . A broad version of  $r$  is often used in Marxist analyses, in which total surplus value -- measured before taxes and including profit, interest, and rent -- is in the numerator, while the total non-residential capital stock is in the denominator. For some purposes, this is the most suitable form of  $r$ . However, in this paper we are interested in  $r$  as a determinant of business investment. For this purpose, a narrower form of  $r$  is appropriate.

We define  $r$  as

$$r = \frac{R}{NW}$$

where

$r$  = rate of profit

$R$  = after-tax profit (after payment of interest)

$NW$  = net worth (at market value)

The rate of profit is for the nonfinancial corporate business sector of the U.S. economy (see appendix).<sup>16</sup>

After-tax profit measures the part of surplus value that is received by capitalist firms after paying their costs (including interest payments on borrowed funds) and taxes. Net worth is total assets less debt, which measures the part of the value of the firm's capital that represents the accumulated past investment by the firm's owners. The remainder of the value of the firm's capital represents borrowed funds. If the firm's owners are regarded as the investment decision-makers, then after-tax profit in relation to the capital advanced by the firm's owners is the appropriate concept of  $r$ . If  $r$  measured in this manner is rising, this should encourage investment, while if  $r$  is falling, capitalists will eventually reduce investment while waiting for profitability to improve.<sup>17</sup>

The rate of profit as defined above can be expressed as the product of four variables:

$$r = \frac{R}{Y} \times \frac{Y}{TA} \times \frac{TA}{A} \times \frac{A}{NW} \quad (1)$$

where

$Y$  is net output or income

$TA$  is tangible assets (at market value)

$A$  is total assets (at market value)

Note that equation (1) is an identity.

The first ratio in equation (1),  $R/Y$ , is the profit share of income. A decrease in the profit share would reduce  $r$ , if the other three ratios are given. The second,  $Y/TA$ , is the ratio of output to tangible assets, whose variation over short periods of time indicates mainly changes in the degree of utilization of the stock of means of production.<sup>18</sup> A decline in  $Y/TA$  would reduce the rate of profit. This relationship seems intuitively clear in that a decreasing rate of utilization of the capital stock would, all else equal, reduce the rate of profit on that capital stock.

The third ratio in equation (1),  $TA/A$ , reflects the share of financial assets in total assets. This can be seen by expressing  $TA/A$  as follows:

$$\frac{TA}{A} = \frac{A - FA}{A} = 1 - \frac{FA}{A}$$

where

$FA$  = financial assets (at market value)

If the share of financial assets in total assets increases, this reduces  $TA/A$  which reduces the rate of profit. The intuitive meaning of this relationship may be less obvious. If the ratio of  $Y/TA$  is given, then an increase in  $FA/A$  means a reduction in  $TA/A$  which must lower the ratio of profit to total assets, if the other 3 ratios are given.

The fourth ratio in equation (1),  $A/NW$ , represents the degree of leverage. This can be seen by expressing  $A/NW$  as follows:

$$\frac{A}{NW} = \frac{NW + D}{NW} = 1 + \frac{D}{NW}$$

where  
D = debt.

The ratio D/NW is a measure of leverage. If D/NW falls, the rate of profit falls. This is intuitively clear, since a decrease in leverage means that NW is a larger percentage of assets, so that given the ratio of profit to assets, the ratio of profit to NW would fall.

This kind of analysis of the determinants of the rate of profit is based on an identity. An identity cannot explain causation. However, it can be used for a kind of accounting procedure. The sum of the percentage changes in the four right-hand variables must add up approximately to the percentage decline in  $r$ .<sup>19</sup> Suppose the rate of profit declines by 10 per cent over a period. If R/Y declined by 5 per cent over that period, one can say that the decline in R/Y directly accounted for half of the decline in  $r$ .<sup>20</sup>

To fully understand the factors underlying a decline in the rate of profit, it is helpful to look behind declines in the profit share. The first ratio above, R/Y, can be further analyzed as follows:

$$\frac{R}{Y} = 1 - \frac{W}{Y} - \frac{T}{Y} - \frac{i}{Y} \quad (2)$$

where  
W = employee compensation (including employer-paid benefits)  
T = taxes on profits plus indirect taxes  
i = interest paid

Like equation (1), equation (2) is an identity, since total output/income is divided up on the income side among profits, wages, taxes, and interest.<sup>21</sup>

The relation expressed in equation (2) is an additive identity rather than a multiplicative identity. For an additive identity, the sum of the absolute changes in the right-side variables over a period exactly equals the absolute change in the left-side variable. Hence, the most useful way to analyze the change in the profit share is using the concept of "contributions," where the contribution to the change in the profit share of each variable on the right side of equation (2) is the absolute change in that variable over the period divided by the absolute change in the profit share, expressed as a percentage (see appendix). The sum of the contributions of the right-side variables is exactly 100 per cent, apart from rounding errors (see appendix).<sup>22</sup>

As for equation (1) for the rate of profit, equation (2) is an identity, and strictly speaking the contribution of each right-side variable to the change in the profit share represents a kind of accounting rather than necessarily a cause. If the change in the wage share contributes 80 per cent of the change in the profit share over a period, that means that, had the wage share remained unchanged over that period while the other right-side variables had changed as they actually did, then the change in the profit share would have been smaller by 80 per cent over that period.<sup>23</sup>

Since changes in the wage share are the basis of the reserve army crisis tendency, we will examine the underlying factors behind a change in the wage share. The wage share can be expressed as the product of three underlying variables: the real wage, the reciprocal of output per worker, and the ratio of the consumer price index to the output price deflator, based on the following

relationship:

$$\frac{W}{Y} = \frac{w_R \times \left( \frac{CPI}{P_Y} \right)}{Y_R / N} \quad (3)$$

where

$w_R$  = real wage per worker (nominal employee compensation per worker deflated by the CPI)

CPI = consumer price index

$P_Y$  = price index for the output of the nonfinancial corporate business sector

$Y_R$  = real output of the nonfinancial corporate business sector (deflated by  $P_Y$ )

$N$  = number of full-time equivalent workers

Note that  $Y_R/N$  is the real output per worker.

Alternatively, equation (3) can be rewritten as

$$\frac{W}{Y} = \frac{w_p}{Y_R / N} \quad (3')$$

where

$w_p$  = product wage per worker (nominal employee compensation per worker deflated by  $P_Y$ )

See the appendix for the derivation of equations (3) and (3') and further explanation of the above variables.

Equations (3) and (3') show that the effect of changes in the real wage and productivity on the wage share (and hence on the profit share) is more complex than one might suppose. From equation (3'), the percentage change in the wage share over a period is approximately equal to the percentage change in the product wage minus the percentage change in output per worker. That is, if the product wage rises faster (slower) than output per worker, the wage share will rise (fall).

However, workers are concerned with their real wage, not their product wage, since they do not consume a representative basket of goods drawn from the output of the nonfinancial business sector. The appropriate price deflator for the nominal wage, to indicate the buying power of the wage, is the consumer price index, which is based on a representative basket of goods purchased by urban consumers (known as the CPI-U). The goods covered by the two price indexes, CPI and  $P_Y$ , differ in a number of ways including that consumers purchase imported consumer goods, which are not in the basket for computing the output price index, and they do not purchase capital goods, which are in the basket for computing the output price index<sup>24</sup>.

Equation (3) has three terms on the right side. From that equation, the percentage increase in the wage share of output over a period is approximately equal to the sum of the percentage increase in the real wage and the percentage increase in the ratio  $CPI/P_Y$  minus the percentage increase in output per worker. Thus, the relation between the real wage and output per worker does not uniquely account for the change in the wage share. If the real wage rises faster than output per worker, then unless the ratio  $CPI/P_Y$  falls by enough to counteract the changes in the real wage and output per worker, the wage share would rise. On the other hand, the wage share can rise even if the real wage

rises no faster than output per worker, if the ratio  $CPI/P_y$  is rising.

In section 1 it was argued that in regulated capitalism the typical cause of crises was the reserve army effect, while in neoliberal capitalism one would expect crises to be caused by a shortfall of demand relative to output due to underconsumption, excessive competition, or the effect of asset bubbles. Weisskopf (1979) viewed the reserve army crisis tendency (which he called "the rising strength of labor") as one that would be indicated by a decline in the profit share, while a shortfall of demand relative to output should show itself in a decline in the rate of capacity utilization as firms cut back production in response to inadequate demand.

To measure the rate of capacity utilization, Weisskopf (1979) used the ratio of actual output to "full capacity output." However, the variable "full capacity output" is not found directly in any government data source, and it has both conceptual and empirical problems. Since we are not examining long-run movements in the rate of profit, the ratio  $Y/TA$  appears to be a better choice for representing changes in capacity utilization.<sup>25</sup>

How can the four crisis tendencies cited above be identified in the movement of the determinants of the profit rate? Weisskopf's identification of a shortfall in demand relative to output entirely with a decline in capacity utilization encounters a problem if one considers applying it to neoliberal capitalism. He offered the following argument to explain why a demand shortfall should be reflected by a decline in capacity utilization:

... inadequacy of demand obliges capitalists to restrain either their production levels or their output prices ... Given the institutional constraints on price reduction that operate in many sectors of contemporary capitalist economies, capitalists can be expected to deal with inadequate demand primarily by cutting back production and consequently lowering the average rate of capacity utilization ... (Weisskopf, 1979, pp. 346-7)

Weisskopf's observation about constraints on price reduction were fully applicable to the regulated capitalist era about which he was writing, but it is not applicable to the neoliberal era. In the neoliberal era the old price leadership model has been replaced by intense price competition. As a result, while a realization problem might partially show up as a decline in capacity utilization, it can also appear in pricing behavior.

The change in pricing behavior in the neoliberal era makes it more complex to identify the above-mentioned crisis tendencies in the movement of the profit rate and its determinants. Consider the relation between capital and labor as they struggle over wages and profits. Labor should be concerned, first of all, with its real wage. The real wage depends on the movement of the money wage relative to the consumer price index. A rising real wage is made possible by rising real output per worker (or, as it is often called, labor productivity). Some trade unions cite the rate of increase in labor productivity in setting a target for real wage growth, arguing that labor's real reward should rise as fast as real output per worker. The extent of workers' bargaining power might be indicated by the relation between real wage growth and labor productivity growth. If the real wage rises faster than productivity growth, labor is getting the upper hand over capital, while if the real wage rises more slowly than productivity growth, capital has the upper hand.

However, capital is concerned with the wage share, which directly affects the rate of profit. As equation (3) shows, the wage share depends on a three-way relation between the real wage, real output per worker, and the ratio of the consumer price index to the output price index. The wage



share is determined both by capital's relation with labor, indicated by the relation between the real wage and real output per worker, and by capital's pricing power, which affects the denominator of the price index ratio. Capital's pricing power is affected by the adequacy of total demand in relation to output and by the extent of competition among capitalists.

In light of the above considerations, we will interpret the four crisis tendencies in relation to the movement of the determinants of the profit rate as follows:

1) Reserve Army Effect: We will regard this crisis tendency as indicated by a decline in the profit rate prior to a recession that stems from a rise in the wage share which, in turn, results from the real wage rising faster than output per worker.<sup>26</sup>

2) Underconsumption: We will consider the underconsumption crisis tendency to be indicated by the joint occurrence of a declining  $Y/TA$  and a rising profit share prior to a recession. The concept of underconsumption is based on a rising profit share as the cause of the realization problem, so a rising profit share must be part of the evidence for underconsumption. The evidence that the rising profit share is causing a crisis due to underconsumption would be confirmed by a declining  $Y/TA$ . The crisis would be set off by the declining  $Y/TA$  outweighing the rising  $R/Y$  in equation (1), causing  $r$  to fall.

3) Excessive Competition: We will consider the excessive competition crisis tendency to be indicated by the following two movements in the profit rate determinants resulting in a decline in the rate of profit prior to a recession: a) declining  $Y/TA$ , and b) declining  $R/Y$  due to a rising ratio  $CPI/Py$  while the real wage is rising no faster than output per worker. The former indicates reducing output relative to capacity in response to a demand shortfall, while the latter indicates the effect of the demand shortfall being exhibited by an inability by capital to raise output prices fast enough to prevent the profit share from falling despite the lack of power by labor to increase the real wage faster than productivity growth. That is, we are assuming that the shortfall of demand relative to output resulting from excessive competition would cause both a quantity effect and a price effect.

4) Speculative Bubble Effects: A speculative bubble has two effects, described above, that are relevant here. First, the speculative bubble tends to cause exaggerated expectations of future profitability, which lead to excessive investment. This would produce the same movement of the determinants of the profit rate as are caused by the excessive competition crisis tendency. Second, the prolonged elevated levels of both consumption and investment set off by a speculative bubble are likely to cause, once the bubble bursts, a long-lasting decline in investment. Hence, the indication that this crisis tendency is the operative one is a combination of a) the presence of a speculative bubble during the expansion; b) the same profit rate determinant movements prior to the recession described under the excessive competition crisis tendency above; and c) a prolonged decline in investment following the collapse of the bubble. Chart 1 summarizes the empirical identification of each of our four crisis tendencies, as described above.

[Place Chart 1 about here]

### **3. Evidence about Crisis Tendencies during 1949-2000**

Figure 1 shows the movements of the profit rate in the U.S. during 1949-2005 in relation to the expansions and recessions of that period. The data in Figure 1 and for the tables that will follow are for annual rather than quarterly data, for reasons explained in the appendix. There were 9

complete expansions during this period: 1949-53, 1954-57, 1958-60, 1961-69, 1970-73, 1975-79, 1980-81, 1982-90, and 1991-2000. The average expansion lasted 4.2 years, with the longest the 9-year expansion from 1991-2000 and the shortest the one-year expansion of 1980-81.<sup>27</sup>

[Place Figure 1 about here]

Figure 1 shows that, with two exceptions, the rate of profit rose in the early part of each expansion and fell in the later part of the expansion.<sup>28</sup> The two exceptions are the expansions of 1949-53 and 1980-81. In the 1949-53 expansion the rate of profit fell continuously from the start of the expansion. In the short, one-year-long expansion of 1980-81, the profit rate rose up to the peak of the expansion, only falling after the peak.<sup>29</sup> The peculiarities of these two expansions resulted from actions by the state, which are discussed below. Figure 1 also shows that the rate of profit fell further in every recession except that of 1954 and 1961.

Table 1 shows the movement of the four determinants of the profit rate, based on equation (1), during the period of profit rate decline in each expansion (except that the one-year expansion of 1980-81 is included despite the rise in the profit rate in that entire expansion). Column 1 shows the percentage change in the profit rate in each period. The late-expansion decline in the profit rate ranged from 9.99 per cent in 1972-73 to 46.49 per cent in 1997-2000. In 1980-81 the profit rate rose sharply, by 36.26 per cent.

[Place Table 1 about here]

Column 2 shows the percentage change in the profit share in each period. Note that a decline in the profit share directly accounts for all or most of the decline in the profit rate in every period showing a profit rate decline.<sup>30</sup> However, by itself this does not yet tell us which crisis tendency was operating in any of the periods.

Column 3 shows the percentage change in the ratio of output to tangible assets, which is our measure of changes in capacity utilization. This variable contributed significantly to the decline in the rate of profit in three expansions: 1955-57 when it directly accounted for 37.9 per cent of the profit rate decline, 1988-90 when it directly accounted for 9.8 per cent of the profit rate decline, and 1997-2000 when it directly accounted for 9.2 per cent of the profit rate decline.

Column 4 shows the change in our measure of financialization of the nonfinancial sector. In 1988-90 and 1997-2000 the ratio of tangible assets to total assets declined significantly, directly accounting for 13.4 percent of the profit rate decline in 1988-90 and 16.5 per cent in 1997-2000. Column 5 shows that the leverage indicator, total assets over net worth, did not contribute significantly to the decline in the rate of profit in any of the expansions, although increasing leverage significantly reduced the profit rate decline in 1965-69 and 1988-90.

Table 2 shows the contributions to the change in the profit share during each late expansion from changes in the shares of wages, taxes, and interest payments, based on equation (2). Note that positive numbers indicate that a variable tended to change the profit share in the direction in which it actually changed, while a negative number means that the variable worked against the actual change in the profit share. The change in the wage share accounted for all, or most, of the change in the profit share in every period. However, there are 3 expansions in which one or both of the other two variables had a significant impact on the profit share. In 1949-53 a rising tax share accounted for almost half of the decline in the profit share, as special Korean War taxes cut into after-tax profits. In

1972-73 rising taxes and rising interest payments together accounted for almost one-third of the profit share decline. And in 1988-90 the contribution of rising interest payments to the decline in the profit share was almost as great as that of the rising wage share.

[Place Table 2 about here]

Table 3 shows the changes in the real wage, output per worker, and the price ratio CPI/Py for each of the periods, based on equation (3). Note that, unlike in Tables 1 and 2, in Table 3 the changes in variables are presented as annual compounded percentage rates of change. The reason for this difference is that it is customary for changes in the real wage and labor productivity to be presented as an annual rate of change, while there is no such custom for the variables in tables 1 and 2.

[Place Table 3 about here]

Table 3 shows that the real wage rose faster than output per worker in every late expansion from 1949-53 through 1972-73. That includes every expansion of the regulated capitalist era. During that period the ratio CPI/Py rose in 4 out of 5 late expansions but at less than 1 per cent per year in each case. For every late expansion from 1977-79 through 1997-2000, output per worker rose faster (or fell more slowly) than the real wage. The rising wage share in 1977-79, 1988-90, and 1997-2000 was entirely due to an approximately 2 per cent per year increase in CPI/Py in each case.<sup>31</sup>

### *Crisis Tendencies in the Regulated Capitalist Era*

We are now ready to determine which crisis tendency, or tendencies, are associated with each late expansion in our sample. Chart 2 summarizes the findings. The first five late expansions, which are the five that occurred during the regulated capitalist period, all fit the characteristics of the reserve army crisis tendency, with one minor qualification: the 1970-73 expansion was followed by a long depression in investment. However, in all five late expansions the real wage rose faster than labor productivity, leading to a rising wage share, a falling profit share, and a falling rate of profit. The reserve army crisis tendency itself should not cause a long decline in investment, but we will argue below that certain historically specific factors following the 1973 peak explain the long decline in investment that followed. Thus, our expectation regarding which crisis tendency would be the acting in the regulated capitalist era has been substantially confirmed by the data.

However, other factors also were present in some cases. As was noted above, the 1949-53 expansion was atypical in that the rate of profit fell continuously from the start of the expansion. This expansion was dominated by the effects of the Korean War of 1950-53, which had a much larger impact on the economy than the Vietnam War of the following decade. In 1950, the first year of the expansion, the wage share fell as normally occurs at the start of an expansion. However, this did not lead to an increase in the profit share (and the profit rate), because in 1950 the start of the Korean War led to a increase in the tax share of income (by 22 per cent), which outweighed the falling wage share. This explains the unusual decline in the rate of profit in the first year of the expansion. In 1950-53 the wage share rose each year, as the real wage rose faster than labor productivity, consistent with the reserve army effect. However, as table 2 shows, over the whole period of a declining profit share from 1949-53, the rising tax share accounted for almost as much of the declining profit share (47.6 percent) as did the rising wage share (53.3 per cent), although the impact of the increase in the tax share of income was mainly felt in 1950, after which the rising wage share accounted for all of the further decline in the profit share (U.S. Bureau of Economic Analysis,

2006, Table 1.14).

The occurrence of a four year long expansion despite a continuously falling profit rate is explained by the government expenditure effects of the Korean War. Government purchases rose during 1950-53 at the rate of 20.8 per cent per year, due to the rapid increase in military spending. This expansion was a classical military-Keynesian expansion, with output growing due to the impact of rising military spending, despite a declining rate of profit. Once the war ended and government purchases declined in 1954, the reserve army crisis tendency asserted itself as nonresidential investment declined by 2.1 per cent.

The 1954-57 expansion had a significant decline in capacity use in its last two years, which contributed to the profit rate decline, directly accounting for 37.9 per cent of the profit rate decline (calculated from table 1). This suggests that there was excess capacity created relative to demand, which may explain the unusually large one-year drop by 11.0 per cent in nonresidential fixed investment in 1958. However, the main crisis tendency at work appears to be the reserve army mechanism -- the falling profit share, due to real wages rising much faster than labor productivity, directly accounted for 73.3 per cent of the profit rate decline during the late expansion. We do not have any explanation to offer for the sizeable reduction in capacity utilization in the later part of this expansion.

In the later part of the long 1961-69 expansion, rising interest costs accounted for about one-fifth of the decline in the profit share (table 2). However, the major factor was the rising wage share, which was due to the real wage rising significantly faster than labor productivity.

In the last expansion of the regulated capitalist era during 1970-73, the real wage rose faster than productivity, but the resulting rise in the wage share accounted for only about two-thirds of the fall in the profit share (table 2). The other one-third was accounted for by rising taxes and rising interest payments relative to income. The 1970-73 expansion reached its peak in the year that marked the beginning of the collapse of regulated capitalism. The resulting economic instability, including the final collapse of the Bretton Woods monetary system, the first big oil price increases, waves of currency speculation, and rising inflation, may explain why nonresidential fixed investment remained depressed for three years following the peak, until 1977.<sup>32</sup>

### *Crisis Tendencies after the Regulated Capitalist Era*

There have been four complete expansions since the end of the regulated capitalist era in 1973. Since labor productivity rose faster than the real wage in every case, none of these expansions fits the requirements for the reserve army crisis tendency. Also, in none of these expansions are the data consistent with the underconsumption crisis tendency. There was no case of declining capacity use outweighing a rising profit share, resulting in a declining profit rate. The 1980-81 expansion fits four of the five requirements for underconsumption: rising profit share, falling wage share, real wage rising slower than productivity, and falling capacity use (although only by 0.54 per cent). However, the rising profit share outweighed the falling capacity use, resulting in a steeply rising profit rate.

Three of the four expansions in this period -- those of 1975-79, 1982-90, and 1991-2000 -- show the characteristics associated with the excessive competition crisis tendency. That is, the rate of profit and the profit share declined, capacity use declined, the wage share rose, and labor productivity rose faster than the real wage (with the rise in the ratio CPI/Py accounting for all of the increase in the wage share).

In addition, the expansion of 1991-2000 shows the features of the asset bubble effects crisis tendency. There was a huge asset bubble in the stock market during 1995-2000, which burst in the late summer of 2000. There followed a large and long-lasting depression in nonresidential fixed investment following the business cycle peak. The change in nonresidential fixed investment was -4.2 per cent in 2001, -9.2 per cent in 2002, and 1.0 per cent in 2003. Nonresidential fixed investment was still below its 2000 peak in 2005, five years after the business cycle peak (U.S. Bureau of Economic Analysis, 2006, Table 1.1.1). It is also noteworthy that our measure of capacity use, Y/TA, declined every year during the three-year long period of profit rate decline.<sup>33</sup>

The expansion of 1980-81 does not show the characteristics of any of the four crisis tendencies. It was an atypical expansion in that the rate of profit rose during the entire expansion and it was also a very short expansion, lasting only 12 months. A rising profit share directly accounted for all of the rise in the profit rate in 1981, and a falling wage share accounted for all of the rise in the profit share. The decline in the wage share resulted from a 0.9 per cent decline in the real wage while labor productivity rose by 2.76 per cent, far outweighing the 1.03 per cent rise in CPI/Py (table 3). Thus, this short expansion shows the capital-labor dynamics associated with a weak bargaining position for labor, which is normal in the first year of an expansion -- and in that year (1981) the unemployment rate was a high 7.6 per cent and it was also the year in which the Reagan Administration broke the air traffic controllers' strike.

It appears that the 1980-81 expansion was cut short by monetary policy. During the twelve months of the expansion, from July 1980 to July 1981, the Fed raised the federal funds rate from 9.03 per cent to 19.04 per cent, driving the bank prime rate up from 11.48 per cent to a record 20.39 per cent and the 30-year conventional mortgage rate from 12.19 per cent to 16.83 per cent (and to 18.45 per cent in October 1981) (U.S. Federal Reserve System, 2006, H.15). This stopped the expansion, as nonresidential fixed investment fell by 3.8 per cent and residential investment by 18.2 per cent in 1982 (U.S. Bureau of Economic Analysis, 2006, Table 1.1.1).

The other three expansions since the end of regulated capitalism showed the features of the excessive competition crisis tendency, with the 1991-2000 expansion also being consistent with the asset bubble effects crisis tendency. However, two of those three expansions had other factors present that should be noted.

The 1988-90 late expansion shows evidence that rising interest costs also played a role in the cause of the crisis. As table 2 shows, the rising wage share during 1988-90 contributed 68.3 per cent of the fall in the profit share, but a rise in the interest share contributed 57.7 per cent of the fall in the profit share (the contribution of the tax share of income was -16.1 per cent). Thus, the rising interest share was almost as large a factor as the rising wage share.

The role of rising interest costs during 1988-90 appears to stem from two factors. First, as table 1 shows, our measure of leverage, total assets over net worth, rose by 3.95 per cent over the period, which means that debt rose as a percentage of total assets. Second, starting in October 1986, the Fed began tightening, driving the federal funds rate up from 5.85 per cent in that month to 9.85 per cent in March of 1989, while the bank prime rate rose from 7.5 per cent to 11.5 per cent over that period. The Fed eased somewhat after March 1989, bring the federal funds rate down from 9.85 per cent to 7.31 per cent by December 1990, while the bank prime rate fell to 10 per cent. Despite the easing, the prime rate was significantly higher in 1989 and 1990 than it had been previously, and the average prime rate was somewhat higher in 1990 (10.01 per cent) than it had been in 1988 (9.32 per

cent) (U.S. Federal Reserve System, 2006, H.15).

The expansion of 1975-79 took place in the transition period between regulated capitalism and neoliberal capitalism. The neoliberal transformation, which produced the conditions that led to the expectation of a change in the effective crisis tendency, had not yet taken place as of 1979. From table 3 we can see that both the real wage and labor productivity declined in 1977-79, with the real wage declining slightly faster than labor productivity. Two factors may account for this relationship between the real wage and productivity. First, despite 4 years of economic expansion, the unemployment rate fell to only 5.8 per cent in 1979, much higher than at the typical business cycle peak of the regulated capitalist era. Thus, the reserve army was still relatively well filled during 1977-79. Secondly, in 1979 there was the second round of large oil price increases, and with it a 13.3 per cent increase in the CPI, its largest one-year increase in the entire postwar era.<sup>34</sup> This sharp increase in the CPI would tend to reduce the real wage, given the lags in wage bargaining. It also may help explain the large 2.10 per cent annual increase in the ratio CPI/Py during 1977-79, which lay behind the rising wage share and falling profit share in those years, as firms in the U.S. nonfinancial corporate business sector were unable to raise output prices to keep up with the galloping consumer price index.

#### **4. Concluding Comments**

We found that all five economic expansions during the regulated capitalist era in the U.S. showed evidence of the reserve army crisis tendency, although in the first of those expansions powerful military Keynesian factors were also operating which produced some atypical features in the expansion, and the last expansion of the period was followed by a long decline in investment not predicted by the reserve army crisis tendency. The one expansion during the transition period between regulated capitalism and neoliberal capitalism, that of 1975-79, showed the features of the excessive competition crisis tendency as defined in Chart 1, but the surrounding economic conditions of that transition period -- economic instability and persistent high unemployment -- suggest that may be a false reading.

The first expansion of the neoliberal era in 1980-81 was atypical, as was the first expansion of the regulated capitalist era. It fit none of the four crisis tendencies considered in this study. The characteristics of that expansion -- its brevity and the ending of the expansion while the profit rate was still rising -- appear to result from the draconian monetary policy of that period, itself a part of the initiation of the neoliberal era. The remaining two expansions of the neoliberal era, 1982-90 and 1991-2000, both showed evidence of the excessive competition crisis tendency, while the 1990s expansion also showed evidence of the asset bubble effects crisis tendency.<sup>35</sup>

Thus, this study suggests that the operative crisis tendency, or tendencies, are affected by the institutional structure of capitalism in a given period. When the institutional structure undergoes a major change, as has happened periodically in capitalist history, the dominant crisis tendency also may change. While analyzing the features of a new institutional form of capitalism may suggest what the main crisis tendency or tendencies may be, it requires empirical investigation to provide a more compelling answer.

Neoliberal capitalism differs from regulated capitalism along several dimensions, including a change in capital-labor relations, in capital-capital relations, and in the role of the state in the economy. Of the three crisis tendencies we initially considered likely to play a role in the neoliberal era, each was associated with different aspects of the institutional features of neoliberalism.

Underconsumption is related to the weak bargaining position of labor relative to capital. Excessive competition is associated with the change in capital-capital relations. Asset bubbles emerge from a combination of the high degree of inequality of income and a relative shortage of productive investment opportunities, both of which are related to both the change in capital-labor relations and the state's withdrawal from active regulation of the economy. Hence, the crisis tendencies that we have found to be operative in the neoliberal era involve all three of the changed features.

The reserve army crisis tendency is a strongly self-correcting one. While crises were frequent in the regulated capitalist era, they were relatively brief and mild, since the crisis restores the reserve army and creates the conditions for renewed accumulation. A severe crisis did not hit the U.S. economy in the postwar period until regulated capitalism went into crisis around 1973, followed by the severe recessions of 1974-75 and 1980-82, with the latter considered by some to be a three-year long crisis period.

The two complete expansions to date of the neoliberal era were quite long, lasting 8 and 9 years. However, the crisis tendencies that appear to be operative in the neoliberal era do not have such obvious quick-acting self-correction mechanisms. The recovery from the recession of 1991 was a sluggish one which did not produce rapid growth again until 1996, despite a high technology investment boom that began in the early 1990s. The recovery from the 2001 recession, which included several years of depressed investment, was a product of highly expansionary monetary and fiscal policies entailing very rapid expansion of government and private debt (Kotz, 2006).

The last great depression in the U.S. emerged from the liberal institutional structure of the 1920s. Whether the current neoliberal structure harbors the possibility of another great depression is uncertain. The role and size of the state is greatly altered today compared to 1929, so history is unlikely to repeat itself exactly. However, it can be argued that even today a neoliberal form of capitalism harbors the possibility of a much more severe economic crisis than is possible in a regulated form of capitalism.

The decline in the profit share, despite real wages rising more slowly than productivity, which has occurred in the last two late expansions, raises a question of interpretation. When the reserve army crisis tendency is operating, it is clear why the profit share is reduced -- the surplus value created is reduced as real wages rise relative to labor productivity, implying a falling rate of exploitation. However, in neoliberal capitalism we have found that the profit share falls due to a rising wage share despite real wages that are rising more slowly than productivity, which implies a rising rate of exploitation. Where does the extra surplus value being created by labor go, if it is not going to the capitalists in the nonfinancial corporate business sector?

Taxes do not figure into the wage share equation (3), so it does not appear that the additional surplus value is going to the state. The additional surplus value created under such conditions must be transferred to some other group or class. The answer to this question should be sought in an analysis of the obscure price ratio,  $CPI/Py$ . This price ratio has played an important role in the profit rate analyses in previous studies, such as Bakir and Campbell (2006), Wolff (2001) and Weisskopf (1979). However, the previous studies did not offer any economic interpretation of movements in that price ratio. A consideration of the differences in the baskets of goods on which the two price indexes are based suggests that a rise in  $CPI/Py$  indicates, and in fact produces, a shift in surplus value from capitalists in the nonfinancial corporate business sector to rent-receivers.

The index  $Py$  is based on all the goods and services produced by the nonfinancial corporate business sector, weighted by the proportions in which they are produced. The CPI is based on the

basket of goods consumed by the average urban household, a basket which is made up mainly of housing (42.1%), transportation (16.9%), food and beverages (15.4%), medical care (6.1%), education and communication (5.9%), recreation (5.9%), and apparel (4.0%).<sup>36</sup> A substantial part of the CPI ultimately represents land rents (embodied in housing and food prices) and energy rents.<sup>37</sup> When the ratio  $CPI/P_y$  rises, this may reduce the profits of capital in the nonfinancial corporate business sector through a transfer of surplus value from capitalists in that sector to rent receivers. This transfer occurs through the pricing system, as capitalists in the nonfinancial corporate business sector are unable to raise the prices of their goods as rapidly as those they have to "pay for" for their workers, with the latter reflecting the rise in the prices of land-rent-intensive and energy-rent-intensive goods in the CPI.

However, there is also a technical difference between the two price indices. The CPI is a fixed weight price index, calculated based on weights for its component commodities in a fixed time period, while  $P_y$  is a chained price index, for which the commodity weights change each year as the production/sales mix changes. If the CPI were also a chained price index, it would be likely to rise more slowly in periods of rising prices, as consumers shift purchases toward goods whose price rises less than the average. Hence, the movement in the ratio of the two price indices may partly be a result of this technical difference between them. Further research into the two price indexes is required before any definitive conclusion can be drawn on this point.<sup>38</sup>

A final caution about the methodology of this study is in order. The crisis tendencies under consideration in this paper all derive from an analysis of capitalism at a relatively high level of abstraction. Some important features of an actual capitalist system are omitted from the theoretical analysis, including specific interventions by the state in the economy. While such interventions were taken into account in a few cases (such as the effects of the Korean War), the paper does not systematically take them into account.

However, the empirical data used in the paper are undoubtedly affected by state interventions as well as by underlying crisis tendencies, which makes it difficult to clearly see the effects of the crisis tendencies in the empirical data. This problem is present in any attempt to hold up theoretical propositions against empirical evidence in economics, and no one has figured out a satisfactory way to avoid this problem. It does suggest that the kind of empirical evidence presented in this paper must be treated cautiously, with awareness that it is always possible that factors left out of the analysis, such as state interventions or other factors, might have affected the data in ways that led to misleading inferences from the data in some cases.



## Appendix

### 1. The Rate of Profit

The rate of profit used in this paper, defined in equation (1), is the after-tax profit of the nonfinancial corporate business sector, as a percentage of the net worth (at market value) of that sector. The nonfinancial corporate business sector is the only broad private sector category for which data are available for net worth and tangible assets, from the Federal Reserve. Data for fixed assets are available for the entire corporate business sector, from the Bureau of Economic Analysis, but those data have three disadvantages: 1) inventories are omitted from the measure of the capital stock; 2) no measure of net worth is available for that sector; and 3) there are conceptual problems with combining the financial and nonfinancial sectors for both the measure of capital invested and profit.

However, the financial sector has been growing relative to the nonfinancial sector. By 2000 the gross value added of the financial sector was 12.9 % of the total gross value added of the entire corporate business sector (U.S. Bureau of Economic Analysis, 2006, Table 1.14). A significant part of nonresidential fixed investment is done by the financial sector. However, the advantages of excluding the financial sector seem to outweigh the problems associated with its exclusion.

The nonfinancial corporate business sector includes retail and wholesale trade, which are not considered to be productive of value and surplus value in Marxist theory. However, it was not possible to separate them from the rest of the nonfinancial corporate business sector, and in any event our definition of the rate of profit is not intended to have surplus value in the numerator but rather the flow that appears as profit for nonfinancial capitalist firms that may use such profits for investment.

Our stock variables (net worth, tangible assets, and total assets) are actually for the nonfarm part of the nonfinancial corporate business sector, since that is what the Fed reports, while the flow variables from the Bureau of Economic Analysis, such as profit and output, are for the entire nonfinancial corporate business sector. This introduces an error, but a small one: in 1949, our first data year, the agricultural sector contributed 9.1 per cent of the total value added in nonfinancial corporate business, and it declined steadily to 1.5 per cent in our last data year 2000 (U.S. Bureau of Economic Analysis, 2006). Furthermore, a large part of the agricultural sector is noncorporate, and it is likely that that share was particularly large in the early part of our period, which reduces the distortion in our variables from excluding the farm sector for the asset values.

### 2. Factors Affecting the Rate of Profit

Equation (1) decomposes the rate of profit into four factors:  $R/Y$ ,  $Y/TA$ , and  $TA/A$ , and  $A/NW$  (see text for definitions). This is an identity, and one cannot infer causal relations from an identity. However, one can use an identity for a kind of accounting of the contributions of the factors to changes in their product. This can be done by calculating the percentage rate of change over a period in each of the above three factors and dividing each factor's percentage rate of change by the percentage rate of change in the rate of profit. The resulting percentages can be regarded as indicating the "direct contribution" of change in each factor to the change in the rate of profit. The sum of these direct contributions will add to approximately 100 per cent. However, the direct contributions do not in general exactly add to 100% because the interaction terms among the three factors also contribute to the change in the rate of profit. If all interaction terms were included, the contributions would add to 100%.

Equation (2) for the profit share,  $R/Y$ , is based on the income identity -- that is, total income equals the sum of the kinds of income into which it is divided, which in this case includes profit, interest, and taxes (omitting the small category of business transfer payments). Because equation (2) is an additive identity, the absolute change in the profit share is equal to one minus the sum of the absolute changes in the wage share, tax share, and interest share. Hence, the "contributions" of the right-side variables to the change in the profit share, defined as the absolute change in a right-side variable divided by the absolute change in the profit share over a period, must sum to 100 per cent. There are no interaction terms for an additive identity.

Equation (3) decomposes  $W/Y$  into three factors, which is similar to equation (1). Equation (3) is derived as follows (see text for the definition of variables):

$$\frac{W}{Y} = \frac{(w_R * N * CPI)}{(Y_R * Py)} = \frac{w_R * (CPI/Py)}{Y_R/N}$$

Equation (3') is derived as follows:

$$\frac{W}{Y} = \frac{w_p * N * Py}{Y_R * Py} = \frac{w_p}{Y_R/N}$$

The variable  $W$  is employee compensation, which includes the compensation of all wage and salary employees in the nonfinancial corporate business sector. Thus, even corporate managers are included. In the neoliberal era, this variable  $W$  rises faster than the wages of production workers. It would be desirable to break down  $W$  into the compensation of production workers and that of other employees, but data for that breakdown were not available.<sup>39</sup>

The variable  $N$  represents the number of full-time equivalent workers, which includes part-time employees based on their hours worked. Unfortunately this variable, from the Bureau of Economic Analysis, is available only for the entire nonfinancial business sector, including the noncorporate part of that sector. This introduces an error into our variables for the real wage and output per worker, reducing both variables by overstating their denominators. However, we are only interested in the relation between the growth rates in real wage and output per worker. Since  $N$  is in the denominator of both, its overstatement should only slightly affect the relation between the two growth rates (with some effect possible due to interaction terms among changes in aggregate real wages, aggregate real output, and the number of full-time equivalent workers). Also, we are analyzing data over periods no longer than four years, and the ratio of nonfinancial corporate employees to all nonfinancial business employees should change little in such a short span of time.

### 3. Annual vs. Quarterly Data

This paper used annual data rather than quarterly data. There would be some advantage to using quarterly data for our purposes, in that they pinpoint the start of the profit rate decline and the timing of the business cycle peak more closely. However, there are disadvantages to quarterly data for this study which outweighed the advantages. First, some of the quarterly variables are affected by seasonal factors. This is most serious for equation (2) for the determinants of the profit share. A preliminary examination of the quarterly data found that some of the determinants of the profit share seemed to be significantly affected by seasonal factors, particularly the tax share of income, although other variables also appeared to be affected, such as our measure of capacity utilization,  $Y/TA$ .

A second problem with quarterly data for our purposes is that the Bureau of Economic Analysis' series for the number of full-time equivalent workers is available only for full years. The only quarterly series that could be used for the number of employees (or the number of hours worked) in the nonfinancial private sector which covered the whole period was a Bureau of Labor Statistics series for the total number of employees. However, that series adds together full-time and part-time employees, which is a significant disadvantage. Also, the BLS series excludes agricultural workers, although that would be a less serious problem. The BLS also has an index of aggregate hours worked, but it includes the financial sector.

It may be possible to use quarterly data in a later study, if the above problems can be resolved by finding a way to correct for seasonal variations in the quarterly data and finding or constructing an appropriate series for the number of workers or hours worked.

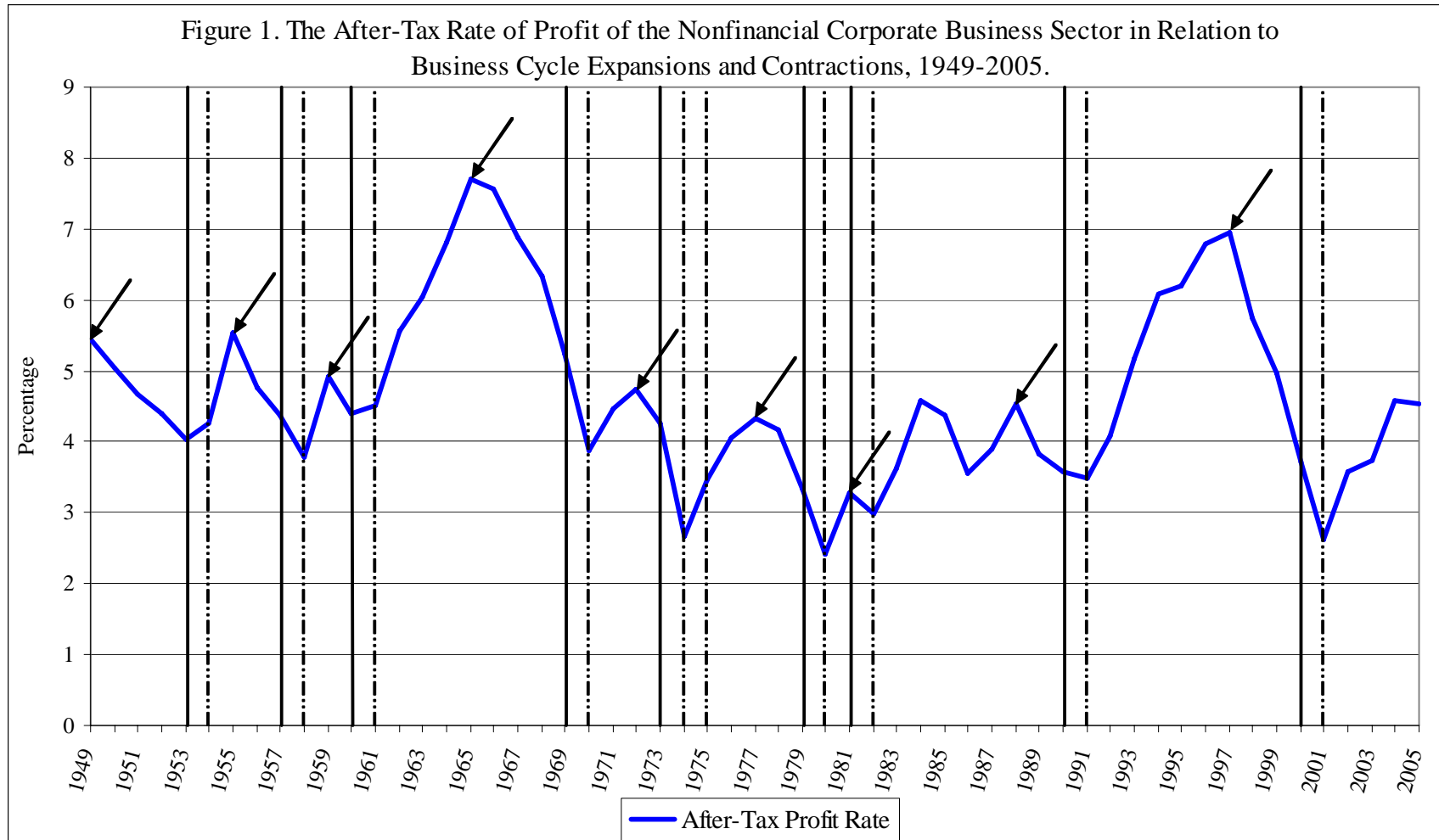
## Charts, Figures, and Tables

**Chart 1. Empirical Identification Scheme for the Four Crisis Tendencies**

	<b>Reserve Army</b>	<b>Under-consumption</b>	<b>Excessive Competition</b>	<b>Asset Bubble Effects</b>
Rate of Profit	↓	↓	↓	↓
Profit Share	↓	↑	↓	↓
Capacity Use		↓	↓	↓
Wage Share	↑	↓	↑	↑
Real Wage/ Productivity	↑	↓	↓	↓
Long Decline in Investment*	no	no	no	yes

\* Prolonged decline in nonresidential fixed investment following the business cycle peak.

Note: Arrow indicates increase or decrease in variable named at start of row prior to the recession.



Key:

Solid vertical line indicates last year of business cycle expansion.

Dotted vertical line indicates recession year.

Arrow indicates peak of profit rate prior to its decline in late expansion.

Source: U.S. Bureau of Economic Analysis, 2006, Table 1.14; U.S. Federal Reserve System, 2006, Flow of Funds, Z.1 Statistical Release.

**Table 1. Factors Affecting the Change in the Rate of Profit**

Period of r Decline	Percentage Change in Variable				
	(1) r	(2) R/Y	(3) Y/TA	(4) TA/A	(5) A/NW
1949-53	-25.85	-34.26	13.02	-2.00	1.84
1955-57	-21.07	-15.44	-7.99	0.42	1.01
1959-60	-10.55	-10.12	-0.48	-1.13	1.14
1965-69	-31.90	-34.42	0.15	-0.44	4.14
1972-73	-9.99	-11.25	3.06	-1.69	0.11
1977-79	-22.95	-23.23	-0.54	-0.19	1.10
1980-81*	36.26	37.78	-0.54	0.28	-0.84
1988-90	-21.42	-20.51	-2.09	-2.86	3.95
1997-2000	-46.49	-37.76	-4.30	-7.66	-2.70

\* Data for 1980-81 are for the entire one-year-long expansion; the rate of profit rose until the peak in that expansion.

Definitions:

r: rate of profit

R/Y: share of profit in income (output)

Y/TA: ratio of output (income) to tangible assets

TA/A: ratio of tangible assets to total assets

A/NW: ratio of total assets to net worth

Source: U.S. Bureau of Economic Analysis, 2006, Table 1.14; U.S. Federal Reserve System, 2006, Flow of Funds, Z.1 Statistical Release.

**Table 2. Contributions to the Change in the Profit Share of Income**

Period of r Decline	Direction of Change in R/Y	Contribution of Variable to Change in R/Y (as percentage)		
		(1) W/Y	(2) T/Y	(3) i/Y
1949-53	decrease	52.3	47.6	-2.1
1955-57	decrease	155.8	-66.9	11.5
1959-60	decrease	130.4	-39.9	7.5
1965-69	decrease	92.5	-14.4	21.7
1972-73	decrease	65.7	17.6	15.0
1977-79	decrease	149.1	-66.7	25.2
1980-81*	increase	109.9	9.8	-20.3
1988-90	decrease	68.3	-16.1	57.7
1997-2000	decrease	97.6	-22.0	23.4

\* Data for 1980-81 are for the entire one-year-long expansion; the rate of profit rose until the peak in that expansion.

Notes:

1. A positive sign indicates that the variable tended to change R/Y in the same direction as its actual direction of change. A negative sign indicates that the variable tended to change R/Y in the opposite direction from its actual direction of change.

2. The sum of the contributions to the change in R/Y may not exactly equal 100.0% due to the omission of business transfer payments and due to rounding errors.

Definitions of Variables:

r: rate of profit

R/Y: share of profit in income (output)

W/Y: share of wages in income

T/Y: share of taxes in income

i/Y: share of interest in income

Source: U.S. Bureau of Economic Analysis, 2006, Table 1.14.

**Table 3. Factors Affecting the Change in the Wage Share of Income**

Period of r Decline	Annual Percentage Change in Variable			
	W/Y	w <sub>R</sub>	Y <sub>R</sub> /N	CPI/Py
1949-53	0.81	4.56	4.29	0.54
1955-57	1.88	3.13	0.46	-0.75
1959-60	1.92	2.28	1.33	0.97
1965-69	1.47	2.55	1.61	0.53
1972-73	0.82	1.02	0.61	0.41
1977-79	1.89	-0.36	-0.16	2.10
1980-81*	-2.57	-0.90	2.76	1.03
1988-90	0.78	-1.64	-0.55	1.89
1997-2000	1.77	2.76	2.85	1.86

\* Data for 1980-81 are for the entire one-year-long expansion; the rate of profit rose until the peak in that expansion.

Note: The change in variables in Table 3 is shown as an annual percentage rate of change.

Definitions of Variables:

r: rate of profit

W/Y: share of wages in income

w<sub>R</sub>: real wage

Y<sub>R</sub>/N: real output per full-time equivalent worker

CPI/Py: Ratio of consumer price index to output price index

Source: U.S. Bureau of Economic Analysis, 2006, Tables 1.14, 1.15, 6.5B; U.S. Bureau of Labor Statistics, 2006a.



**Chart 2. Identifying the Four Crisis Tendencies in the Late Expansion, 1949-2000**

Period	Rate of Profit	Profit Share	Capacity Use	Wage Share	Real Wage/Productivity	Long Decline in Investment*	Crisis Tendency
1949-53	↓	↓	↑	↑	↑	no	reserve army
1955-57	↓	↓	↓	↑	↑	no	reserve army
1959-60	↓	↓	↓	↑	↑	no	reserve army
1965-69	↓	↓	↑	↑	↑	no	reserve army
1972-73	↓	↓	↑	↑	↑	yes <sup>1</sup>	reserve army+
1977-79	↓	↓	↓	↑	↓	no	excessive competition
1980-81	↑	↑	↓	↓	↓	no	-----
1988-90	↓	↓	↓	↑	↓	no	excessive competition
1997-2000	↓	↓	↓	↑	↓	yes <sup>2</sup>	excessive competition; bubble effects

\* Prolonged decline in nonresidential fixed investment following the business cycle peak

+ The long decline in investment does not fit the identification scheme for the reserve army crisis tendency.

1. Nonresidential fixed investment required 4 years to return to 1973 level.

2. Nonresidential fixed investment required 6 years to return to 2000 level.

Note: Arrow indicates increase or decrease in variable at top of column during period shown at start of row.

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## Endnotes

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1. While the term "regulation" is often associated with state regulation, the new capital-labor and capital-capital relations of the postwar period can also be thought of as involving a new kind of "regulation." Relations among large corporations were regulated by a tacit understanding that limited competition, and capital-labor relations were regulated by an informal compromise intended to avoid disruptive forms of class conflict.
  2. Marx (1967) introduces the reserve army mechanism in *Capital*, volume I, chapter 25.
  3. Some observers view the start of the Reagan Administration in January 1981 as the beginning of the neoliberal era in the U.S. However, all of the main features of neoliberalism, except for the state attack on trade unions, had their origins in the second half of the Carter Administration in 1978-79.
  4. The term "neoliberalism" refers to a new version of the older "liberal" form of capitalism, in which business was "free" from constraints from state oversight and free from any restraints in its relations with labor and with one another.
  5. The wage data are for average hourly earnings of production workers in the private sector in 1982 dollars (*Economic Report of the President*, 2003, p. 332, Table B-47). By contrast, in the long expansion of 1961-69, the real wage rose by 1.9 per cent per year.
  6. Sweezy (1942, ch. 10) and Wright (1979) present models of the underconsumption crisis tendency.
  7. See Crotty (2000). Brenner (1999) presents a theory of competition-driven over-investment as a general crisis tendency of capitalism rather than one specific to its neoliberal form.
  8. A major asset bubble tends to become internationalized, as funds from outside the country flood in to share in the quick profits. This occurred in the U.S. stock market bubble of the 1990s. See Kotz (2003).
  9. Weisskopf (1979) considered both "short-run" crises and also the long-run decline in the rate of profit over the entire period. Our interest here is restricted to short-run crises.
  10. Bakir and Campbell (2006) extended Weisskopf's (1979) methodology to 2001. Their results have some similarities to the findings in this paper, although differences in definitions and data sources from those used in this paper led to some differences in results. Other recent studies of the rate of profit in relation to economic crises are Li, Xiao, and Zhu (2005) and Wolff (2001).
  11. Some advocates of the underconsumption crisis tendency do not emphasize the role of a decline in the profit rate in setting off a crisis. An example is Sweezy (1942).
  12. Investment includes only new capital goods purchased/produced, while the Marxist concept of capital accumulation includes the purchase of both new capital goods and additional labor power. There are other differences as well.
  13. The recessions during that period occurred in 1954, 1958, 1961, 1970, 1974-75, 1980, 1982,

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1991, and 2001. Only the 1974-75 recession lasted for two years (based on dating business cycle peaks and troughs by year). The official dating of business cycle peaks and troughs is done by the National Bureau of Economic Research (see National Bureau of Economic Research, 2006).

14. The Keynesian approach suggests that a recession might be initiated by a decline in government purchases acting with time lag. However, of the 9 recessions since 1950, government purchases rose in the year before the recession in 7 and declined very slightly in the remaining 2, declining by 0.2 per cent in 1969 and 0.4 per cent in 1973 (U.S. Bureau of Economic Analysis, 2006, Table 1.1.1).

15. See section 3 for a discussion of the peculiarities of the 1980-81 expansion.

16. Weisskopf (1979) also used data on the nonfinancial corporate business sector.

17. The terms on which the firm can obtain borrowed funds, along with various other factors, may also affect the investment decision, although business investment is normally not highly sensitive to changes in interest rates.

18. The ratio  $Y/TA$  is also affected by changes in the organic composition of capital, since  $Y/TA$  is equal to  $Y/W$  times  $W/TA$  where  $W$  is aggregate wages.  $W/TA$  is a measure of the reciprocal of the organic composition of capital although using U.S. national income account data rather than labor value data. However, the organic composition of capital is unlikely to vary much during the short periods of time that we will be analyzing.

19. In general the sum will not be exactly equal to the percentage change in  $r$  because changes in the interaction terms among the right-hand variables also contribute to the change in  $r$ . Unless three or four of the right-hand variables change significantly, the sum of their individual percentage changes will be quite close to the percentage change in  $r$ .

20. The decline in  $R/Y$  may also indirectly account for an additional part of the change in  $r$ , through the interaction of the change in  $R/Y$  with changes in the other three right-hand variables. However, normally changes in the interaction terms have small effects compared to the separate changes in individual variables.

21. One component of nonfinancial corporate sector income is omitted here, namely business transfer payments. These are very small relative to total output (around 1%).

<sup>22</sup>. There are no interaction terms for additive equations.

23. This concept of "contribution" does not take account of the possibility that a change in one of the right-side variables might affect other right-side variables, and through such linkages, further affect the left-side variable. If one allows for such possibilities, then the actual impact of changes in the right-side variables might be different from their "contribution" as defined here.

24. There are also technical differences between the two price indexes, which will be considered in section 4.

25. In Weisskopf (1979) the ratio of output to "full capacity output" could only be roughly estimated, using capacity utilization data for manufacturing. Since Weisskopf was studying long-run movements of the rate of profit as well as short-run movements, he had to take account of

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changes in the organic composition of capital, which can significantly affect the ratio  $Y/TA$  over longer periods of time.

26. Weisskopf (1979) referred to this case as involving "offensive strength of labor," while a rising wage share with real wages rising more slowly than productivity he termed "defensive strength of labor."

27. Using the NBER's monthly turning points, the 1980-81 expansion lasted 12 months, from July 1980 to July 1981.

28. In the 1982-90 expansion the profit rate declined in the middle of the expansion, and then rose again, before declining in the last two years of the expansion.

29. This is true for quarterly data as well as annual data.

30. In the atypical 1980-81 expansion, the rise in the profit share directly accounts for all of the rise in the profit rate.

31. Bakir and Campbell (2006) found a similar, although not identical, pattern to that found in table 3.

32. Nonresidential fixed investment rose by 0.8 per cent in 1974, fell by 9.9 per cent in 1975, then rose by only 4.9 per cent in 1976. Not until 1977, when it finally spurted up by 11.3 per cent, did it surpass the 1973 level (U.S. Bureau of Economic Analysis, 2006, Table 1.1.1).

33. The industrial capacity utilization index rose during 1991-95 to 83.87%, fell in 1996 and then rose to 83.92% in 1997 (barely above the 1995 level), then fell steadily to 81.82% in 2000. Despite lagging nonresidential fixed investment following the peak, industrial capacity use continued to decline, reaching 75.14% in 2002 (U.S. Federal Reserve System, 2006, G.17). This partly reflects conditions specific to the industrial sector rather than the entire nonfinancial sector.

34. *Economic Report of the President*, 2003, table B-63, p. 349, and U.S. Bureau of Labor Statistics, 2006a. The rate of growth cited in the CPI is from December to December.

35. It is too soon to evaluate the expansion that began in 2002, which is continuing at this time. However, it has been strongly influenced by an asset bubble in housing (Kotz, 2006).

36. The percentages given are for 2001-02 and are those currently used by the Bureau of Labor Statistics in compiling the CPI (U.S. Bureau of Labor Statistics, 2006b).

37. Rent for shelter is 32.5% of the CPI, fuel is 7.1%, and food is 15.4%, all of which embody significant land or energy rents.

38. The Bureau of Labor Statistics recently created a new chained Consumer Price Index, called the C-CPI-U, but it starts only in 1999 (U.S. Bureau of Labor Statistics, 2006a).

39. It would be possible to construct an estimate of the breakdown of the variable  $W$  into compensation of production workers and other employees, but this has not been done for this

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paper.