The Cyclical Decline of the Profit Rate as the Cause of Crises in the United States (1947-2011)
Sergio Cámara Izquierdo
Review of Radical Political Economics 2013 45: 463 originally published online 13 March 2013
DOI: 10.1177/0486613412475186

The online version of this article can be found at:
http://rrp.sagepub.com/content/45/4/463
The Cyclical Decline of the Profit Rate as the Cause of Crises in the United States (1947-2011)

Sergio Cámara Izquierdo

Abstract
This work employs the methodology developed by Thomas Weisskopf in the late 1970s to analyze the role of cyclical declines in the profit rate as the cause of crises in the United States during the postwar period, and contrasts the results with Weisskopf’s and other subsequent works he inspired. The generalized idea in the literature that cyclical crises are normally caused by a decline in the profit rate is confronted; the cyclical decline in the profit rate is a plausible cause of six out of ten postwar U.S. cyclical crises, but it is doubtful that this can be postulated as the case in the remaining four. Of these six crises, most of them can be related to the offensive rising strength of the labor variant of crisis. Finally, it is argued that analysis of the profit rate short-term dynamics is insufficient to provide a specific characterization of the neoliberal crises in opposition to the crises of the Keynesian period in the U.S. economy.

JEL classification: B51; E32; J30

Keywords
profit rate, business cycle, Marxian crisis theory

1. Introduction
This paper analyzes the role of cyclical declines in the profit rate as the cause of crises in the postwar United States. The investigation relies heavily on Weisskopf’s seminal work, as well as on subsequent works inspired by it. Weisskopf (1978) proposed an analytical framework, further enhanced in 1979, “to evaluate the current relevance of various Marxian theories of capitalist economic crisis” (Weisskopf 1979: 341) by way of distinguishing the various forces that drive the cyclical fluctuations of the profit rate ($r$) throughout the business cycle. Specifically, the rising organic composition of capital (ROC), the rising strength of labor (RSL), and the realization failure (RF) theories of crisis are expressed in the decline of the profit rate caused by one
of its determinants, the potential productivity of capital \((k)\), the profit share \((s)\), and the capacity utilization rate \((u)\), respectively, according to the following decomposition of the profit rate (Weisskopf 1979: 342-8):

\[
r = \frac{P}{K} = \frac{P}{Y} \cdot \frac{Y^*}{K} = s \cdot u \cdot k
\]

where \(P\) is net profits, \(K\) is net capital stock, \(Y\) is the nominal net output, and \(Y^*\) is the potential net output.\(^1\) Weisskopf’s (1979) empirical analysis of the profit rate in the U.S. nonfinancial corporate business sector found a key stylized fact of business cycles: the profit rate declines during the late expansion period of the cycle prior to the contraction phase.\(^2\) Consequently, he divided “each cyclical expansion… into two phases: an ‘early expansion’ (phase A) during which the profit rate rises and a ‘late expansion’ (phase B) during which the profit rate falls.” The “cyclical contraction (phase C)” completes the business cycle (Weisskopf 1979: 351).\(^3\) Weisskopf postulated the cyclical decline of the profit rate as the trigger of economic crises, given its role as an indicator of capitalists’ profit expectations and investment decisions.\(^4\) Also, he found that the cyclical decline of the profit rate is essentially caused by the decline of the profit share as a consequence both of the offensive labor strength – real wage gains higher than real productivity gains – predominant in the first cycles of the postwar period, and the defensive labor strength – the price of wage goods rising relative to output prices – more intense in the last cycles of the Keynesian period (Weisskopf 1979: 369-371).

Henley (1987) extended Weisskopf’s analysis to 1982, adding two more cycles. Additionally, he decomposed labor’s share, the inverse of the profit share, into wage share, salary share, and supplemental labor cost share. He concluded that the deterioration of offensive labor strength owes to decreasing wage share, despite increasing salary and supplemental labor cost shares. Recently, Bakir (2006) and Bakir and Campbell (2006, 2009) have extended Weisskopf’s analysis to include more recent dates. In addition to supporting his conclusions, they find that the dynamics of the price of wage goods relative to the price of output has displaced higher real wage growth relative to productivity growth as the main factor behind the decline in the profit share during neoliberalism. In the same way, Kotz (2009) argues that the 1991 and 2001 crises were the consequence of expansion phases characterized by overinvestment, given that the decline in the profit rate is attributable to a decline in both the capacity utilization rate and profit share, despite productivity rising faster than real wages.

\(^1\)Weisskopf (1979) warned that variations in capacity use can affect the profit share (354-7), given that wages are more rigid than profits in response to cyclical fluctuations, and proposed a more complex analytical framework that differentiates between both effects and allocates them correspondingly (363). This new decomposition does not change significantly the dynamics during the late contraction phase, in which my main interest is placed, so the basic decomposition is adequate for my purposes.

\(^2\)Previously, Boddy and Crotty (1975: 5) noted that the “labor share typically rises in the latter half of an expansion,” which led them to formulate a business cycle theory linked to the dynamics of income distribution and the industrial reserve army in which class conflict plays a prominent role.

\(^3\)Weisskopf (1979: 350n) did not divide cyclical contractions into two phases because his main interest was to analyze profit rate downturns as the cause of crises, and because they are normally too short. It should be remembered that the profit rate normally declines during contractions.

\(^4\)Weisskopf (1979: 341-2) related his analytical framework both to cyclical crises and to the formation of long periods of secular stagnation. Nonetheless, the mechanism relating profitability and output through investment is short-termed, the causal relationship running from investment to profits. In contrast, Marxist theory postulates the inverse casual relationship in the long term, from profits to investment, the fraction of profits accumulated determining investment and output (Duménil and Lévy 1999: 73-4).
The present research updates this analysis and includes the addition of one further level of aggregation: the corporate business sector. Nonfinancial businesses represent 89 percent on average of the corporate sector throughout the period; nevertheless, the increased importance of the financial sector during neoliberalism gives rise to differences between the two levels of aggregation, especially in the last business cycle. Section 2 presents the periodization of business cycles. Section 3 addresses the role of the profit rate as the cause of crises and decomposes the profit rate into its determinants. Section 4 presents the dynamics of the wage share by decomposing it into its own determinants. Section 5 characterizes the postwar cyclical crises. Finally, conclusions are drawn.5

2. The Profit Rate as the Cause of Cyclical Crises

The outcome of my periodization for the corporate sector is shown in Figure 1, where the ten complete U.S. business cycles from trough to trough since World War II are presented, following the Roman numeration used by Weisskopf (1979). Phases B are shown as a shaded area; thus, the lack of data on the capacity utilization rate for the levels of aggregation employed requires my own estimations. The most prolific data correspond to the manufacturing and industrial sectors, from 1948 and 1967, respectively. Different statistical and econometric techniques have been implemented and compared, including a basic measure of the Wharton index (Klein y Summers 1966), Duménil and Lévy’s (1994: 9-10) methodology based on the Hodrick-Prescott filter, and Shaikh and Moudud’s (2004) method based on the cointegration relation between output and capacity. Given the short-term bias of the first methods, the latter has been favored; a measure of capacity utilization with slightly smaller amplitude than the industrial and manufacturing one is obtained. The remaining definitions of variables, data sources, and estimation methods are presented in a statistical appendix only available upon request to the author for reasons of space.

Figure 1. Business cycles in output and profitability, corporate sector, 1947q1-2011q2.
phase A corresponds to the unshaded area from the trough to the beginning of phase B, and phase C corresponds to the unshaded area from the end of phase B to the next trough. Only slight differences arise with the periodization for the corporate nonfinancial business sector. Three observations can be made here. First, phases B last nearly 8 quarters on average, in comparison to approximately 12 and 4 quarters of phases A and C respectively, implying a considerably long average period of profit rate decline prior to the output contraction. Second, about half of the average cyclical decline of the rate of profit occurs in phase B. Finally, the average economic growth is higher in the early expansion phase A than in the late expansion phase B.

Table 1 presents the duration and intensity of the decline in the general profit rate, phases B, 1949q4-2009q2.

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Corporate business sector</th>
<th>Nonfinancial corporate business sector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td>1950q3</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>1953q2</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>r(%)</td>
<td>-12.4%</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>1950q4</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>1953q2</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>r(%)</td>
<td>-13.7%</td>
</tr>
</tbody>
</table>

S: Start of phase B; E: End of phase B; L: Phase length in quarters; r(%): Exponential growth rate of the general profit rate.

In cycle VII, the profit rate and the output peaked at the same quarter and no phase B took place.

My periodization for the two levels of aggregation is akin to the periodization of the National Bureau of Economic Research (NBER), Weisskopf, Henley, and Bakir. Small differences owe to the different level of aggregation, data comprehensive revisions, and my use, along with the NBER, of product and income measures of output.

The fall in capacity utilization and the greater rigidity of wages in relation to profits during economic crises generate a decline in the profit rate as a consequence of the crisis, mostly in phase C of business cycles.

6 In cycle VII, the profit rate and the output peaked at the same quarter and no phase B took place.

7 My periodization for the two levels of aggregation is akin to the periodization of the National Bureau of Economic Research (NBER), Weisskopf, Henley, and Bakir. Small differences owe to the different level of aggregation, data comprehensive revisions, and my use, along with the NBER, of product and income measures of output.

8 The fall in capacity utilization and the greater rigidity of wages in relation to profits during economic crises generate a decline in the profit rate as a consequence of the crisis, mostly in phase C of business cycles.
profit rate experienced a not so intense, but long, decline in phase B of cycle I, a rapid but intense decline in cycle II, and an abrupt and ostensible decline in cycle X.\textsuperscript{9}

3. The Causes of Cyclical Declines in the Profit Rate

Equation (2) can be expressed as a growth accounting equation, where the dot superscript denotes the exponential growth rate of a variable, in order to ascertain the effect of each component in the profit rate:

\[
\dot{r} = \dot{s} + \dot{u} + \dot{k}
\]

(2)

On average, the decomposition shows that more than three-quarters of the cyclical decline of profitability prior to the output contraction is explained by the decline in profit share in both levels of aggregation. In contrast, the fall in the profit rate during output contractions is explained mostly by the drop in the capacity utilization rate, whose rise in the early expansion phase, along with the profit share increase, accounts for the cyclical recovery of the profit rate. In all three phases, variations of the potential productivity of capital have a minor or insignificant influence on the short-term dynamics of profitability. Table 2 presents the variation in the profit rate and its determinants in each phase B for both levels of aggregation.\textsuperscript{10} In every cycle, the main contributor to the decline of the profit rate is the profit share. If cycles III, V, and VIII, characterized by insignificant declines in the profit rate, are omitted, the decline of the profit share contributes to at least three-quarters of the decline in the profit rate in four out of the remaining six cycles (I, VI, IX, and X); in cycle IV, it explains about two-thirds; and almost half of it in cycle II.

The fall in the capacity utilization rate contributes to the cyclical decline of the profit rate in most cycles. However, only in three of them is this contribution noteworthy: II, IV, and IX. As Figure 2, which shows the cyclical dynamics of the profit rate determinants, makes clear, the profit share falls ahead of the capacity utilization rate in cycles II and IX. In cycle IV, both

\textsuperscript{9}During this last cycle, it is noteworthy that the drop was much steeper in the corporate sector than in the nonfinancial one, evidencing the financial origin of the 2007-2009 crisis. Quite the opposite, the 2001 crisis detonated in the new technologies sector was preceded by a stronger decline in the nonfinancial sector. It is also noteworthy that similar situations only occurred in cycles III and V, when the profit rate drops were mild.

\textsuperscript{10}The growth rates in Table 2 are exponential growth rates of the whole phase, calculated as the difference of the natural logarithms of the final and initial value of the variable.
determinants fall simultaneously at the beginning of phase B, and interrupt their fall halfway through the phase, only to be resumed by the profit share. Consequently, the contribution – direct and indirect – of the fall in the capacity utilization rate to the decline in the profit rate during phases B is negligible. Finally, the potential productivity of capital has contributions of opposing signs, predominantly positive, though most of them of minor importance, except for cycles I, II, VI, and X; in these cycles, the decline in the potential productivity of capital is explained for the most part by movements in the relative price of output and means of production.11

4. The Cyclical Dynamics of Income Distribution

Given that the profit share explains most of the cyclical declines of the profit rate in phases B, the specific dynamics of this variable are analyzed in this section. The profit share \( s \) is the inverse expression of the wage share \( v \), which can be decomposed into the unit real wage \( w \), the unit real productivity \( y \), and the relative price of wage goods and output \( p \):

\[
\begin{align*}
    s &= \frac{P}{Y} = 1 - \frac{W}{Y} = 1 - v; \\
    v &= \frac{W}{Y} = \frac{\bar{W}}{\bar{Y}} \cdot \frac{P_W}{P_Y} = \frac{\bar{W}/L}{\bar{Y}/L} \cdot \frac{P_W}{P_Y} = w \cdot y^{-1} \cdot p
\end{align*}
\]

where \( W \) is the total mass of wages, \( \bar{W} \) is the real expression of the mass of wages, \( \bar{Y} \) is real net output, \( P_W \) is the price index of wage goods, \( P_y \) is the output deflator, and \( L \) is the homogeneous

\[11\]The potential productivity of capital can be decomposed into the potential productivity of labor, the technical composition of capital, and the relative price of output and means of production. Given the scarce importance of this variable in the decline in the profit rate in phases B, this decomposition is not pursued further in this paper.
amount of labor employed in production. Equation (3) can be converted into the following growth accounting equation:

\[ \dot{\psi} = \dot{\omega} - \dot{\gamma} + \dot{\rho} \]  

(4)

On average, half of the cyclical rise of the wage share in phases B is explained by the weakening of productivity growth and the acceleration of real wage growth, and the other half by the steady positive contribution of the relative price of wage goods and output, which implies a structural relative cheapening of domestically produced goods in relation to wage goods. Table 3 presents the variation of the wage share and its determinants in each phase B for both levels of aggregation. In five out of the six cycles in which there is a significant decline of the profit rate caused largely by a rise in the wage share, real wages grew more than productivity. In phases B of the remaining cycles, when the wage share hardly increments and the profit rate hardly declines, real wages were stagnant, in opposition to the rest of the cycles. The relative price of wage goods and output is a secondary contributor to the cyclical increase of the wage share in the first four cycles, and becomes the main contributor in the next cycles, except for the last one, when a still relatively high annual average growth rate of 1.4 percent is witnessed.

| Table 3. Growth rates of the wage share and its determinants, phases B, 1949q4-2009q2. |
|---------------------------------|---|---|---|---|---|---|---|---|---|---|
|                                 | I  | II | III | IV | V  | VI | VII | VIII | IX | X  |
| Corporate business sector       |    |    |    |    |    |    |    |    |    |    |
| \( \psi \)                      | 2.2%| 1.6%| 1.5%| 1.5%| 2.2%| 2.2%| 1.0%| 2.0%| 4.9%|    |
| \( \omega \)                    | 3.1%| 2.9%| 1.8%| 0.7%| -2.7%| -1.0%| 0.6%| 2.6%| 5.3%|    |
| \(-\gamma\)                    | -1.6%| -0.2%| -1.1%| 0.2%| 3.2%| 0.0%| -0.9%| -2.2%| -1.8%|    |
| \( \dot{\rho} \)               | 0.8%| -1.2%| 0.8%| 0.7%| 1.6%| 3.1%| 1.4%| 1.7%| 1.4%|    |
| Nonfinancial corporate business sector |
| \( \psi \)                      | 2.6%| 1.6%| 2.2%| 1.7%| 5.4%| 2.6%| 1.2%| 2.3%| 3.2%|    |
| \( \omega \)                    | 3.1%| 2.9%| 1.8%| 0.7%| 2.5%| -0.1%| 0.5%| 2.4%| 5.3%|    |
| \(-\gamma\)                    | -1.8%| 0.3%| -0.6%| 0.4%| 0.1%| 0.6%| -1.0%| -1.8%| -3.5%|    |
| \( \dot{\rho} \)               | 1.3%| -1.6%| 1.0%| 0.6%| 2.7%| 2.1%| 1.7%| 1.7%| 1.4%|    |

12 The growth rates in Table 3 are annual average exponential growth rates, calculated as the difference between the natural logarithms of the final and the initial value of the variable divided by the length of the phase in years. The variations in productivity are shown with a negative sign, so that the figures in the table correspond to its proportional contribution to wage share.
13 The exception is phase B of cycle VI, which starts in the second half of 1977 and lasts for a couple of years; it is a period of high inflation associated with the second oil crisis and low structural profitability. As a consequence, the real wage declined, along with a deeper decline in productivity, and the main contribution to the wage share increase is the relative price of wage goods and output.
14 The substantial average annual increase of real wages in the late expansion phases of cycles IX and X seems to contradict the usual characterization of neoliberalism as a period of diminished power of the working class. However, a look at the annual average increase in the real wages of production and non-supervisory workers (1.39 percent in cycle IX, and 0.57 percent in cycle X) demonstrates that real wage gains have benefited mostly the upper income brackets (Duménil and Lévy 2011: ch. 3), substantiating its neoliberal character. In other respects, the larger contribution of the wage share increase to the cyclical decline of the profit rate during phase B of cycle X in the corporate sector than in the nonfinancial sector is not explained by the higher increase of real wages in the financial sector, as might be expected, but rather by the milder annual growth rate of productivity.
15 In fact, it has a negative contribution during phase B of cycle II.
5. Marxist Theory of Crisis and the Cyclical Decline of the Profit Rate

The previous empirical evidence has cast doubts about propositions that a significant decline in the profit rate prior to the contraction can be postulated as a stylized fact of business cycles. Beyond cycle VII, which lacks a phase B, the profit rate decline is insignificant in the late expansion phases of cycles III, V, and VIII, either for its duration or its intensity, or for both; most of its decline took place essentially during the cyclical contraction as a consequence of the crisis. Therefore, the role of the profit rate drop as a precipitating factor of these cyclical crises is dubious, and consequently, their relation to any variant of the theory of crisis postulated in Weisskopf’s analytical framework is problematic.

In the remaining six cycles, there is a significant and/or prolonged cyclical decline in the profit rate, caused mainly by a fall in profit share, in advance of the cyclical contraction, pointing to a prominent role of profitability in these crises. This fall is itself mostly explained in four cycles (I, II, IV, and X) by the higher growth of real wages than productivity, corresponding to the offensive labor strength variant of crisis; in cycle IX the major contributor is the relative price of wage goods and output, corresponding to the defensive labor strength variant; and cycle VI is hardly classifiable given the unusual decline in productivity and real wages during the late expansion.

The empirical data also do not support a specific characterization of the neoliberal crises in opposition to the crises of the Keynesian period based on profit rate dynamics. First, the decline of the profit rate in cycle VIII does not seem relevant for causing the crisis. Moreover, out of three neoliberal cycles, the relative price of wage goods and output lies behind the decline in the rate of profit only in cycle IX, thus rejecting the results of Bakir and Campbell (2006). Also, Kotz’s (2009) argument of overinvestment crises in neoliberalism only holds for cycle IX, given that both the real wage grew faster than productivity, and the capacity utilization rate did not decline in cycle X.

6. Conclusions

This paper shows that the cyclical decline of the profit rate is a plausible cause for six of the U.S. postwar cyclical crises, but it casts doubts about this being postulated in the case of the remaining four. Of these six crises, four of them can be related to the offensive rising strength of labor, which constitutes the most frequent type of cyclical crisis. Finally, the analysis of profit rate short-term dynamics is insufficient to provide a characterization of the neoliberal crises in opposition to the Keynesian period crises in the U.S. economy.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Financial support was partially provided by the Programa de Mejoramiento del Profesorado (PROMEP) of the Secretaría de Educación Pública (SEP): SEP-23-005-A.

Bibliography


Author Biography

*Sergio Cámara Izquierdo* is professor of economics at the Universidad Autónoma Metropolitana-Azcapotzalco in Mexico City, where he coordinates the Marxist economics component of the BS Economics degree. His research interests include applied political economy and the Marxian labor theory of value.