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Profitability Capital Accumulation and Crisis in the Greek Economy 1958–2009: a Marxist Analysis

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ABSTRACT *This study examines the behavior of the main Marxian variables in the postwar Greek economy. The different phases of the capital accumulation process are distinguished and analyzed according to the movement of the rate of profit. The 'golden age' of the 1958–74 period of high profitability and strong growth was followed by the stagflation crisis of the 1970s and early 1980s. After 1985, and especially after 1991, the 'neoliberal solution' to the crisis resulted in a modest recovery of profitability, capital accumulation and output growth based exclusively on the huge increase in the rate of exploitation for labor. When the stimulus to aggregate demand provided from debt driven personal consumption and state deficit spending was removed, the underlying structural crisis in the real economy manifested itself fully in 2009 and after.*

1. Introduction

One of the most crucial issues raised by the latest economic crisis is the question about its nature and its origin. From the beginning of the crisis, the question arose about whether it was a potentially system-threatening crisis similar to previous ones such as the Great Depression, or a unique, conjunctural crisis arising mostly from mistaken policies or irrational and unregulated individual behavior. This question has become even more important lately, as it appears more and more evident that the crisis that started in 2007–2008 is in no way over, and the possibility of a prolonged economic downturn across the entire world capitalist economy appears to be very serious. Moreover, if the crisis belongs to the first variety, how does it relate to the different versions of crisis theory within the Marxist tradition?[1]

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[1]Devine (1987) and Shaikh (1978) provide an overview of Marxist theories of crisis.

In the general literature, the majority of views have focused on the financial sphere, stressing the point that the financial meltdown in 2007–2008 in most advanced economies was caused by the gradual deregulation of the financial system over the past 30 years. In the mainstream literature, neoclassicals blame individual behavior and the greed of bankers in particular, while neo-Keynesians, in addition to the lack of regulation of the financial system, blame insufficient stimulation of aggregate demand as the fundamental causes of the crisis.[2] On the other side of the theoretical spectrum, radical economists and certain Marxists blame the institutional arrangements and the consequent results of neoliberalism (but not necessarily capitalism as such) as responsible for the current crisis. In this respect, the current crisis is viewed as the culmination of contradictions inherent in the neoliberal regime (see Kotz, 2008, 2009). The neoliberal regime is considered as that institutional structure which followed the 'Keynesian compromise' of the postwar 'golden age', constructed on the basis of the following constituent pillars.

(a) *Increased class inequality and income inequality*. A radical shift in the distribution of income occurred in favor of capital, as wage growth systematically lagged behind productivity growth, after the rise in unemployment and the defeat of the labor movement in the late 1970s and early 1980s. Thus, there was both an increase in profits relative to wages, as well as an increase in income inequality among households as compensation of top managers skyrocketed relative to average wages.
(b) *Financialization*. There was an extensive deregulation of the financial system, which is viewed either as a cause or as an effect of the process of financialization of the economy, a term that describes the rise of financial capital and its dominance over other sections of capital and the whole economy, after the crisis of the 1970s.
(c) *Accumulation of debt and creation of asset bubbles*. Huge increases in debt (public as well as private) occurred as a combined result of the above two developments. First, supply of credit was provided more easily and at the same time demand for loans increased substantially, to compensate for stagnant or falling real wages. Asset bubbles first in stocks and then in the real estate sector were induced from the easy money policy. For a while, the increase in debt and the wealth effects from asset bubbles covered the deficiency in aggregate demand stemming from the unequal income distribution. However, when this process got out of hand as banks overextended credit to the less creditworthy sections of the population, the system crashed and its most crucial layer, the banking system, almost went bankrupt needing serious help from the state. This turn of events explains partly the focus on the phenomenon of financialization and the financial aspect of the crisis, by many authors in the literature.

[2]Especially in Europe, the role of the European Central Bank and its restrictive monetary policy along with the lack of a sizeable budget in the Eurozone are often emphasized as the causes for slow growth by Keynesian and Post-Keynesian authors, and leftist political parties.

Although not often explicitly stated, it is evident from the above that this view bears many similarities to an essentially underconsumption theory of crisis (Bellofiore & Halevi, 2010, p. 25, make a similar point), since if one goes beyond the financial sphere, the fundamental cause of the crisis appears to be the inequality of income and the consequent low purchasing power of workers. This historical and analytical account is sometimes embedded in a Social Structures of Accumulation (SSA) theoretical framework, as in Kotz (2003, 2010), where a neoliberal SSA is postulated based on the three pillars mentioned above (inequality, asset bubbles, financial speculation) with all three developments being mostly conjunctural, that is, not inherent in the process of capitalist development.

On the contrary, for Marxist analysis this crisis is not just a conjunctural event or the outcome of some policy mistakes but rather a product of the normal workings of the capitalist economy, which suffers from time to time from a breakdown of the accumulation process (Laibman, 2010). Crisis is a periodic result of the inherent mechanisms at work in a capitalist economy and not the result of wrong policies or exogenous shocks. Even though the characteristics of the neoliberal institutional structure described above are not disputed, a more thorough Marxist analysis of the behaviour of a capitalist economy requires their integration in an analytical scheme, which includes the explicit consideration of the rate of profit and its constituent elements as well as its evolution over time.

Other Marxist authors, despite their differences, base their discussion of the neoliberal period and the explanation of the current crisis, on the detailed examination of the rate of profit (Bakir & Campbell, 2009; Brenner, 2006; Laibman, 2010; Mohun, 2006; Moseley, 1992, 1997; Shaikh, 2011). In their work, a crucial common element emerges, which is the incomplete recovery of the rate of profit during the neoliberal period, and the fact that even this partial recovery was caused mainly by the attack on wages and labor costs in general.

A different position is that adopted by Duménil & Lévy (2010) who deny both the insufficient profitability of capital and underconsumption as the fundamental cause of the crisis. In their view this is a crisis of overconsumption (especially of the upper classes) and underaccumulation (due to the financialization of the economy) which produced trade deficits and excessive indebtedness for the US economy. That was an 'unsustainable trajectory', which resulted into a crisis of neoliberalism as a distinct social order in the form of the crisis of 'financial hegemony' in the US and then affected the entire world capitalist economy. Duménil & Lévy place emphasis on the (successful) efforts of capitalists to obtain higher incomes and not on the (unsuccessful) efforts by capital and governments to increase substantially the profitability of capital that is, the rate of profit.

We believe that in analyzing the development of the postwar Greek economy and tracing the roots of its current crisis the examination of the behavior of the rate of profit and other Marxian variables is very important. The discussion of the crisis of the Greek economy is muddled by the simultaneous existence of a number of problems. Some of them stem from its participation in the Eurozone (the adoption of a hard currency caused trade deficits, but also helped in establishing low interest rates which facilitated lending) while others have to do with fiscal imbalances in

the form of high public deficit and public debt ratios to GDP, financial fragility, huge income inequalities, as well as sluggish investment and capital accumulation. Hence, there exists a need to disentangle those issues and possibly bring to light the fundamental underlying cause of the crisis. In this way, developments such as financialization, excessive borrowing and high public deficits appear not as autonomous developments but rather as systemic responses to the fundamental problems of insufficient profitability and weakness in capital accumulation. In the next section we present the empirical method applied in the context of the Greek national accounts in order to estimate the main Marxian variables. The third section presents our empirical results discussing the trajectory of the postwar Greek economy, and the fourth section presents our conclusions.

2. Empirical Method

Applying the method outlined in the pioneering work of Shaikh & Tonak (1994), and using the data of the National Accounts of Greece and other official publications such as the Labor Force Survey and the Survey of Labor Costs, we construct the main Marxian categories in the postwar Greek economy, in the following way.[3]

Marxian net value added (*MNVA*) in the non-agricultural sector of the Greek economy is defined as the sum of: (1) the net of depreciation value added in the production sectors[4] (NVA_P); (2) the net value added in the Trade and the Finance, Insurance and Real Estate sectors ($NVA_{trade} + NVA_{fire}$); and (3) the intermediate inputs of the trade sector (II_{trade}), and (4) the indirect business taxes net of subsidies (*NIBT*).[5] We exclude from Marxian net value added, the value added in the Public Administration and Defense sector of the National Accounts. This is the wages of public employees, financed by taxes which have already been taken into account in the value added of the other sectors. We also exclude the net value added in the Dwellings sector, since it does not represent actual creation of new value, but rather it is consisted entirely from imputed rent:

$$MNVA = NVA_P + NVA_{trade} + NVA_{fire} + II_{trade} + NIBT \tag{1}$$

$$MNVA = V + S + SEI \tag{1a}$$

On the income side, as seen in equation (1a), Marxian net value added is constituted from three parts, the first being variable capital in a strict sense (V), namely the total compensation of *productive laborers*. Those productive laborers create the second element of net value added, surplus value in a strict sense (S).

[3]See also Cronin (2001) and Maniatis (1996, 2005) for earlier applications of this method in the New Zealand and Greek economies.

[4]Those include mining and quarrying, manufacturing, electricity, gas and water supply, construction, hotels and restaurants, transportation and communication, health, education and other community, social and personal service activities.

[5]This follows closely the definition of net value added in Shaikh & Tonak (1994), which is based on the Marxian notion that value is created in the production sphere and then it is realized in the circulation and the financial sphere without changing its aggregate magnitude. In the circulation and realization of the total social product, the costs incurred in the trade and financial sectors (wages, materials, etc) are regarded as deductions, paid from the surplus value created in production.

The third part is the income of self-employed people (professionals, simple commodity producers, and so on), and small employers (*SEI*), a populous category in the Greek economy especially during the first years of the period examined.[6] This income can be divided into a wage equivalent income (*WEQ*), which is found if we multiply the number of self-employed and small employers by the average wage in each sector, and the rest, which is property type income, or profit equivalent (ΠEQ). Furthermore, the wage equivalent income is constituted from a wage equivalent portion in the production sectors (*PWEQ*), and the sum of the wage equivalent portion in the non-production sectors, plus the wage equivalent of self-employed people engaged in non-production activities (supervision, etc) in the production sectors (*UWEQ*):

$$SEI = \Pi EQ + WEQ = \Pi EQ + PWEQ + UWEQ \tag{2}$$

Adjusted variable capital (V^*) is the sum of wages and salaries of productive laborers (V) plus the wage equivalent income of the self-employed and small employers in the production sectors (*PWEQ*). Productive laborers are defined as the wage laborers in the production sectors who are classified as manual laborers, technicians and scientific personnel in the annual editions of the Labor Force Survey. The rest of the wage employment in the production sectors performing clerical tasks, supervisory labor, circulation activities, and so on, is classified as unproductive labor, and its remuneration is considered as part of surplus value (W_{PU}). Calculating the average wage of productive laborers in each one of the production sectors, and multiplying it by the amount of self-employed and small employers in each sector, we get the wage equivalent income in the production sectors. This is added to the wages of productive laborers in order to get adjusted variable capital:

$$V^* = V + PWEQ \tag{3}$$

Adjusted Surplus Value (S^*) then, is simply the difference between Marxian net value added and adjusted variable capital. This means that it can be expressed also as the sum of surplus value in a strict sense (S) plus the profit equivalent part of self- employment income plus the wage equivalent of self-employed and small employers engaged in non-production activities in the production sectors and those active in the non-production sectors:

$$S^* = MNVA - V^* = S + \Pi EQ + UWEQ \tag{4}$$

Alternatively, adjusted surplus value is equal to the sum of profits in the production sectors (Π_P), profits in the trade and the FIRE sectors ($\Pi_{trade} + \Pi_{fire}$), the profit equivalent of self-employment income, intermediate inputs in the trade

[6]In Greek National Accounts, self-employment income and income of unincorporated enterprises are reported together with profits and other property income in the category, Gross operating surplus/mixed income. Therefore, we have to adjust this latter category in such a way so as to reflect only the appropriate measure of profits.

sector, wages of unproductive labor in the production sectors, wages of unproductive labor in the non-production sectors of trade and FIRE ($W_{trade}+ W_{fire}$), wage equivalent in the non-production sectors and net indirect business taxes:

$$S^* = (\Pi_P + \Pi_{trade} + \Pi_{fire} + \Pi EQ) + \Pi_{trade} + \\ \left(W_{PU} + W_{trade} + W_{fire} + UWEQ\right) + NIBT \tag{5}$$

The rate of surplus value (*RSV*) is the ratio of adjusted surplus value over the adjusted variable capital:

$$RSV = S^*/V^* \tag{6}$$

The rate of surplus value changes over time according to the changes in productivity ($y = MNVA/Np$) and the real wage for productive labor ($\omega = V^*/Np$) where $Np =$ hours worked by productive labor.

$$S^*/V^* = (MNVA - V^*)/V^* = \left(MNVA/Np - V^*/Np\right)/\left(V^*/\mathrm{Np}\right) \\ = (y - \omega)/\omega \tag{7}$$

Profits (Π) are estimated when we subtract from adjusted surplus value the intermediate inputs of the trade sector, wages of unproductive laborers in the sectors of Trade and Fire, Insurance and Real Estate, also wages of unproductive laborers in the production sectors, the wage equivalent in the sectors of Trade and Fire, Insurance and Real Estate, and net indirect taxes.

$$\Pi = S^* - \Pi_{trade} - \left(W_{fire} + W_{trade} + W_{PU} + UWEQ\right) - NIBT \tag{8}$$

In other words, total profits are

$$\Pi = \Pi_P + \Pi_{trade} + \Pi_{fire} + \Pi\, EQ \tag{8a}$$

The Marxian general rate of profit (R) which expresses the maximum possible profitability of the system, without taking into account the costs for unproductive activities, is the ratio of the adjusted mass of surplus value over the non-agricultural non-residential private capital stock (K). Its movement over time depends on the changes in the rate of surplus value and the organic composition of capital.

$$R = S^*/K = \left(S^*/V^*\right)/\left(K/V^*\right) \tag{9}$$

The general Marxian rate of profit is the upper bound of the actual rate of profit, and it is the measure of profitability for which Marx derives the law of the falling rate of profit in Volume III of *Capital*. The net rate of profit (r) is the ratio of profits over the non-agricultural non-residential private capital stock. It expresses the net return on invested capital, and it influences the investment decisions of capitalists,

$$r = \Pi/K \tag{10}$$

Also,

$$r = (S^* - UC)/K = \left(S^*/V^* - UC/V^*\right)/\left(K/V^*\right) \tag{10a}$$

where, $UC = UL + UCS$, with $UC =$ total unproductive costs which equal the sum of unproductive labor compensation ($UL = W_{fire} + W_{trade} + W_{PU} + UWEQ$) plus other costs of circulation, plus net indirect taxes ($UCS = \Pi_{trade} + NIBT$).

Obviously, when the ratio of unproductive costs to variable capital rises over time, the net rate of profit will be falling faster than the general Marxian rate of profit. The net rate of profit, r can also be expressed as the product of the profit share (Π/Y) and the output/capital ratio (Y/K):

$$R = (\Pi/Y)(Y/K) \tag{11}$$

where $Y =$ net national income, the sum of wages and profits. The first term reflects developments in distribution, and the second in capital intensity and technical change. It should be noted though that the profit share and the profit/wage ratio may not move in step with the rate of surplus value.[7] This could happen, for example, when the ratio of unproductive labor to productive labor compensation (UL/V^*) rises fast enough to offset a rise in the rate of surplus value and induce the profit/wage ratio (and profit share) to fall or rise less than the rate of surplus value, as can be seen in equation (12).

$$\begin{aligned} &\Pi/W = (S^* - UL - UCS)/(UL + V^*) = \\ &\left(S^*/V^* - UL/V^* - UCS/V^*\right)/\left(1 + UL/V^*\right) \end{aligned} \tag{12}$$

The increase in the capital/output ratio (Y/K) over time constitutes the sufficient condition for the rate of profit to fall (see Laibman, 2010; Shaikh, 1987). It can also be expressed as follows:

$$K/Y = \left(K/Np\right)/\left(Y/Np\right) \tag{13}$$

namely, as the ratio of capital intensity or technical composition of capital (K/Np) and the productivity of labor (Y/Np). When mechanization does not increase the productivity of labor sufficiently, then the capital/output ratio will rise and this sooner or later will lower the rate of profit despite any increases in the rate of surplus value.

Finally, we estimate what Marx calls the rate of profit of enterprise (r_e), that is, the net return to enterprising, active capital. This is found by subtracting the guaranteed return of the real interest rate, which could be earned even if the capital remained idle, from the net rate of profit, r:

$$r_e = (\Pi - interest)/K = r - i \tag{14}$$

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[7]Since, $\dfrac{\Pi}{Y} = \dfrac{\Pi}{\Pi + W} = \dfrac{\frac{\Pi}{W}}{1 + \frac{\Pi}{W}} = \dfrac{1}{[1/(\Pi/W)] + 1}$, it is obvious that the two ratios move in the same direction.

Having developed our analytical framework, we turn in the next section to the estimation of the main Marxian variables in the postwar Greek economy.

3. Empirical Results: Distribution, Profitability and Capital Accumulation in Greece 1958–2009

3.1. Profitability and Output Growth

A crucial feature of Marxist analyses is the importance it attributes to the rate of profit in its account of the structure of the capitalist economy. The rate of profit in the postwar Greek economy estimated as described in the previous section is depicted in Figure 1.

The close relation between profitability and output (net domestic product) growth for the entire period examined here is depicted in Figure 2.

It is obvious that, as postulated theoretically in classical and Marxian political economy, the rate of profit is also an empirically important determinant of the pace of economic activity in Greece. In this section therefore, we examine in detail the constituent elements of the rate of profit and especially those that have to do with developments in technology and distribution.

3.2. Distributive Struggles between Capital and Labor

During the 1958–73 period, the rate of surplus value and the profit share fluctuated mildly, exhibiting a more or less constant trend first, and then they rose steadily during the seven years of the military dictatorship (1967–74) as labor unions were suppressed and all political parties were outlawed.[8] As a result of the total domination of labor by capital during this period, in 1973 both ratios were standing above their 1958 value (see Figure 3).

The restoration of parliamentary democracy in 1974 almost coincided with the outbreak of the international crisis of stagflation of the 1970s. Then, successful labor struggles and the need of the political system for legitimization resulted in significant increases in the real wage. That was similar to what had happened in distribution battles between capital and labor during the previous decade, in all advanced capitalist economies (Armstrong *et al*., 1991). Hence, the rate of surplus value and even more so, the profit share followed a sharply falling trend, which continued through the years of the first social democratic government of PASOK until 1985. After its re-election in that year, the PASOK government implemented the first of a series of austerity programs, initiating the neoliberal era in the Greek economy and society. The hourly real wage for both the total labor force in the private sector and for productive labor specifically, fell continuously during the first half of the 25-year period that followed. Then, it stabilized during the late 1990s, and started to rise after 2000. As a result of those movements, at the end of the period examined here, the hourly real wage for

[8]Note the difference in the magnitude of the two measures in the two axes. The rate of exploitation is generally much higher than the profit share.

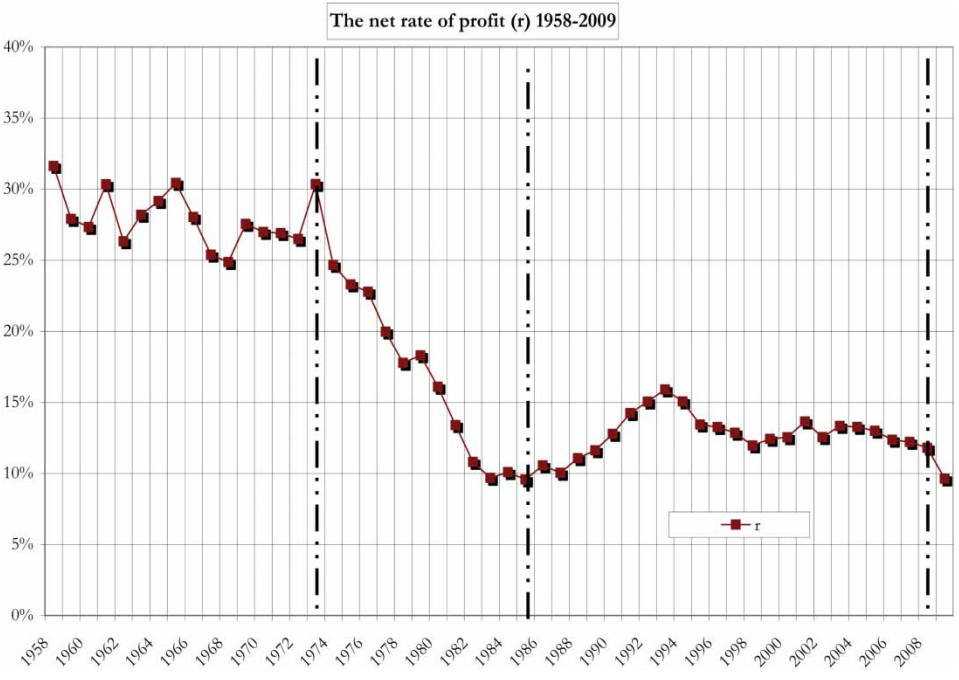

Figure 1. The net rate of profit 1958–2009.

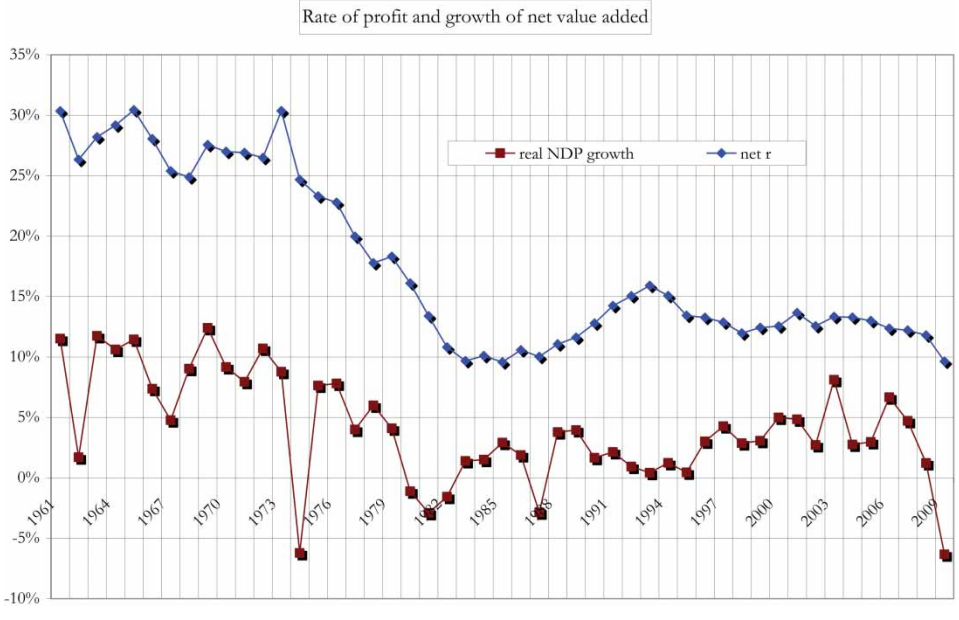

Figure 2. The rate of profit and real output growth 1961–2009.

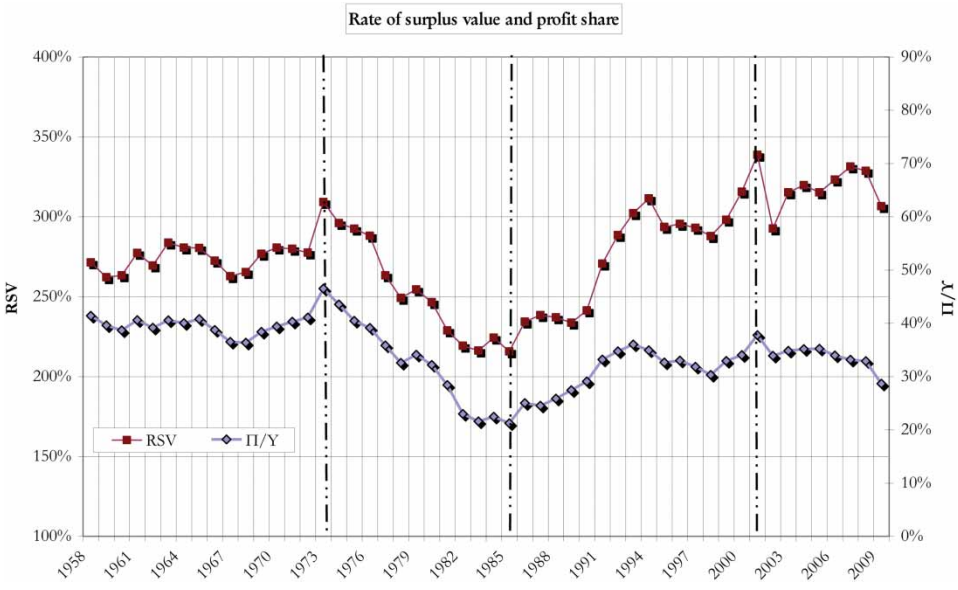

Figure 3. The rate of surplus value (*RSV*) and the profit share (*Π/Y*), 1958–2009.

the total labor force was close to its average value during the mid-1980s (see Figure 4).[9]

Mostly as a result of the long-term stagnation in the real wage since the mid-1980s, the rate of surplus value has been rising continuously ever since (see Figure 3), the only exception being the late 1990s when it remained more or less constant. This substantial increase in the rate of exploitation of labor has happened despite the significant slowdown in productivity growth (see Figure 5) which also started in the early 1980s and lasted at least until 1996. The slowdown in productivity growth, as we will see, was an expected result of the slowdown in capital accumulation, as profitability and output growth stagnated. After 1996, productivity growth picked up as it did in almost all advanced capitalist economies in the late 1990s. This growth (which was accompanied by real wage growth after 2001) was temporarily halted during the 2002–2005 period, before the current crisis erupted. The stagnation in the real wage during almost the entire neoliberal period meant that all the benefits from productivity growth were reaped by capital shifting the distribution of new value in its favor. In Figure 5, we can also distinguish broadly the three phases of development of the real wage. In the first and third phases, rising productivity and falling unemployment rates (during the so-called 'golden age' the fall in unemployment was mostly a result of emigration of huge segments of the Greek labor force) allowed considerable increases in the real wage. On the contrary, during the latter part of the stagflation crisis and the first period of neoliberalism (1980–

[9]Real wages rose somewhat even in 2009, the first full year of the crisis, but they have fallen dramatically in the three years that followed.

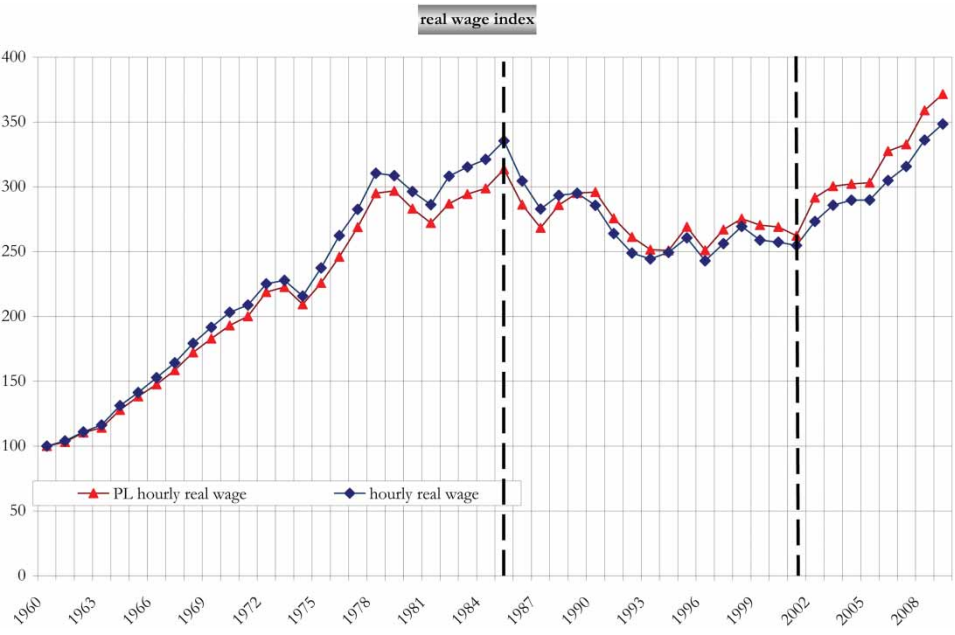

Figure 4. Real wage index for total labor force and productive labor, 1960–2009.

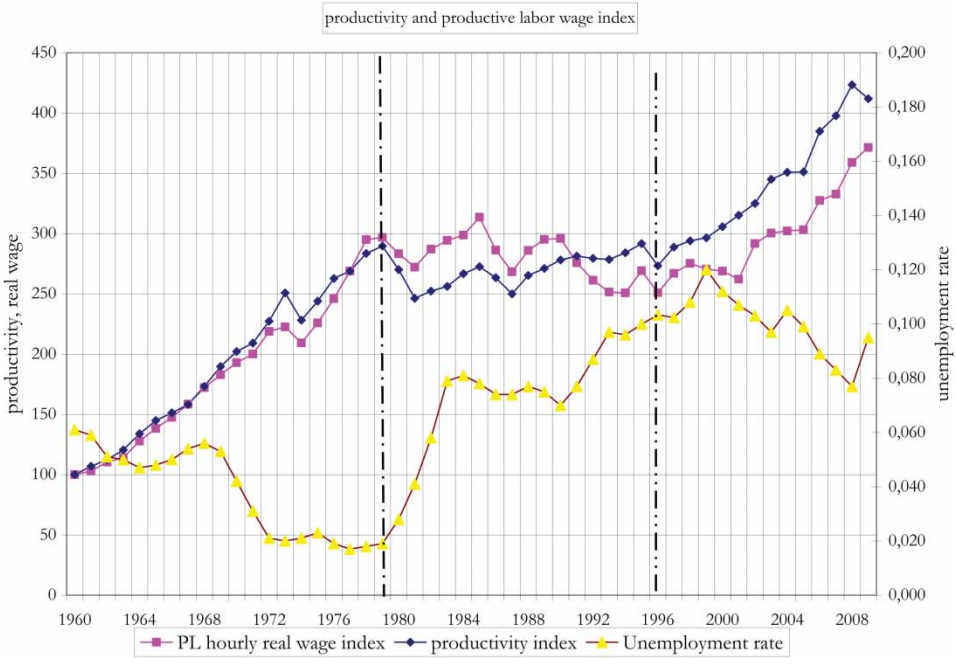

Figure 5. Unemployment rate, labor productivity index and real wage index for productive labor, 1960–2009.

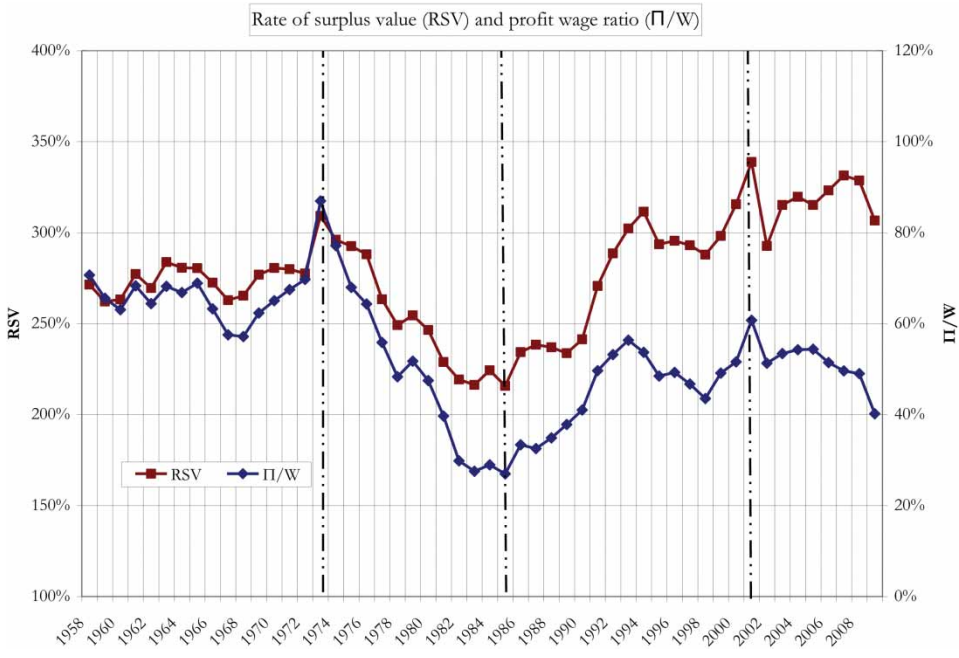

Figure 6. Rate of surplus value and profit-wage ratio, 1958–2009

96), increasing unemployment rates and stagnant productivity produced a falling real wage trend.

Thus, the rate of surplus value had surpassed its highest value during the 'golden age' already in the early 1990s, and it currently stands at a level significantly higher than its average value in the 1960–73 period. Neoliberalism has been more effective than the military dictatorship in raising the rate of exploitation of workers. On the contrary, the profit share and the profit-wage ratio (see Figure 6) which have been moving mostly in the same direction with the rate of surplus value, have not recovered their average value in the 'golden age' despite their substantial rise during the neoliberal period. The increases in the profit share and the profit/wage ratio also have to do with the fact that productivity growth exceeded real wage growth. However, another development in the structure of the economy tempered the rise in both those ratios compared with the rise in the rate of surplus value.

3.3. The Significance of Unproductive Labor

The difference in the behavior of the rate of surplus value as compared with the other two distributive ratios during the second half of the period examined, has to do with the significant rise in the ratio of unproductive labor relative to productive labor compensation since 1980 and especially since 1990. As shown above in equation (12), when the ratio of unproductive to productive labor compensation rises fast enough, then a rise in the rate of surplus value can be

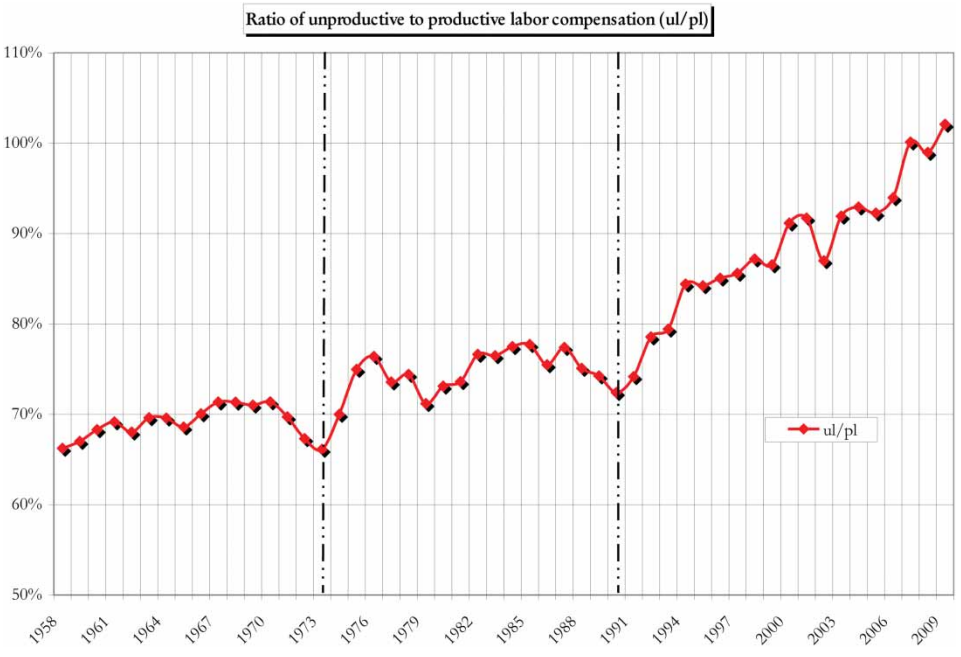

Figure 7. Ratio of unproductive labor to productive labor compensation

moderated or even reversed entirely, producing a profit wage (and profit share) ratio that could be rising less than the rate of surplus value or even have a falling trend.[10]

In Figure 7, we observe that this is exactly what happened in the Greek economy. Starting in the 1980s and especially after 1990, the trade and finance activities (public sector employment, which also increased is not taken into account here) in particular, increased markedly as the Greek economy, like all advanced capitalist economies, was being transformed into a service economy.[11] Thus, the effect on profits of the spectacular rise in the rate of exploitation was dampened by the rise in the ratio of unproductive to productive labor. As a result, the mass of profits did not rise as much as the rate of exploitation, affecting as we will see the rate of profit and investment.

3.4. Technical Change and the Capital/Output Ratio

As we have seen, all three measures of inter-class distribution showed a significant shift in the distribution of income in favor of capital during the neoliberal era. Was this huge rise in the rate of exploitation sufficient to restore the profitability of capital and create the conditions for a process of

[10]If we abstract from unproductive costs other than unproductive labor (U), this relation can also be expressed in the following way: $\Pi/W = (S - U)/(U + V) = (S/V - U/V)/(1 + U/V)$.
[11]Of course, production services such as transportation and telecommunications increased as well.

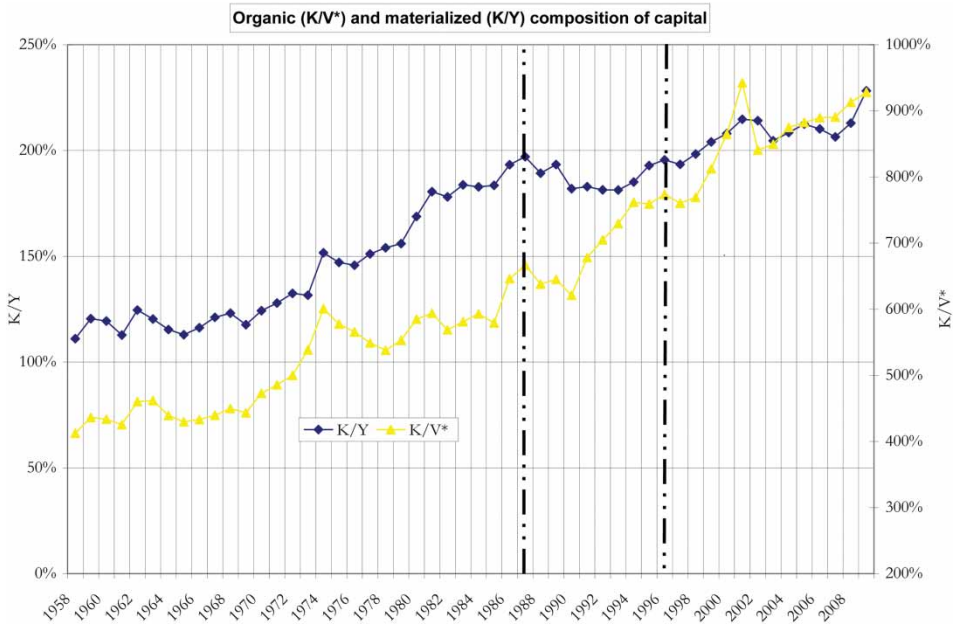

Figure 8. Organic composition of capital and capital/output ratio

rapid capital accumulation similar to that of the 'golden age'? The behavior of the rate of profit, except from the change in the distributive variable (rate of surplus value or profit share) also depends on technological change, which is reflected in the evolution of the organic composition of capital and more importantly on the behavior of the capital/output ratio, *K*/*Y*. The rise in the capital/output ratio is the sufficient condition for the (general Marxian) rate of profit to fall. In Figure 8 we see that the organic composition of capital rises throughout the whole period, reflecting the increasing mechanization of the production process. In the same figure we can distinguish three different stages in the movement of the capital/output ratio.

It rose sharply for the entire 1958–87 period. Economists who adhere to the Marxian law of the falling rate of profit would identify the rise in *K*/*Y* as the fundamental cause of the fall in profitability. For the next decade the ratio remained more or less constant, due to the slowdown in both capital accumulation and productivity growth. One of the prerequisites for a deep crisis to end, and for the establishment of the conditions for renewed growth, is the devaluation or destruction of a significant part of the capital stock as firms go bankrupt or are compelled by competitive pressures to accept very low prices. In Greece, as in other capitalist economies, this process did not materialize to a sufficient extent during the crisis period (late 1970s and early 1980s) or in the start of the recovery period (late 1980s). A partial restructuring and devaluation of capital took place only in the beginning of the 1990s (as the right-wing New Democracy party regained power for three years and tried to implement purely neoliberal economic

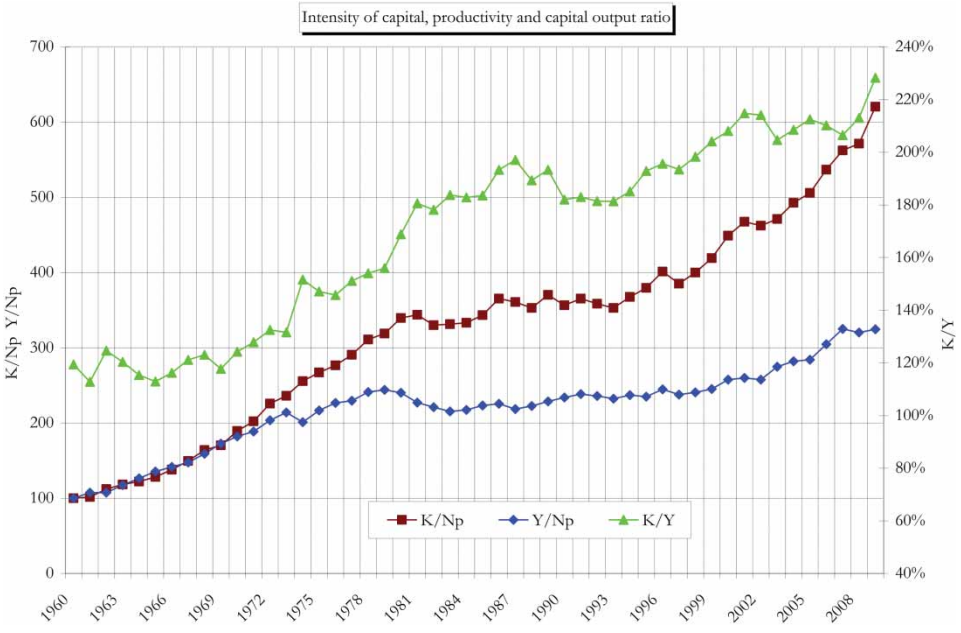

Figure 9. Technical composition of capital index, productivity index and capital/output ratio

measures), but it was not enough to establish the conditions for rapid growth. Then, after 1996, the capital/output ratio started to rise once again but at a slower rate than during the 'golden age', since capital accumulation did not resume its earlier pace. This rise though, is one of the factors that have slowed down the recovery of the rate of profit.

In Figure 9 we depict the constituent elements of the capital/output ratio. It is evident there that the rise in the capital/output ratio was the result of the capital intensity or technical composition of capital (*K/Np*) consistently outpacing the increases in the productivity of labor (*Y/Np*). This happened in every sub-period examined here, except in the stagflation crisis of the 1970s and 1980s when the capital/output ratio remained constant before it started rising again after 1996 as increases in mechanization again surpassed the increases in productivity growth.

3.5. General Marxian Rate of Profit, Net Rate of Profit and Rate of Profit of Enterprise

As a result of the combined movements in the rate of surplus value, the ratio of unproductive to productive labor, the profit share, and the capital/output ratio, the general Marxian rate of profit and the net rate of profit developed over time as shown in Figure 10.

The movement of the net rate of profit delineates the different phases of the process of growth and capital accumulation in postwar Greece. We can distinguish

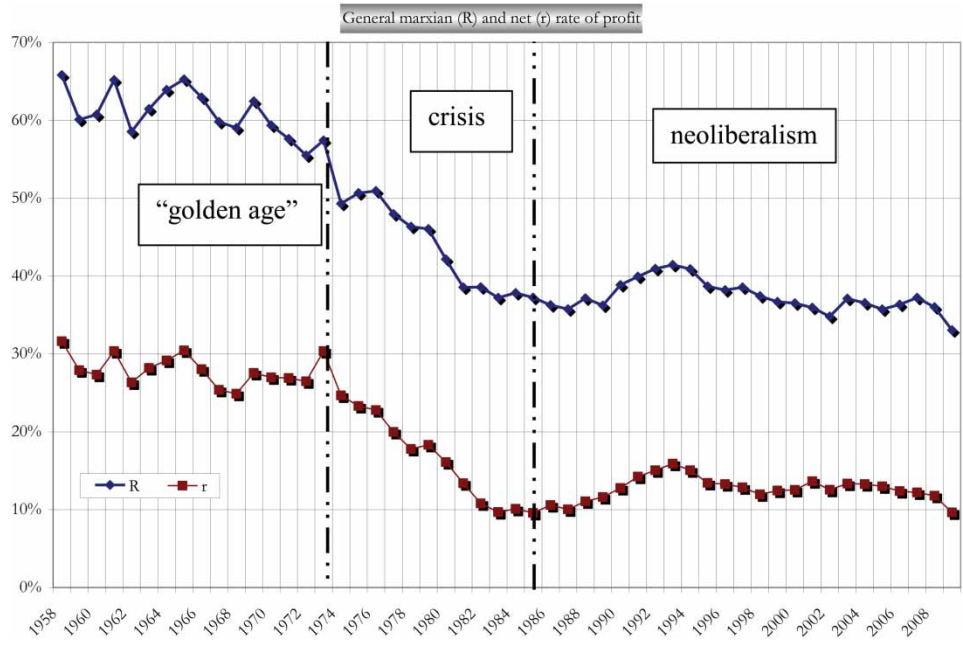

Figure 10. The general Marxian and the net rate of profit 1958–2009

three different stages before the current crisis erupted: (a) the 1958–74 period, which can be characterized as the Greek 'golden age' of capital accumulation with high rates of profit and output growth (see Figure 1 above); (b) the stagflation period of 1974–85, when the international crisis and stagnation of the 1970s hit the Greek economy and its rate of profit fell drastically; and (c) the period of neoliberalism, 1986–2007, which led to a partial recovery of profitability, investment and output growth. Then in 2009 we saw the onset of the crisis which continues today, and which has resulted in a cumulative loss of about 20% of GDP over four years. It should be noted that at the beginning of the period the net rate of profit was approximately one half of the general Marxian rate of profit, whereas in the last year it was less than one third, due to the rise in unproductive labor and other expenses in the non-production sectors such as circulation costs.

In Figure 11 we can also see the different phases of the general Marxian rate of profit determined by the developments in technology and distribution. During the 'golden age' a slightly rising rate of surplus value and a rising capital/output ratio created the conditions for a falling rate of profit *à la* Marx.[12] After 1974, the capital/output ratio kept rising and combined with a sharply falling rate of surplus value resulted in a dramatic fall in profitability. In the mid-1980s profitability bottomed out and for the next decade (1986–96) the rate of surplus value increased dramatically whereas the capital/output ratio remained more or

[12]As shown in Figure 7 above, the organic composition of capital (K/V^*) rose even more than the capital output ratio (K/Y) for the entire period.

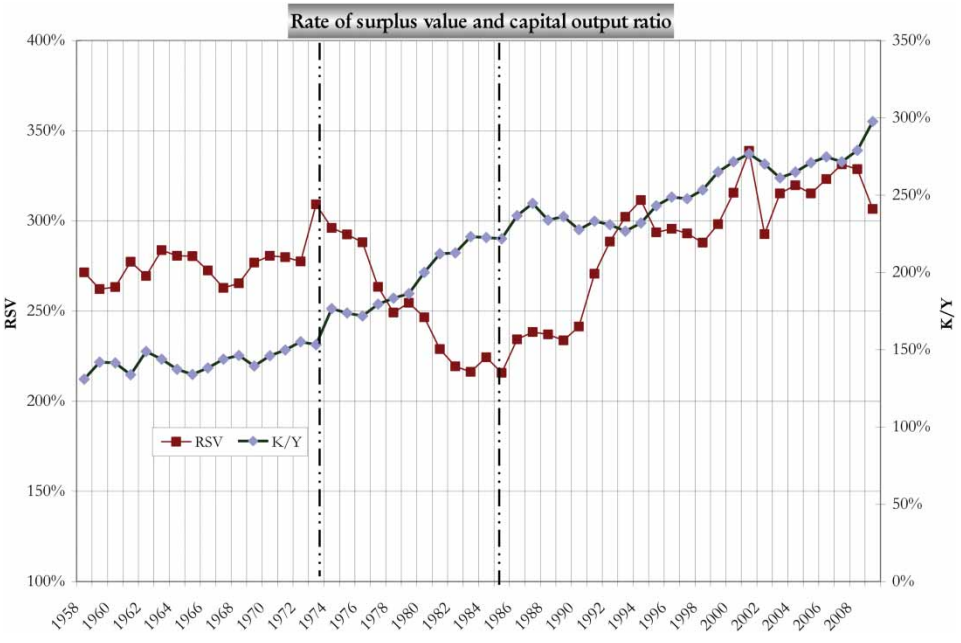

Figure 11. The rate of surplus value and the capital/output ratio

less constant for the first time in the postwar period. Thus, the rate of profit started to recover and peaked around the end of this period. But it remained at a low level (compared with the 'golden age') after 1996, as the destruction or devaluation of capital did not happen, and the capital/output ratio started to rise again, offsetting the positive effect on profitability of the increase in the rate of surplus value.

In Figure 12 we observe a similar picture regarding the constituent elements of the net rate of profit, profit share and capital/output ratio. The only significant difference with the previous analysis has to with the fact that in the latter part of the neoliberal period the profit share does not rise as much as the rate of surplus value. The profit share did not recover its average value during the 'golden age' period (it even fell slightly after 2002), the reason for that being, as we noted above, the substantial rise in the ratio of unproductive to productive labor compensation after the 1990s. Thus, at the end of the period, the net rate of profit had fallen proportionately much more than the general Marxian rate of profit. The first fell by 69.6% of its original value, whereas the second fell by 49.8% for the 1958–2009 period.

Following Laibman (2010) and Shaikh (2011), we calculate a 'counterfactual' rate of profit, that is, the rate of profit that would be obtained in the absence of the neoliberal offensive on labor under the assumption that the profit share had remained constant at its value in 1985. The difference between the actual and counterfactual rates of profit is due to the rise in the profit share (the combined result of the increases in the rate of surplus value and the ratio of unproductive to productive labor) in the post-1985 period. In Figure 13 it is evident that the rate of profit would have been almost half of what it actually was in 2008 if the

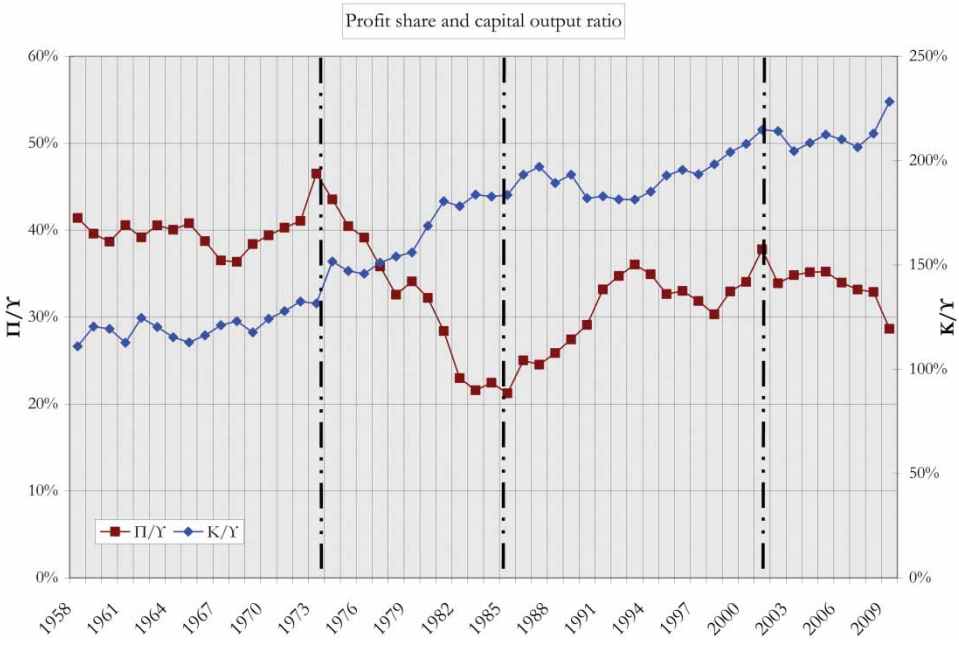

Figure 12. The profit share and the capital/output ratio

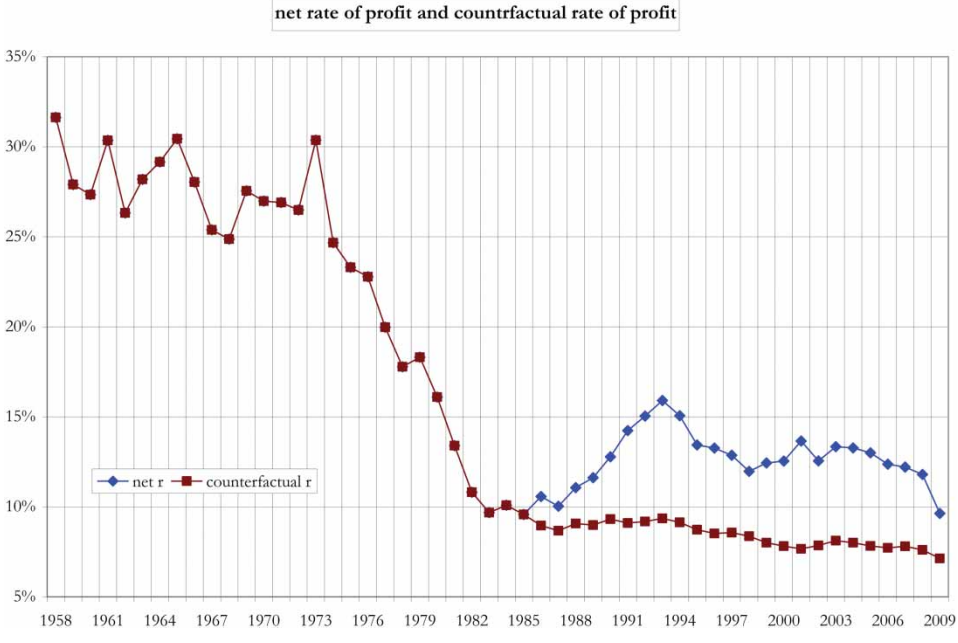

Figure 13. The net rate of profit and the counterfactual rate of profit, 1958–2009

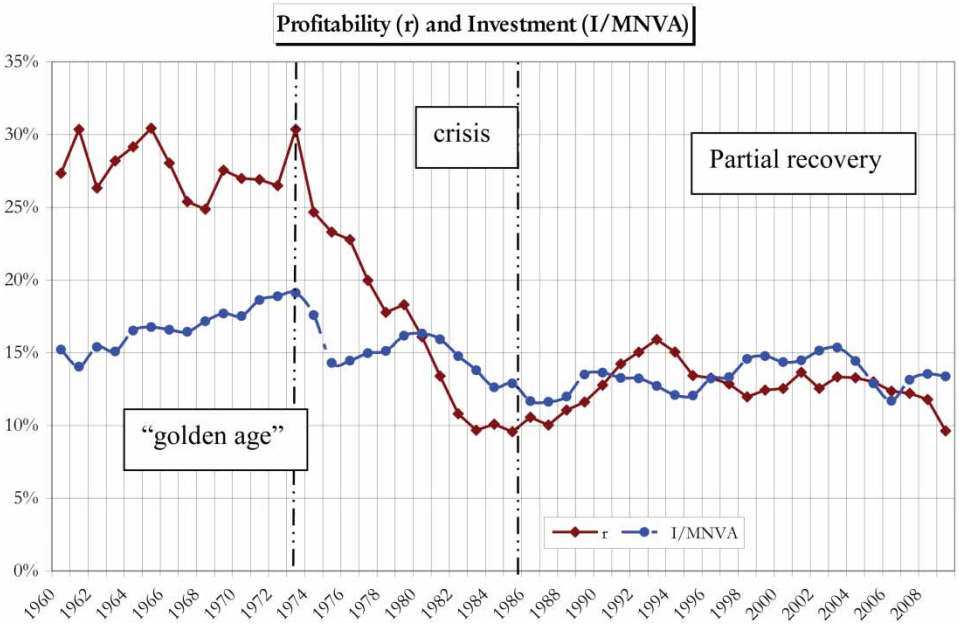

Figure 14. The net rate of profit and the investment share

profit share had remained constant since 1985. The attack on the income of labor was effective in averting a more serious crisis than the stagflation crisis of the 1970s and early 1980s. However, since the other requirements for the achievement of significant increases in profitability did not materialize, the current crisis has been characterized by a much more vicious attack on wages and social benefits for workers.

In both the classical and Marxian economic traditions, profitability is the main determinant of capital accumulation. Thus, one of the main consequences of the partial recovery of profitability was the inadequate recovery of investment activity in the neoliberal era, as shown in Figure 14. It is evident there, that gross nonresidential private investment as a share of net value added followed closely the movement of the profit rate in the postwar Greek economy. Hence, as the rate of profit did not rise sufficiently during the neoliberal period, the investment share remained quite close to its average value during the period of the stagflation crisis.

In a recent paper, Shaikh (2011) has drawn attention to the relation between the rate of profit of enterprise and investment. Marx defines the rate of profit of enterprise as the net return to capital that results when we subtract from the active return to capital represented by the rate of profit (r), the real interest rate (i), which is the guaranteed return to idle capital. Examining this relation in the Greek economy, we observe in Figure 15 a slightly different picture from that of Figure 14. It could be argued that the fluctuations in the rate of profit of enterprise explain more satisfactorily the fluctuations in the investment share, especially after the crisis of the 1970s. The rate of profit of enterprise fell much

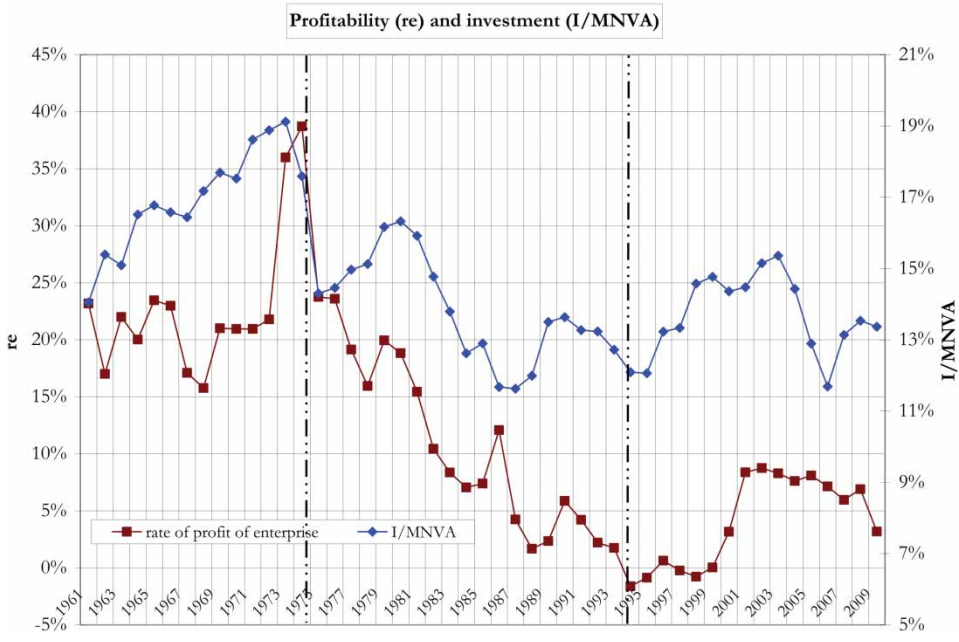

Figure 15. Rate of profit of enterprise and the investment share

more than the net rate of profit and started to recover much later. Specifically, the rate of profit of enterprise kept falling until 1994 instead of 1985, which was the year the net rate of profit bottomed out. It was only after the rate of profit of enterprise started to increase, due to the significant fall in the interest rate (whereas the net rate of profit had already peaked) that the investment share started to recover from its lows, rising continuously from 1996 up to 2003. This was reflected in the rate of growth of output which also started to increase (see Figure 2 above) at that time. However, capital accumulation, as expressed by the share of investment in net value added, remained quite close to the depressed levels of the stagnation period since neither the rate of profit nor the rate of profit of enterprise approached their 'golden age' heights. Their upward trend lasted until the mid-2000s, and then profitability, investment and output growth stagnated again.

3.6. Household Debt and Public Debt

If profitability and investment did not recover sufficiently, what were the sources of the modest growth achieved during certain periods of the neoliberal era? In Greece, the decade of the 1990s was characterized by the privatization and deregulation of the financial system following similar developments in all advanced capitalist economies. This process, the financialization of the economy, greatly increased the availability of credit, especially after the accession of the country to the Eurozone in 2002, which in turn ensured low real interest rates supported by relative financial stability. Those developments on the supply side combined with the virtual stagnation of real wages, which increased the demand for

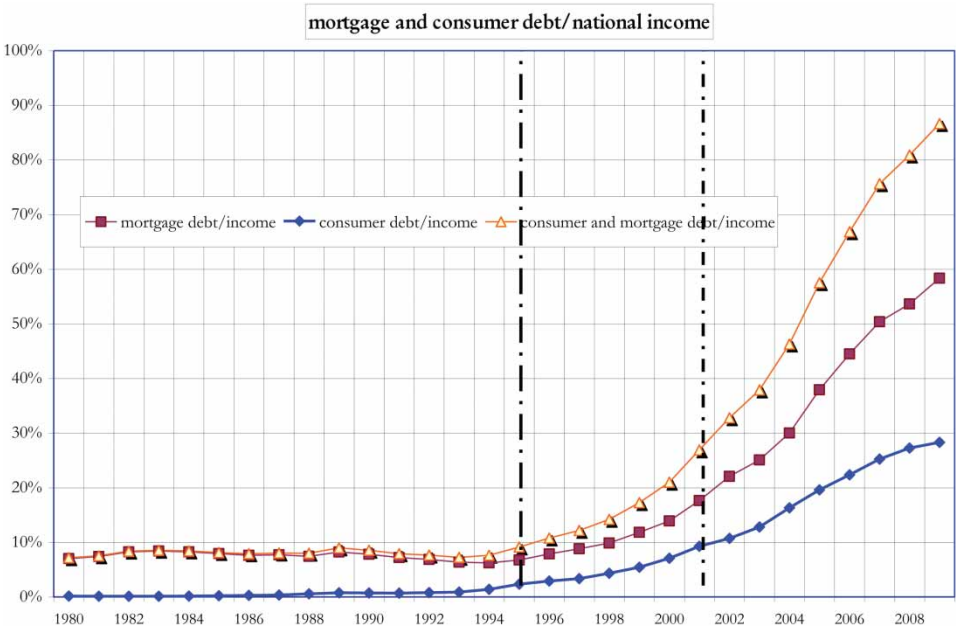

Figure 16. Household (consumer and mortgage) debt as a share of national income, 1980–2009

credit, resulted in a huge increase in both mortgage and consumer debt. The sum of those two types of household debt as a percentage of national income—a ratio that was very low (less than 10%) in 1995—rose to almost 90% in 2009 in two successive stages. From 1995 to 2001 there was a sharp increase in this ratio from 9% to 27%, and then from 2001 to 2009 there was an even more spectacular increase from 27% to 87% of national income (see Figure 16). This debt-driven increase in consumption and housing demand was buttressed by the wealth effect on consumption of the stock exchange bubble in the late 1990s and constituted the major source of growth for most of the neoliberal period.[13]

Public spending in Greece was quite strong during the neoliberal period and especially during the last 15 years (even though it was less than the EU-15 average by 2% of GDP for the 1995–2010 period). In fact though, it was insufficient public revenues that created the persistent deficits of the period by lagging seriously behind public expenditures.[14] Payments for interest on the public debt were on average 6.7% of GDP, i.e. the primary budget was in balance as interest paid and public deficit were almost equal on average for the period 1995–2010 as shown in Figure 17. Hence, since the majority of the public debt was in foreign hands, we may conclude that state deficit spending was less stimulating

[13]Brenner (2006) calls this process 'asset price Keynesianism'; Bellofiore & Halevi (2010) call it 'privatized financial Keynesianism'.

[14]For the 1995–2010 period, public revenues in Greece were on average 6% lower than those in the EU-15. They were also 6.5% lower than public expenditures, thus creating an equivalent average annual public deficit over the same period, accumulated as public debt.

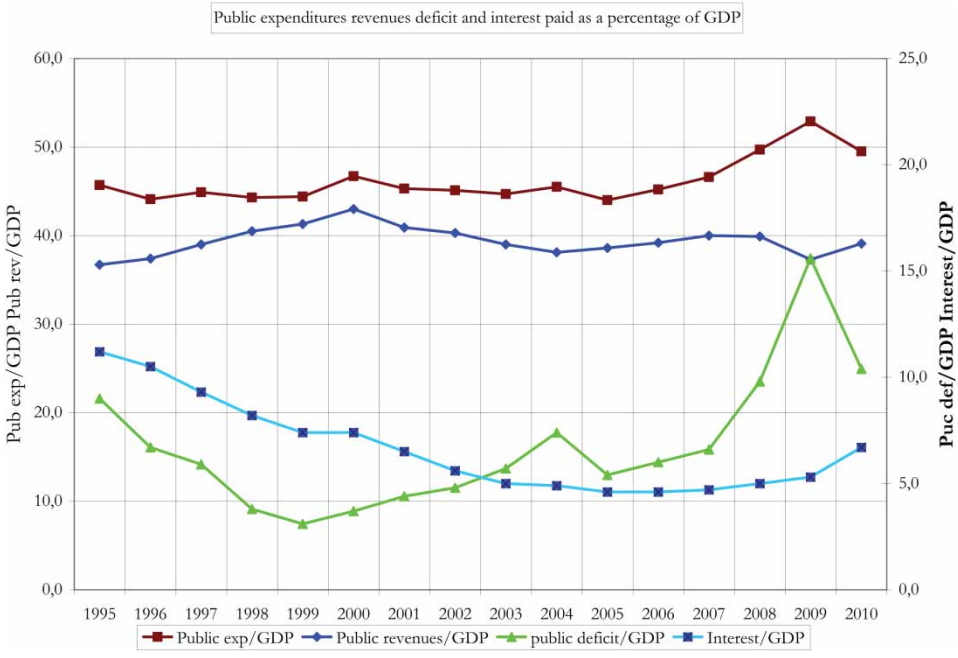

Figure 17. Public expenditures, revenues deficit and interest paid as a percentage of GDP

for domestic output, as the accumulation of public debt to the order of 120% of GDP in 2009 would indicate at first sight.

In summary, during the 'golden age' of capital accumulation in the Greek economy (1958–73), the crucial Marxian variables followed the path predicted by the law of the falling rate of profit. The rate of surplus value exhibited a modestly rising trend and the capital/output ratio increased sharply. This rise created the conditions for a falling general Marxian rate of profit even during the 'golden age'. At the same time, the net rate of profit fell only slightly but was kept at a high level stimulating capital accumulation and output growth. The continuous rise in the capital/output ratio combined with the notable fall in the rate of surplus value (and the profit share) after 1974 initiated the period of crisis and stagflation for the Greek economy. This crisis was manifested in a sharp and protracted fall in both the general Marxian and the net rate of profit which lasted until 1985. Capital accumulation and output growth slowed down considerably reaching their lowest values for the entire postwar period. Then, in the mid-1980s, about half a decade later than when it happened in Europe and the US, the state and capital attacked the income, social benefits and working conditions of labor, shifting decidedly the distribution of income in favor of capital, in an effort to end the crisis. Even though this attack was quite successful in terms of affecting the interclass income distribution, and the rate of surplus value reached historical heights, it was not enough to re-establish profitability at levels comparable to those of the 'golden age'. The insufficient 'destruction of capital value' and the increase in the ratio of unproductive labor to productive labor compensation were instrumental in

curtailing the recovery of profitability. The capital/output ratio stayed constant first and then continued to rise, albeit at a slower pace, and the rise in the ratio of unproductive labor to productive labor, which also started in Greece later than in other advanced capitalist economies picked up steam. As a result of the limited recovery in both the net rate of profit and the rate of profit of enterprise, investment as a share of total output increased only modestly and remained at levels significantly below those observed during the 'golden age'. Output growth mirrored the behavior of the rate of profit and especially during the first decade of neoliberalism (1986–95) lagged seriously behind its earlier performance. The main sources of slightly higher growth in the next decade were personal consumption and government deficit spending, which provided the necessary demand stimulus in the absence of vibrant investment activity. The process of financialization, and the accompanying easy credit and low interest rates, especially after the entrance of Greece into the Eurozone, resulted in an unprecedented increase in household debt, consisted from both consumption and mortgage credit. Thus, government deficit spending and credit-driven household consumption (and housing) spending provided the stimulus for aggregate demand during the1996–2008 period, along with the wealth effects from the stock exchange bubble in the late 1990s and the public infrastructure spending for the Olympic Games until 2004. When those conjunctural, non-sustainable sources of demand were totally eliminated with the onset of the international crisis, the weakness of profitability and capital accumulation in the real economy surfaced, along with the fiscal crisis and the crisis of the banking sector. People lost their jobs or significant slices of their income and were not able to pay their financial obligations to banks, which in addition found themselves overburdened with junk-status Greek public bonds. The state tried to subsidize and support the financial system, and exacerbated the fiscal crisis making inevitable further austerity measures in the form of lower social spending and higher taxes, which threw the economy deeper into recession. It is now evident that the 'neoliberal solution' to the stagflation crisis of the 1970s did not work. Capital accumulation has remained anemic, despite injections in demand from consumption and government spending, financed by consumer credit and public debt creation respectively. The weakness of the real economy has become quite evident now that stock exchange bubbles and unsustainable boosts to demand have been exhausted.

Finally, it is interesting to note that in Greece, Brazil and Spain (along with the US; see Bakir & Campbell, 2009, 2010; Shaikh, 2011) the rate of profit appears to exhibit the same behavior over the entire postwar period: first, a 'golden age' period of high profit rates, strong capital accumulation and output growth, then, a crisis period of sharply falling profit rates, and after that, a partial recovery of profitability during the neoliberal era with almost all alternating phases of profitability, determined by the changes in the capital/output ratio.[15]

[15]See Camara (2007) for Spain, and Marquetti *et al*. (2010) for Brazil. The period covered by those studies ends in 2001 and 2003 respectively, so further comparisons regarding the outbreak of the crisis are not possible.

4. Conclusions

The current crisis has been presented and discussed in the literature mostly as either a financial or a sovereign debt crisis. When the analysis does not remain at the financial sphere and tries to trace and locate the roots of crisis in the 'real' economy, then it is usually restricted to the level of distribution and circulation. Emphasis is placed on inequality and the bias against wages in the pattern of income distribution characterizing the neoliberal institutional structure or neoliberal SSA (Crotty, 2000; Kotz, 2003, 2008). Thus, this structure is now threatened by a crisis of underconsumption in contrast to the demise of the postwar regulated SSA, which according to this view was ended by a profit squeeze crisis caused by the increased strength of labor (Bowles *et al*., 1986; Glyn & Sutcliffe, 1972; Weisskopf, 1979).[16] It has to be remembered though that neoliberalism was conceived as a response to the structural crisis of the 1960s and 1970s. Thus, the current crisis could be thought of as a crisis of neoliberalism only in the sense of the failure of this social form to repair the structural crisis of accumulation in the 1970s. However, looking at the deeper structure of the Greek economy, a different picture emerges from the examination of the trajectory of profitability and the capital accumulation process. As Shaikh (2011) notes, despite radically changing institutions, regulations, and balance of class forces, structural systemic crises reappear every 30 to 40 years. Those recurrent accumulation crises are inevitable as long as the system depends on the profit motive. The recurrence of crises has to be traced to a more or less common cause.[17] Accumulation is based on profitability, and the determinants of profitability have to be examined carefully in order to understand its different phases. It seems that inadequate profitability remains the fundamental cause of crisis regardless of the proximate cause each time.

In Greece, as in other countries, the insufficient recovery of profitability during the neoliberal era appears to lie at the core of the economic difficulties currently encountered by the Greek economy. What is missing from the classical scenario of a definite recovery from a serious crisis was the destruction, depreciation and restructuring of capital, or a technological revolution that would raise productivity growth significantly and lower the organic composition of capital. It is evident that this solution could not be politically accepted since it would create social and economic conditions similar to those of the Great Depression. Financialization and easy credit along with wealth effects from stock exchange bubbles and public deficit spending, for a while offset anemic investment activity stemming from low profitability. Once those factors were exhausted though, the fundamental weaknesses of the 'real' economy appeared in full force.

The immediate and long-term prospects are bleak as both the public sector and the household sector are overburdened with debt and must therefore drasti-

[16]See, though, Moseley (1988) and Shaikh (1987) for different explanations of that crisis.

[17]Dumenil & Levy (2010) argue that the cause of the crisis is different each time. Their view of the current crisis as one of overconsumption, underaccumulation and 'crisis of financial hegemony' is meant to explain primarily the US case and appears to be of limited help in explaining the postwar trajectory of the Greek economy.

cally reduce their spending; investment is discouraged by low profitability and weak demand; and net exports chronically constitute the Achilles' heel of the Greek economy, and especially so since its accession in the EEC and EU and the adoption of the euro as the national currency. The country finds itself in the fifth year of a deep recession, with the latest reading of the unemployment rate at 27% and climbing, drastic wage cuts in both the private and especially the public sector, and a public debt at 160% of GDP. As the political system is being rapidly delegitimized and economic conditions deteriorate, the only other necessary condition for radical economic and political transformation in the direction of greater socialization of the strategic sectors of the economy seems to be that the various leftist anti-capitalist political parties must reach a consensus for mass mobilization and common political action.

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