THE GREAT RECESSION IN THE US FROM THE PERSPECTIVE OF THE WORLD ECONOMY

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Abstract: In this article, the economic crisis from the US perspective is analyzed, using a Marxist approach. As the so-called *Great Recession* constitutes a general crisis of the capitalist economy at world level, this article intends to provide an analytical framework to explain it from the profitability of capital point of view, while emphasizing the meaning of the real estate bubble and the placement of the US economy in the world system. In doing so, an additional objective of this article is to provide elements to reveal the limitations of the conceptions of the theory of the crisis based on income distribution, finance, neoliberalism, and generally any aspect outside the core of the process of capitalist valorization as the key explaining factor.

Key words: profitability; accumulation; economic crisis; US economy; Marxist theory

Introduction

In this article, we analyze the economic crisis of 2007–09 in the US from the perspective of its place in the world economy, using a Marxist approach. Unlike other analyses on the causes of the crisis and on the US economy, this text (1) theoretically characterizes the Great Recession (GR) and the implications that the place of the US in the world capitalist system has for the study of the crisis; (2) the meaning of the housing bubble is exposed in order to identify its impact on capital accumulation and the profit rate; (3) profitability is studied by using different indicators, both the rate and the mass of corporate profits; and (4) the characteristics and shortcomings of the profit income recorded in the System of National Accounts (SNA) are explained.

The analysis of an economic crisis requires reconciling the level of abstraction of the theory of crisis with the more concrete phenomena pertaining to the current

model of accumulation. Thus, the specific aspects of the GR lie within three interconnected phenomena: (1) the absence of a truly intense accumulation process in the preceding cycle (2003–07), with implication in the composition of capital; (2) the existence of a speculative bubble associated with the most dynamic sector of investment, real estate, which led to an increase in private indebtedness; (3) the regressive pattern of income distribution; and (4) geographical and sectorial imbalances. These features pose a challenge to a characterization of the crisis from the perspective of Marx and its general laws enunciated in *Capital* (Marx [1867] 1996, [1894] 1998).

However, I think that the Marxist approach in fact explains not only why these kinds of particularities arise from the inner tendencies of the mode of production but also the reasons of opposing explanations, even that nowadays most of the Marxist authors have rejected the "Law of the tendency for the rate of profit to fall" (LTFRP) as the foundation of the GR (see A. Freeman 2010; Mateo 2013). Therefore, a complementary aim of this article is to contribute by linking the above-mentioned facts on distribution, finances, etc., with the general laws of motion of capitalism, showing that *the Marxist theory of crisis* is appropriate to characterize the GR.

In this sense, one of the implications of this type of approach lies in the distinction between the way the phenomena appear (and are quantified in the SNA) and its ultimate foundations. In reality, it is not entirely possible to make a quantitative demonstration of our Marxist explanation for the crisis, but at least to make "approximations" that combine qualitative reasoning with quantitative aspects. Given that, we harmonize the theoretical analysis with data from the US economy.

To set a time frame start for the beginning of the crisis the NBER is used, so the growth phase lasted from November 2001 (2001Q4) until December 2007 (2007Q4), while the crisis ended in June 2009 (2009Q2) (NBER, 2010).[1] This article will focus on the US corporate business sector, which concentrates the basic tendencies of the capitalist production.

The article is organized in two sections. First, we start by characterizing the crisis. Then, we highlight the questions related to the US economy and its place in the capitalist world system, while in the last part of the section several theoretical aspects related to the real estate bubble are explained. Second, we analyze the dynamics of capital accumulation in the US economy, followed by addressing the emergence of the crisis, whose particularities require some comments on profits, crisis, and National Accounts in the context of the GR in the last part.

Elements for the Analysis of the World Crisis

The purpose of this section is to show the relationship between the Marxist theory of the crisis and its application to a specific area (US economy) and the current historical moment.

Theoretical Characterization

There are wide discrepancies in the diagnosis of the current crisis between Marxist authors. Briefly, we can point out the three main explanations and where the source of the contradiction may lie.[2]

First, insufficient profitability and its tendency to fall as the starting point, with controversies surrounding the measurement of the stock of capital at replacement or historical cost, complemented with (only) some references to the mass of profit. Second, a financial crisis, usually associated with neoliberalism, in which finances would have deteriorated the "net" profitability. And third, an imbalance between production and demand, although the source of the contradictions can be located in the productive sphere ("monopoly-capitalism" current of the *Monthly Review*) or in the insufficient demand generated by low wages (underconsumption).

Taking these discussions into account, it is our idea that the crisis that starts at the end of 2007 is, in the first instance, a crisis of capitalism derived from the general laws of accumulation at a world level (Roberts 2009; A. Freeman 2010; Carchedi 2011; M. Smith and Butovsky 2012), and more specifically, based on an insufficient capacity to generate surplus value. It thus expresses a growing conflict between the existent potential for development of the productive forces and the capitalist framework of the social relations of production (Arriola 2011). Therefore, it corresponds with the general guidelines expressed by Marx ([1894] 1998), although with important particularities from the current historic moment.

On the one hand, this crisis, while systemic, is a crisis of the global cycle of capital valorization, as it affects its different forms of existence (productive, commercial, and financial) at a great scale and intensity. Given the geographical extension of this valorization cycle, it means a worldwide crisis from the third trimester of 2008.[3] This is reflected in the kind of restructuring necessary for the recomposition of profitability conditions as to boost a new growth wave. Therefore, it is not a mere cyclical downturn. On the other hand, the extent of the GR implicates that in the last instance, it constitutes a phenomenon derived from the LTFRP, that is, a crisis based on the value sphere which is manifested, but in a contradictory way, in the rate of profit.

In quantitative terms, the profit rate (r) relates the surplus (profit) (p) and the stock of capital (K): $r = p / K$, "p" being the driving force of accumulation, given that the investment depends on profit, $I = f(p)$, and is the source of economic growth (GDP $\approx Y$). So, $p \rightarrow I \rightarrow Y$. In order to maximize profit, the capitalist wishes to reduce costs, and therefore to grab a larger amount of surplus labor. To this end, it should increase the labor productivity $((\pi = Y) / (L))$, which in general demands an increase of the fixed stock of capital (K) per worker (L): $\pi = f(K / L)$. The result is a tendency to an increase in the capital-labor ratio ($\theta = K / L$). Given

that (abstract) labor is the source of value, if "θ" increases more than "π," what can be named the "productive efficiency of investment (PEI)" (PEI = π / θ), then the capital productivity (Π_K)[4] or maximum profit rate (p_{max}) decreases if it is not offset by the price ratio (P_Y / P_K), of the product and capital, respectively.

$$\Pi_K = \frac{Y}{K} = \frac{\pi}{\theta} \cdot \frac{P_Y}{P_K}.$$

In turn, the profit rate depends on the product-capital ratio and on the profit share in total income ($\beta = p / Y$), as well as on the profit margin on wages ($\pi - w$) reached by means of mechanization ($\theta \rightarrow \pi$), in case the different price deflators considered share the same dynamics (P_Y, P_K, and P_C—consumer price index).[5]

$$r = \Pi_K \beta.$$

$$r = \frac{Y - W}{K} = \frac{YP_Y - wP_C}{\theta P_K} \Rightarrow r = \frac{\pi - w}{\theta} \Leftrightarrow P_Y = P_C = P_K.$$

Analytically, we start from a global perspective because the crisis in the US is the materialization at national level of a world capitalist crisis. Thus, the world capitalist economy as a whole transcends its constituent parts, meaning the level in which "the laws of capitalism develop in a more complete and concrete manner" (McNally 2009, 43–44). Although the participation of the US economy in the world GDP has decreased from 31% to 23% between 2000 and 2010 (IMF 2014), its qualitative importance goes beyond that. Its central position in the capitalist system implies taking into account the difference between the mass of the value internally generated and the mass of the value that is taken from others (J. Smith 2010). This difference derives from the international movements of capital, which redistribute the surplus among the different areas, and which also result in the extraordinary indebtedness capacity of the US economy, incentivized in its turn by the speculative dynamic of the real estate bubble. Between 2003 and 2008, the US has received from overseas a total amount of capital inflow equivalent to between 7% and 15% of GDP, and generated a capital outflow between 3% and 10% of GDP,[6] so this favorable difference has allowed the US to compensate the current account deficit of 4%–5% of GDP, mainly generated by a deficit on the balance of trade (Bureau of Economic Analysis [BEA] 2012). Since the Southeast Asian crisis of 1997–98, in return, the periphery has accumulated general trade surpluses, which financed the net capital flow toward the great financial centers (Wall Street) in the form of portfolio flows and reserve accumulation.

The US economy has a relatively secured demand for its currency, which allows this country to manage a large portion of the world's savings and, through it, generate a downward pressure on its interest rates. Meanwhile, the transnational corporations can finance investment projects in the rest of the world (Schwartz 2009) and acquire a large amount of imports at lower prices. The capacity to externalize certain parts of the value chain, paired with the cheaper import of different goods, allows for reducing the cost of the elements of constant capital and the labor force, which has a positive impact on profitability (Broda and Romalis 2008; Milberg 2008; J. Smith 2010). That is, the US economy has more possibilities than others to activate mechanisms to counter declining profitability by way of lowering production costs, access to goods already produced, and capital to invest.

In this sense, such clarification is useful from the perspective of the implicit criticism of other conceptions of the crisis, which is largely explained by (1) extrapolating the phenomena that appear in the SNA of an economy, usually the US, without previously placing it on an analysis of world capitalism as a whole. In this case, it seems that the problem would be an excess of profits resulting from the lack of demand, in turn caused by a regressive income distribution; and (2) not considering the determinants of speculative phenomena such as the housing bubble.

Background and Framework

The identification of the specific features of the crisis in the US economy requires exposing some elements of the period from a global perspective. Chronologically, the GR can be pinpointed from two types of contribution-related antecedents. First, the phase that starts after the crisis of 1970s, a long cycle characterized by the progressive implementation of neoliberal policies. Second, the period of expansion of 2003–07 immediately preceding the crisis and related to the previous phase of intense accumulation associated with the dot-com bubble.

In recent decades, there have been two types of expansion of the capitalist system that we should consider: one resulting from neoliberal policies and the other from the disappearance or transformation of the socialist field, together with changes in other peripheral economies. Thus, capital has been able to dispose of a large number of material assets for capitalist production at low cost, while around 1.5 billion people were incorporated into the economically active population (R. Freeman 2004; IMF 2007) with low wages. The repercussions we should consider in the analysis of the crisis are diverse:

1. A pressure toward moderation of technical change, since the increase in labor meant a fall of around 60% of the capital-labor ratio in the early 2000s according to R. Freeman (2004).

2. The decrease of investment costs, expressed in US dollars, to the extent that the center of gravity in quantitative terms of global capital accumulation has shifted to the periphery (De Angelis and Harvie 2008), where the investment in relation to GDP was 27% on average between 2003 and 2007 (36% in Asia), compared with 23% in central economies (IMF 2014).

This extension of the capitalist mode of production at global scale has acted as a counteracting force on the decrease in profitability appropriated. But contradictorily, its contribution to improving the value-producing capacity has been insufficient, making it difficult to counter the underlying problem of valorization. These two aspects laid the basis for the growth of speculative episodes and regressive redistribution of income.[7] Despite the wave of technological transformation in recent decades, the so-called third industrial revolution developed from the use of information as a productive force (the information and communication technology [ICT]) and organic life as basic raw material (biotechnology, new materials development, etc.), productivity gains in terms of surplus value not only have not increased but have also shown an alarming drop since the 1960s in developed areas (see Arriola 2011; Kalogerakos 2013, Table 1; AMECO 2014; BLS 2014). To the extent that productivity does not significantly improve, it poses an impediment to the reduction of production costs, to what we add the problem associated with the energetic base of the accumulation model, characterized by the asymmetry between producing and consuming areas. That is how the contradiction between the development of productive forces and the capitalist relations of production expresses themselves (Arriola 2011).

Speculation and the Housing Bubble

The speculative bubble mainly related to the housing market has been the core of economic growth. From the Marxist approach, this boom is not explained as a phenomenon of psychological or institutional nature. On the contrary, first it must be characterized by its social content linked to capital valorization, and second, by the peculiarities of the current situation.

The first hypothesis we propose is that, given the speculative instinct being always present in a system whose driving force is profit maximization, the base of the central role of the housing bubble in the recent cycle of economic expansion is a problem of underlying profitability. In other words, a relatively small amount of surplus generated with respect to the volume of capital stock that has to be used for continuing accumulation. At the same time, this surplus in absolute terms implies extraordinary amounts of capitals in search of valorization (Guerrero 2008; Kalogerakos 2013).

The housing market has a number of features that makes it suitable for generating a bubble: housing is a general consumer good with a fairly inelastic demand and a price tag that requires long-term indebtedness, therefore generating a financial transaction. For this, it is very sensitive to interest rates. Furthermore, the central issue is that its production, unlike other commodities, greatly expands over time, and in the short term prices may be largely determined by demand and ground rent. These features, in the context of low interest rates due to sluggish investment and therefore of reduced profitability from Treasuries (Brenner 2009; Kliman 2011; Norfield 2012), together with the existence of these just mentioned large masses of profit-seeking valorization, contributed to turning this market into a very attractive source of profitability.

As the residential construction activity becomes the destination for investment, unlike other activities it does not lead to falling prices and overcapacity, at least at first. It attracts investment because prices rise and prices rise because more investment is attracted. Therefore, an imbalance between labor time and price (price-assets inflation) is generated. Since profitability arises from the increase in price of certain assets and not in the enlarge of surplus labor time by technical change, in this sense one can speak of "fictitious profits." Or in other terms, it could be made reference to a "profit upon alienation" stemming from a transfer between different circuits of income, from households to corporations (Shaikh 2016), as the counterpart of augmented profits by way of relative market prices are the increasing costs for households (less purchasing power) and rising debt (Mateo, forthcoming). Therefore, we have a model in which causality is apparently altered, leading to investment → price → profitability in the surface (see "The Emergence of the Crisis," pp. 195–199), and as such recorded in the SNA (see "Reflections on Profitability and Crisis," pp. 199–201).

This activity also generates significant externalities in the economy that allows it to serve as a driving force of the accumulation dynamics: supplies for construction, transport infrastructure, social services, business services, etc., that to a greater or lesser degree reach all social strata, even if with a deep asymmetry. But herein lays its own contradiction, as the housing bubble rests on an unstable and unsustainable long-term base. Access to new borrowers to finance the purchase of housing, whose price increases each year more than the population's income, is undermined by a wage regression, which in turn is the result of the limited increase of productivity, deepened in fact by this model. As the securitization process progresses, potential new borrowers are in worse labor conditions, which implies an intensification of financial activity and indebtedness. Consequently, the underlying profitability problem is manifested in a collapse of investment when it is not possible to keep paying mortgages and/or there are no new buyers. Thus, the crisis manifests itself as a problem of demand (wages) and associated with finance (debt), even if the real roots belong to the value-production sphere.

At the same time, other factors related to the economic conjuncture favored the speculative dynamics. First, the type of exit from the previous crisis of 2001–02. Given an insufficient capital destruction (Kliman 2011; M. Smith and Butovsky 2012), together with expansionary economic policies, many of the capitals that had generated the stock exchange bubble in the 1990s contributed to intensify the speculative process in real estate. Due to overcapacity, the over accumulation of the previous decade resulted in liquidity hoarding by enterprises. Second, deregulation decisions, as the government favored this process as a way to allow access to housing property to low-income groups.

In addition to these elements, there is a crucial aspect related to the aforementioned spatial configuration of capitalism: the proletarianization of a large contingent of labor in areas directly incorporated into the capitalist accumulation dynamics, such as China. Migration from the countryside to the city and from the periphery to the center all around the world has prompted an extraordinary boom in urbanization in recent decades, intensified by deregulation policies (Harvey 2010; OECD 2013; Tapia 2013), free trade agreements that have driven the country labor out, or the imbalances followed by the establishment of currency areas in less advanced countries (see the Euro zone) that have experienced intense speculative dynamics (Spain). Therefore, the housing bubble is also the result of social, geographical, and institutional changes experienced by capitalism at world scale (Harvey 2010).

But it also happens that this contradiction manifests as too much surplus and too little demand, when in fact just the opposite is found in a double sense, not in the distribution sphere but in production, and not because of too much surplus but because it is reduced in relative terms. And also, all of it is magnified by the underlying difficulties previously alluded by the poor results of investment in the development of productivity.

Accumulation and the Crisis in the US

Once this set of general issues to consider has been exposed, we approach below the main features of the accumulation process in order to characterize the crisis in the US economy.

Capital Accumulation

Accumulation and economic growth in the US have been relatively lackluster. The upturn phase has been brief (2003–07), with relatively low rates of GDP growth when compared with the postwar boom and with large imbalances, which have determined the modalities of manifestation of the crisis. The fixed investment to

GDP has been below 20% of GDP, but the most dynamic component was the residential investment, which represented more than a third of private fixed investment and 6% of GDP at the end of the cycle. The investment behavior in turn is reflected in the stock of capital (*K*), with an exceptionally low growth rate, at 2% annually during the boom preceding the crisis (Table 1).[8] In addition, the ability to generate employment has been reduced, just over 1% per year, which has translated into a low growth of the *K*/*L* ratio, with an annual average of 0.70%.[9]

This weakness in capital accumulation does not result, however, in stagnation of labor productivity, which increases by 1.76% in 2003–07. Although the rate of increase is lower than other phases, it turns out to be more than twice the rate of increase in *K*/*L* (1.76% vs. 0.70% annual average). Possibly, "much of the increase in productivity was due then to the intense incorporation of computer technology—both software and hardware—that had occurred in the nineties" (Astarita 2008). The overinvestment, together with the high indebtedness of the previous decade, allowed in the last cycle for the exploitation of the idle capacity originated from the 2001 recession, giving way to better understand the behavior of labor productivity with respect to the ratio *K*/*L*.

This explains the good performance of the PEI (π/θ). Historically, US labor productivity has grown by more than the rate of mechanization, just as the total output has increased more than the stock of capital (Table 1). One of the

Table 1 Historical Evolution of the Accumulation Process in the US (Average Annual Growth Rates)

Period	*K*	*L*	*Y*	*K/L*	*Y/L*	*Y/K*	*w/L*
1950–60	3.25	1.16	3.98	2.06	2.79	–0.28	1.41
1960–70	4.31	2.06	4.90	2.15	2.77	0.66	0.13
1970–80	3.90	2.29	3.55	1.57	1.23	–1.87	–1.90
1980–90	3.24	1.89	3.35	1.38	1.43	0.47	–1.09
1990–2000	3.35	1.99	4.09	1.25	2.05	0.70	–0.04
2000–2010	1.73	–0.41	0.88	2.35	1.30	–2.16	1.25
1982–90	3.13	2.07	4.00	0.53	1.36	1.43	–1.81
1991–2000	3.49	–6.46	4.19	0.91	2.18	1.02	–0.31
2002–07	2.00	1.18	2.96	0.70	1.76	–1.13	0.24

Source: BEA (2014b, NIPA; 2014a, FAT). See also the Appendix.

Note: K = current-cost net stock of private non-residential fixed assets, constant prices; L = full-time equivalent employees in private enterprises; Y = net value added of domestic corporate business, constant prices; W = compensation of employees; w/L = in constant prices; BEA = Bureau of Economic Analysis; NIPA = National Income and Products Accounts; FAT = Fixed Assets Tables.

consequences of the neoliberal economic restructuring that began in the 1970s–1980s was to make possible the reconfiguration of the accumulation process that for the US meant the ability to recover levels of PEI over the next two decades. While the capital stock has had a successful productive efficiency at constant prices in the 2003–07 boom, as it enabled the product to grow over 148%, the rate of accumulation was still considerably low. Thus, the ability of capital to appropriate new value is hampered by the low rate of relative increase of the source of its own surplus (abstract labor from the labor force), even if such PEI is maintained at high levels, a question addressed in the next point.

The Productivity of Capital

The relative hegemony of US results from its insertion into the progressive globalization of the production process and its associated financial relationships. The offshoring of certain lines of labor-intensive production, the role of ICT as well as new forms of production systems (like *just-in-time* and *lean production*) and the import capacity of various assets of the means of production facilitated by the strong dollar (see in this sense the depreciation of currencies from exporting undeveloped countries following crisis in the periphery), allowed productivity gains with relatively small amounts of fixed capital investments, so the productivity of capital (Y/K) experienced a rise, while the K/L ratio was not greatly increased (see Mohun 2009; Basu and Vasudevan 2013).

In the last growth phase, however, despite this level of efficiency with a higher increase of labor productivity than the K/L ratio, the productivity of capital paradoxically falls by –1.13% per year (Table 1), unlike what happened in previous decades and indeed during the 1990s expansion. Interestingly, this fall of PK coincides with an increase in the same ratio (Y/K) but at constant prices (as explained in the previous section, "Capital Accumulation," pp. 189–191), which requires incorporating the evolution of price deflators (Figure 1).

Up until the 1960s, the price index of capital stock was increased by more than the total output and business deflators. From 1981 to 2003, in contrast, a profound shift occurred, explicable by changes in world capitalism and the way the US has developed its hegemonic position. We have observed a relative cheapening of capital with few and insignificant exceptions (1988, 1993–95, 2002), where the differences in growth rates do not even reach 0.5 percentage points. This dynamic meant an important countertendency to declining profitability because it allowed to relatively reduce the cost of new investments, which accountably appears as a lower level of investment (McNally 2011).

But between 2004 and 2006, the GDP price index grew between 2.7 and 3.4 percentage points less than that of the stock of capital. During 2002–07, the capital stock deflator increased by 23.18%, while the total output deflator increased only

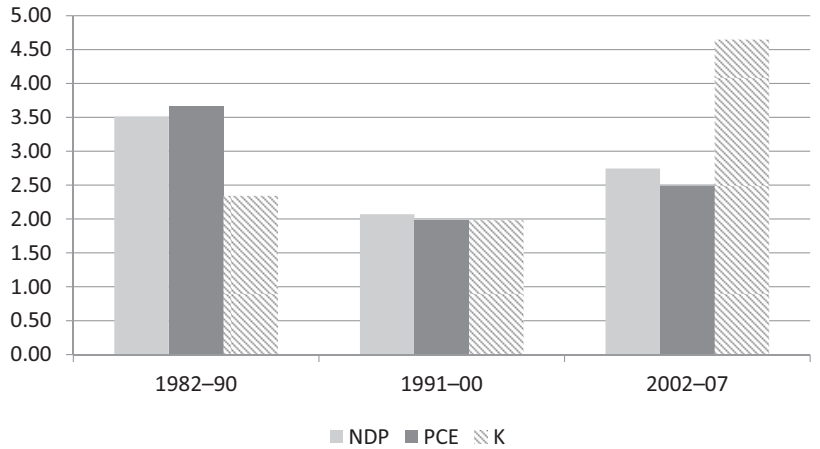

Figure 1 Price Indexes of Net Domestic Product, Consumption Expenditures, and the Stock of Capital: Annual Average Rate of Growth (%)

Source: BEA (2014b, NIPA; 2014a, FAT). See also the Appendix.

Note: NDP = net domestic product; PCE = personal consumption expenditures; K = net stock of private non-residential fixed assets; BEA = Bureau of Economic Analysis; NIPA = National Income and Products Accounts; FAT = Fixed Assets Tables.

by 12.85%, that is, one point more than the value added by the corporate sector. This offsets the larger increase of GDP (12.10%) than capital stock (10.49%) at constant prices, reflected in a fall of Y/K of 6.03%.

It is then possible to assess that in the last bull cycle, the means of production have become more expensive in relation to both the total output, particularly the consumer goods sector. It thus reveals a problem in the productive development of the means of production sector, in turn harmed by the depreciation of the dollar (Basu and Vasudevan 2013), which has resulted in the aforementioned decline in capital productivity. Therefore, the US economy has had a very weak rise of non-residential capital stock, and although it was relatively efficient, it could not avoid a fall in capital productivity, creating the framework for the crisis of profitability.

The Dynamics of Profitability

In this section, capital profitability is addressed through two approaches: the rate of profit (in relation to the stock of capital) and the mass of profits (real terms).

From a long-term perspective, it is observed that the rate of profit has not generally achieved in recent decades the levels prior to the crisis of the 1970s (Figure 2). Between 1970 and 2011, the ratio for the corporate sector was found to be 27%–30% lower than the average for 1945–69.[10] Instead, it has achieved higher rates than those recorded in the decades after the 1970s. The maximum rate of

profit for corporations after taxes was only surpassed in 1968, if capital stock at replacement cost is taken, or 1978 for historical cost, while the profit rate calculated with the surplus (net value added minus compensation of employees) was not as high since 1973 and 1984, respectively. Also, the evolution of profitability does not show a downward trend in the short growth cycle of 2003–07. After a minimum in 2001, these rates reached a peak in 2006, at which time we observe a very fast descent, falling 44%–45% in 2 years (2006–08).[11]

The mass of profits is also a key variable in the cycle of accumulation. In this regard, Marx ([1894] 1998) noted that the accumulation continues its course not in proportion to the rate of profit but in proportion to the mass of profits. When this volume stagnates or descends, it increases the absolute overproduction of capital, that is, overproduction of means of production while they act as capital. Using the mass of profits is also important as it is not possible to define a determined level of profit rate that is appropriate to boost investment.

In Figure 3, the evolution of corporate profits and their components at constant prices of 2009 is shown. The bull cycle starts in 2001Q3, when the corporate surplus recorded a minimum of US$848 billion. The maximum level is reached in the third-quarter of 2006, with US$1,754 billion. From that moment, and until 2008Q4, the corporate surplus decreases, although the profits of financial institutions begin their fall with a quarter in advance. However, the net balance of inflows and outflows of profits with the rest of the world registers positive balances. Even

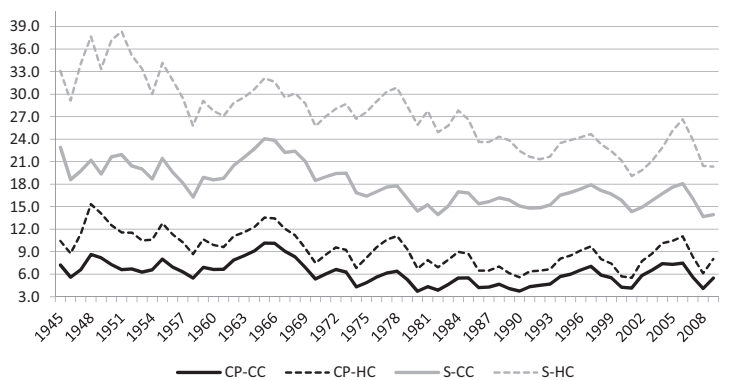

Figure 2 The Profit Rate in the Long Term (1945–2009): Different Expressions of the Surplus of Corporations with Respect to the Capital Stock as a Percentage

Source: BEA (2014b, NIPA; 2014a, FAT). See also the Appendix.

Note: Profit rate is profit/stock of capital. CP = corporate profit; S = surplus (net value added minus compensation of employees of corporate business sector); CC = current cost; HC = historical cost (both CC and HC for the stock of capital); BEA = Bureau of Economic Analysis; NIPA = National Income and Products Accounts; FAT = Fixed Assets Tables.

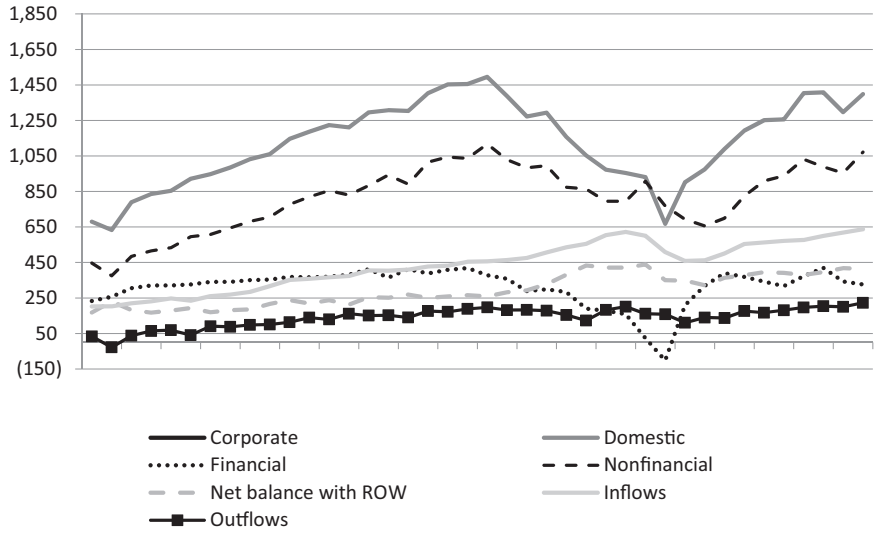

Figure 3 The Mass of Profits: Billions of US$ at 2009 Constant Prices

Source: BEA (2014b, NIPA). See the Appendix.

Notes: Structure of corporate profits with IVA and CCA: domestic (financial and non-financial) and ROW (inflows/receipts and outflows/payments). BEA = Bureau of Economic Analysis; NIPA = National Income and Products Accounts; IVA = inventory valuation adjustment; CCA = capital consumption adjustment; ROW = rest of the world.

as domestic benefits descended throughout 2007, the reception of capital intensified its counteracting effect over the deterioration of domestic profitability, and from the second quarter of 2007, and throughout that year, it records quarterly increments of over 10%.

Between 2006Q3 and 2008Q4, corporate earnings fell by an average 6% per quarter, reflecting the decline in the corresponding domestic sectors (–8.74%), partially offset by an increase of 2.72% of the external balance. The profits of a financial nature are those that show a more pronounced downward trend (77%), which would be 92% if we take as reference a quarter more in the beginning and at the end of the period (2006Q2–2009Q1). In fact, the last quarter of 2008, following the bankruptcy of Lehman Brothers, brings with it a collapse of the financial surplus of 536%.

In aggregated terms, during the profit expansion phase (from 2001Q3 to 2006Q3), the profit from domestic corporations increased by 199%, higher than that of non-financial (150%) and financial corporations (62%). Together with the 54% observed from the balance of receipts and payments with the rest of the world, it resulted in an increase of 106% of corporations' surplus. From 2006Q3 until 2008Q4, the

domestic surplus decreased by 55%, pushed mainly by financial corporations (–126%), given that the surplus decrease from non-financial institutions is less accentuated (–31%). As the external sector continued to contribute positively, the net surplus that enters the country increased up to 35%; therefore, the total surplus from corporations decreased by 42%. If the adjustments of inventory valuation (IVA) and capital consumption (CCA) are not taken into consideration, the evolution deepens the volatility. The profits from corporations and non-financial corporate businesses increase by 309% and 550%, and decrease by 73% and 55%, respectively.[12] Therefore, using the profitability levels of the mass and the rate of profit, it can be asserted that in general terms it has experimented a decrease of –40% between 2006 and 2008, which could be even greater if we do not take into consideration the external receipts of capital and the adjustments for IVA and CCA.

In Table 2, we observe a periodization according to that established by the NBER to determine expansions and recessions. The list of different expressions of the corporate surplus indicates that the rupture point occurs four quarters before the beginning of the crisis.[13] In the quarterly variation rates, only interests and the external capital balance from the rest of the world show a different evolution, while in terms of inter-annual variation, the peak would be reached between 2006Q3 and 2006Q4. Thus, the crisis comes preceded by a fall in the profitability of capital.

In the same table, we can verify the quarterly evolution of investment. The private fixed investment had an inter-annual increase of 2% during the growth period, which is equivalent to a sixth of the after-taxes profits from non-financial corporations. The decrease of the private fixed investment started in 2006Q2, after reaching its peak in the first quarter of this very year, or six quarters before the beginning of the crisis. Nevertheless, the non-residential investment continued to increase until 2007Q4/2008Q1, the moment in which it decreases by 20% until the last trimester of 2009. As a result, we observe that the profits from corporate businesses are debilitated around 4–5 trimesters before the non-residential investment starts falling. But the importance of residential investment and its link with profits, as well as the "late" fall in the non-residential one, require us to address in the next section the particular moment in which the crisis outbreaks.

The Emergence of the Crisis

The form under which the insufficient capacity to generate surplus value triggers the crisis demands taking into account the specifics of the model of accumulation, because the failure of continuing with investment relies on conjunctural factors (institutions, types of assets, external elements, etc.).[14] The housing bubble has generated a very particular relationship between investment and profitability, so the outbreak of the crisis requires integrating both the elements of the accumulation process of previous sections (pp. 189–192) with those of the asset bubble.

Table 2 Average Rates of Growth of the Mass of Profit and Corporate Investments (%)

Profits and investment	*2001Q3/2007Q4*	*Quarters with respect to 2007Q4*							*2007Q4*	*2007Q4/2009Q2*
		−7	*−6*	*−5*	*−4*	*−3*	*−2*	*−1*		
A. Quarterly rates of growth										
Profits										
Domestic corporate business										
Net operating surplus	1.28	3.55	0.88	3.39	−5.61	−5.76	2.23	−7.44	−5.86	−1.09
Net interest	0.34	17.63	12.81	8.03	8.23	6.15	8.50	12.28	12.90	−3.90
Corporate profits (1)	1.77	3.51	0.15	2.76	−7.19	−8.32	1.74	−10.57	−9.00	−1.27
Profits after tax	1.36	3.90	−0.94	2.23	−7.07	−13.60	3.99	−11.99	−11.18	2.32
Non-financial corporate business										
Net operating surplus	1.72	1.65	−0.72	6.87	−4.99	−2.76	2.28	−7.72	1.12	−3.31
Corporate profits (2)	2.70	2.62	−0.95	8.11	−7.44	−4.86	1.38	−11.94	−0.57	−5.02
Profits after tax	2.45	5.12	−3.02	8.97	−6.65	−8.12	3.63	−13.84	−1.65	−3.13
Financial	−0.82	5.25	2.58	−9.74	−5.26	−19.40	3.44	−5.02	−33.15	9.06
Rest of the world	3.85	3.42	2.57	−2.43	8.93	3.73	11.91	16.24	13.53	−4.81
Corporate profits (3)	2.27	3.49	0.51	1.96	−4.81	−6.29	3.64	−5.16	−3.42	−2.24
Investment										
Private fixed investment	0.51	2.09	−0.88	−1.02	−1.01	−0.18	0.26	−0.61	−0.87	−4.11
Non-residential	0.89	3.69	1.25	1.19	0.65	1.72	1.96	1.55	1.69	−3.29
Residential	−0.41	−0.93	−5.03	−5.58	−4.67	−4.56	−4.00	−6.37	−8.30	−7.09

Profits and investment	*2001Q3/2007Q4*	*Quarters with respect to 2007Q4*							*2007Q4*	*2007Q4/2009Q2*
		−7	*−6*	*−5*	*−4*	*−3*	*−2*	*−1*		
B. Inter-annual rates of growth										
Profits										
Domestic corporate business										
Net operating surplus	5.20	12.31	12.02	16.05	1.95	−7.21	−5.97	−15.82	−16.05	−51.09
Net interest	1.36	56.81	66.71	62.61	55.15	40.00	34.65	39.95	45.98	−53.90
Corporate profits (1)	7.26	12.17	11.29	14.71	−1.14	−12.44	−11.05	−22.58	−24.10	−51.27
Profits after tax	5.54	13.15	8.89	12.26	−2.22	−18.69	−14.64	−26.51	−29.76	−47.68
Non-financial corporate business										
Net operating surplus	7.07	13.22	6.67	19.25	2.46	−1.98	0.98	−12.80	−7.19	−53.31
Corporate profits (2)	11.25	17.96	9.52	25.34	1.70	−5.71	−3.49	−21.38	−15.54	−55.02
Profits after tax	10.17	22.87	8.29	25.88	3.70	−9.37	−3.15	−23.42	−19.31	−53.13
Financial	−3.26	−0.83	14.96	−8.32	−7.68	−29.30	−28.71	−24.98	−47.07	41.49
Rest of the world	16.31	2.00	5.82	−3.75	12.75	13.08	23.39	46.99	53.19	−17.89
Corporate profits (3)	9.39	10.50	10.41	11.54	0.96	−8.58	−5.73	−12.31	−11.03	−8.65
Investment										
Private fixed investment	2.06	5.55	2.99	0.35	−0.86	−3.05	−1.94	−1.53	−1.39	−15.44
Non-residential	3.61	7.54	7.34	6.66	6.93	4.89	5.63	6.01	7.10	−12.54
Residential	−1.62	1.78	−5.10	−11.37	−15.31	−18.41	−17.53	−18.23	−21.34	−25.49

Source: BEA (2014b, NIPA). See Appendix.

Note: 1 = NIPA 1.14 (11); 2 = NIPA 1.14 (27); 3 = NIPA 6.16 (1); BEA = Bureau of Economic Analysis; NIPA = National Income and Products Accounts.

The limits and contradictions of these dynamics were clear from the foundations of surplus generation process. In the business sector, the product per working hour only increased by 10% between 2003Q1 and the first half of 2006, total working hours increased by less than 5%, and real wages per hour by 4% (Council of Economic Advisers [CEA] B-49). Despite this regressive distribution of income, given that the participation of wages in the aggregated value of corporations fell by four points between 2003 and 2006 (BEA 2014b, NIPA, 1.14), the capacity to generate surplus was not in accordance with the peak of the mass of corporative profits that, after taxes, increased 27% until 2005Q3 and continued to increase until 2006Q3, when it represented 42% more than in 2003Q1.

The crisis arises when the net profit of enterprises is insufficient for the valorization of the existing stock of capital. But this general statement takes particular forms depending on multiple factors according to the model of accumulation, and so involving interests, taxes, wages, capital flows, indebtedness, as well as the institutional framework. In this case, the very need to preserve the role of the dollar required for the US government to maintain monetary stability has to be considered, so the rise in interest rates from mid-2004 (see CEA, Table B-73) had implications for increasing business costs, and also on investment and employment (CEA 2013), as it pushed down the capacity of absorption of this credit-driven demand.[15] Rather than a business profit-squeeze (but also), this was an indebtedness-squeeze, thus contributing to the fall in profitability. Although real unit labor cost remained controlled, when real wages stagnated from 2004Q4/2005Q1 (BLS 2014; CEA B-49), it began to undermine one of the foundations for the viability of this model, the so-called "price-effect," bringing a headlong rush toward loans with less guarantees.[16] As explained before, the connection between valorization and investment took on a particular form, assuming its manifestation in the demand (and financial) side as it became dependent on the indebtedness of housing buyers. Thus, the limits of the bubble were determined precisely by the factors that made feasible the continued demand for mortgage loans.

As shown in Figure 4, the residential investment reached its peak in 2005Q3, after growing 24% since 2003Q1. The housing price reached a maximum during the first half of 2006 according to four of five used indexes, and profits start falling shortly after (Table 2). The decrease of residential investment, therefore, precedes the decrease in the housing prices and the mass of profits, so we see *investment* → *prices* → *profits*. Between 2005Q3 and 2009Q2, the residential investment collapsed, with a sharp fall reaching 57%. Housing prices fell by 22%–23% between the peak and 2009Q2, pushing down the capacity of making profits through securitization and, thus, the whole set of activities linked to the construction sector. This is the reason non-residential investment started falling following the decrease in housing prices and profits, while the stock indexes started their fall later on, in

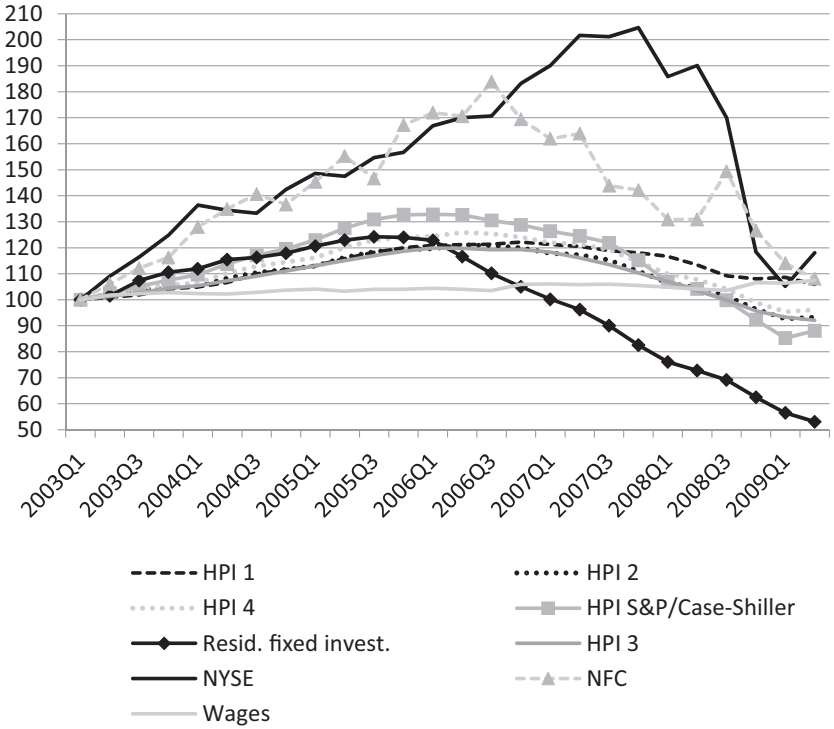

Figure 4 Evolution of Housing Prices and the Fixed Residential Investment: 2003Q1 to 2009Q2, 2003Q1 = 100

Sources: FHFA (2014), S&P/Case-Shiller (2013); BEA (2014b, NIPA, Tables 1.1.4, line 1 and 5.3.3, line 20); NYSE (CEA B-96); profits of NFC (BEA 6.16); Wages: Real compensation per hour in the business sector (CEA B-49).

Notes: HPI 1: all-transactions indexes; HPI 2/3: expanded-data indexes (index_nsa/sa); HPI 4: summary statistics for house prices (average price). Nominal prices deflated by price indexes for GDP. HPI = house price index; NYSE = New York Stock Exchange composite; CEA = Council of Economic Advisers; NFC = non-financial corporations; BEA = Bureau of Economic Analysis; NIPA = National Income and Products Accounts.

October 2007. In the case of the New York Stock Exchange (NYSE) composite, after a rise of 115% from March 2003, the drop reached 53% until March 2009 (see CEA B-96).

In other words, the outbreak of the GR occurs when the mechanism feeding the housing bubble could not continue to stay away from the real foundation of surplus value, that is, abstract labor, but manifested in the impossibility of finding new buyers.

Reflections on Profitability and Crisis

Having explained that the hypothesis sustained in this article makes reference to the underlying fall in profitability, it is true that a smooth decrease was not

observed during the growth period prior to the GR. Rather, it was an abrupt collapse explained by the specific traits of the accumulation dynamic, such as indebtedness and the speculative spiral. Nevertheless, we believe that the evolution of profitability shown in the SNA data does warn, but does not quantify in all its extent, the underlying profitability problem.[17]

We have just described the great capacity that the US economy has shown in appropriating income from other areas and profits obtained from the productive offshoring. But one relevant aspect is the existing relationship between the form adopted by the accumulation process and the accounting record of the macroeconomic magnitudes, especially profit. In the first instance, highly elevated corporate profits obtained during the expansion phase have been *apparent* or *fictitious* in the sense that it depended on the increment of the price of real estate and financial assets in relation to what we can establish, from the Marxist approach, as the real underlying value derived from the surplus productive capacity or, in other words, the social necessary labor time. This "price-effect" does imply, on the one hand, backward and forward sectoral linkages manifested in real valorization already recorded in the SNA, but also it originated transfers of income from the circuit of the house buyers, mainly the salaried class, toward capital. When the crisis emerges, however, they suddenly disappear, revealing their real problem of insufficient generation of surplus value. It happens, however, that the other side of the "fictitious" rise in profits during the boom is the stagnation or fall in wages during the crisis, to which it should be added the collective income transfer through the banking bail-out.

The increase of indebtedness is a by-product of an inflation-assets-driven model that does not greatly foster labor productivity (and wages), given that the "fictitious capital destroys the equality between income and the expenditure of value on which much Marxist analysis is implicitly premised." As it was mentioned, "fictitious capital can itself create forms of profit" (Jones 2013, 10), and that has happened in financial markets and the real estate activity (see Harman 2008; Jones 2013; M. Smith and Butovsky 2012).[18] Ultimately, if the surplus value cannot be created by changes in relative prices, but appropriation of profit did occur, someone else should pay. This is the reason of alluding to a transfer of income from other circuits that usually involve labor to capital.

As a consequence, an overestimation of profitability in the SNA occurred, to which capital gains and the state intervention should be added. When delinquency happened from housing buyers, the underlying assets depreciated. In this case, we can infer the profitability problem from other circuits of income, the expenditure that the government has taken to rescue several institutions or to avoid the depreciation of assets, and that in large part, directly and/or indirectly, falls over either workers' wages and/or part of the rest of the world depending on the implication

of the monetary emissions, the kind of restructuring and international economic relations in which the US economy has a central place.[19] Even so, it is appreciated through the hoarding due to the need of deleveraging and of affronting possible losses derived from toxic assets (Carchedi and Roberts 2013; Norfield 2012; M. Smith and Butovsky 2012; Roberts 2013).[20] Meaning, the separation between profit and investment existing since the crisis does not contradict a problem of insufficient capacity to generate surplus, given that corporate profits accounted by BEA "exclude depletion and capital losses and losses resulting from bad debts," that is, profit from changes in relative prices (BEA 2006, 11).

In this sense, the analysis from A. Freeman (2012) reveals that if we consider the financial assets in the denominator of the profit rate, its evolution would turn out to be negative. Also, and according to Harman (2008), part of the accounting profits registered in the period of the real estate speculation would be a product of certain accounting falsifications to improve the situation of companies in the stock exchange, avoid takeovers or increase the value of the stock options given to high-ranking corporate officers.[21]

Hence, although a detailed analysis of this problematic question and a quantitative approximation that reaches the true deterioration of profitability surpasses the objectives of this article (see Jones 2013), it is important to consider them in order to open new lines of research in the Marxist field, together with the elements mentioned in the second section. Anyway, there are reasons to justify the overvaluation of surplus, and so its monetary expression, profits, in the SNA.

Conclusion

In this article, we have explained that the characterization of the GR from the perspective of profitability requires not only to quantify its different expressions but also to consider a series of elements related to the geographical delimitation of the economy object of study (US), the historical transformations of the world capitalism, and the meaning of a determined accumulation process supported by the speculative boom, as well as the implication for the measurement of profitability. The crisis is a concrete phenomenon and, as such, it gathers multiple determinations and mediations that need to be highlighted and explained to establish the link with the profitability dynamic and, in general, with the fundamental laws of accumulation.

Both the mass and the rate of profit, quantifiable in different manners, have experienced an abrupt decrease from 2006Q3 until 2008Q4 of around 40%. If capital inflows and the adjustments for IVA and CCA are excluded, it would be even higher. The decrease of profitability translated into a stagnation of non-residential investment in 2008Q1, when it can be stated that the GR had already

started, and a decrease after that and until 2009Q4. Nevertheless, the collapse of total investment in 2006Q2 is explained by residential investment, which observed a slight decrease in the two previous trimesters.

It is our statement that it is the existence of masses of profit that do not find the possibility of valorization (an insufficient capacity to generate surplus), which explains that capitals have driven a speculative spiral around residential assets. This accumulation process has generated a weak investment dynamic when we insert it into a historical perspective, with low levels of employment creation and, in consequence, a regressive income distribution. However, labor productivity has grown faster than the capital-labor ratio, although there has been a change in the evolution of price indexes, which has brought as a result a fall in the productivity of capital. This decline, which in turn represents the maximum rate of profit, does break a trend that the US economy had managed to maintain between 1981 and 2003. This particularity relates to the fragmentation of the production process and the financial liberalization that has allowed for the outsourcing of certain lines of the production process, to finance itself at low costs and reduce both the cost of means of production and the labor force. Nonetheless, in 2003–07, these factors, although they have not disappeared, have not worked in the same way as before, given that they did not allow for a continued increase of the productivity of capital.

In turn, given both the speculative dynamic associated with asset securitization and the role of the US in the world economy, the national accounting practices underestimate the underlying profitability problem for different reasons: the methodology itself applied by the BEA in the context of indebtedness associated with the securitization process, the price rise of certain assets based on speculative demand, the government intervention to avoid corporate bankruptcies, certain non-transparent accounting practices applied by corporations, capital inflow into the US and how the burden of crisis could be transferred to other economies, and mainly, the transfer of income from households.

Therefore, we find it necessary to provide qualitative elements complementary to quantitative calculations to elaborate our characterization of the crisis as a phenomenon derived from the general laws of the capital accumulation process.

Appendix

Investment (*I*): private fixed investment by type (residential and non-residential; NIPA, Table 5.3.5. lines 1, 2, and 17), fixed investment as percentage shares of GDP (NIPA, 1.10-8), real private fixed investment (NIPA, 5.3.3-1, 2, and 20).

Labor (*L*): full-time equivalent employees in private industries (NIPA 6.5-3).

Profits (*p*): (1) for the rate of profit in graph 2, corporate profits are profits after tax (NIPA, 1.14-13), and surplus are from NIPA (1.14-3 and 4); (2) in graph 3, profits are from NIPA (6.16-1 and 7), deflated by the price indexes for Gross Value Added of business (13.4-2); (3) following the order in Table 2, domestic corporate business (1) (NIPA, 1.14-8, 9, 11, and 13), corporate profits (2) of non-financial corporate business (1.14-24, 27, and 29), financial, rest of the world and corporate profits (3) (6.16-1, 3, and 5). Profits of non-financial corporate business are deflated by the index from NIPA (1.14-17, and 43).

Stock of capital (*K*): net stock of private non-residential fixed assets at replacement cost, and at current (FAT, 4.1-13) and constant prices (4.2-13), and historical cost (4.3-13). For the rate of profit in year t $(p/K)_t$, we use the average of K in (t) and ($t - 1$). A slight error is assumed when using Y/K as Y only takes the corporate sector.

Value added (*Y*): net value added of domestic corporate business (NIPA, 1.14-3).

Wages (*W*): compensation of employees (NIPA, 1.14-4). Wages and salaries per full-time equivalent employee (NIPA, 6.6-3) are deflated by the price indexes for personal consumption expenditures (NIPA, 1.1.4-2).

Price deflators (*P*): price indexes for net value added (NIPA, 1.9.4) of Net Domestic Product (line 1), business (line 2), and the stock of capital (FAT, 4.1, 4.2-13), used for GDP, Y, and K, respectively.

Notes

1. Despite the different theoretical perspectives, it is valid because it refers to the superficial manifestation of the phenomenon (see Tapia 2013). And as this author notes, the periodization of this organization for the US economy coincides with the one for the global capitalism.
2. In order to avoid an excessive list of references and controversies, see Mateo (2013).
3. The value of world exports, at current prices, fell at that moment by 1.11% and 20% per quarter during 2008Q4 and 2009Q1. In inter-annual terms, the decline is 11% in 2008Q3 and above 25% for the first three quarters of 2009 (WTO 2013). Of course, the incidence shows profound asymmetries, both geographical and sectoral, that do not invalidate the global nature of the crisis.
4. For the controversial issue on this term from the Marxian approach, see Mohun (2009).
5. However, it is justified to deflate wages with the general index PY if the perspective of capital is to be emphasized. In this sense, Shaikh (2016) advocates for using the same price index for both capital and profit (product).
6. And despite the higher value of liabilities held by non-residents, which generate the corresponding outflows of income, the US economy receives an amount ranging from 0.3% to 1% of GDP in revenue from the investment in foreign assets. In other words, profitability flowing to the US exceeds those going out despite the value of assets held by US residents being lower (BEA 2012), which complicates the analysis of the trend in profitability and the crisis (see M. Smith and Butovsky 2012).

7. Wages have grown very weakly during the expansion phase, with increased inequality and a decline in the share of wages in national income. In turn, the elasticity of wages to GDP was 0.75 between 1995 and 2007, but with a downward bias, so that the gap between the growth of GDP and wages has been widening (ILO 2008). This reconfiguration of the capital-labor ratio has been one of the key elements that have driven up the profitability of capital.
8. "*K*" stands for non-residential stock of fixed capital in net terms (see the Appendix), although the results are very similar with both gross and net terms in the series of "*K*." Note that it represents the lowest level of capital accumulation since 1950, even when compared with decadal periods that include recessions.
9. The last decade is also anomalous as it has been, paradoxically, the one that has experienced a higher growth of *K*/*L*, although originated from another unusual phenomenon, the fall in employment.
10. The 21%–24% for the whole economy. Herein after, if we do not specify otherwise, the data shown will be those corresponding to after-taxes rate of profit of corporate businesses, with capital stock at replacement cost.
11. Note that in the precedent expansion phase, the decline was somewhat lower (41%–43%) and lasted from 1997 to 2001. In the case of surplus, the decline would be 24%.
12. BEA (2014b, NIPA, Table 1.14, lines 33 and 38).
13. By saying four quarters before the beginning of the crisis in 2007Q4, it means that 2006Q3 is when the peak is reached and 2006Q4 is when we observe a decrease, as shown in Table 2.
14. And it should be noted that it is not the objective of the article, so this question is analyzed only as it is related to the above-mentioned proper aim: the study of the underlying profitability crisis and the way it is manifested in the US economy.
15. The rise in interest rates and its implications for the net profit of enterprise are a consequence of the falling profitability, as the value production needs a stable unit of account to develop this function.
16. In fact, in 2006 there was a boom of securitization in the segment called "subprime" that preceded the collapse of this activity.
17. In fact, the rate of profit shown in the National Accounts has been, curiously, the macroeconomic variable with the best performance in recent decades (A. Freeman 2012), and according to Kliman (2011, 138–39), it makes "the performance of US capitalism in recent decades appear better than it actually was."
18. It is also necessary to take into account "the increasing transfer of debt from the books of non-financial corporate businesses to 'special purpose vehicles'" (Moseley, n.d.).
19. In other words, the underlying problem of surplus value generation is temporarily hidden by changes in relative prices, the inflation of residential asset prices, in relation to the labor-time values (see Potts 2010).
20. Norfield (2012, 115) states that

    > this recovery in profits was due to the biggest speculative bubble in US history. Much of the recorded extra profit will either have been a result of the credit-fueled spending of the time, or will have reflected transient gains in financial market-values that companies reported as income.

21. Harman (2008) himself points out that the official US statistics incorporate into the accounts of "Flow of funds" certain adjustments that have meant an extraordinary increase in the net wealth of the country by adding "statistics discontinuities" and increasing property values. In 2005–06, they accounted for one-fifth of the increase in the net worth for the entire sector.

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