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THE PROFIT RATE AND THE ASSET-PRICE INFLATION IN THE SPANISH ECONOMY

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Abstract

The measure of capital profitability in the Spanish economy is relevant because of both a process capital accumulation since mid-nineties largely driven by an asset-price inflation, as well as the deep economic crisis since late 2008. Therefore, in this article a comparative analysis is carried out using different databases and measures of the rate of profit, incorporating the financial sphere and addressing other different countries of the Eurozone. It shows the scope of the underlying valorization crisis in relation to previous decades and in terms of its fall experienced during the years not only of the housing boom, but also throughout the subsequent recession. In addition, this drop in profitability stands out in relation to other economies of the European periphery. Hence, this analysis puts the rate of profit at the center of the debate on the Great Recession in Spain, despite its absence in much of the economic literature, included heterodox approaches

JEL: F60, E01, E32, E40, O52

Keywords: profit rate, interest rates, Spain, Eurozone

I. INTRODUCTION

This article shows a macroeconomic approach to the profit rate (r) in Spain along the period 1995-2014 from a political economy perspective. The essential objective is to analyze both the level and (mainly) the evolution of this variable during the phases of growth (1995-2008), characterized by a long wave driven by a housing boom, then followed by a deep recession (2008-14), which will reveal whether indeed there has been a decline in the rate of profit which could explain the ongoing long depression.

This objective includes a number of specific issues. Thus, the analysis of profitability requires first to historically locate it in a long-term perspective in order to compare absolute levels of profitability, as well as to reveal the implications of using different expressions of the profit rate according to the specific context. In this sense, given the importance of the asset-revaluation process in the dynamics of accumulation, the use of conventional indicators of profitability turns out to be important, and thus incorporating financial aspects (interest rates and debt). On the other hand, the purpose of having a more complete idea of the exceptionality or not of both the absolute level and the movement of profitability in Spain justifies to carry out a comparison with other countries of the Eurozone.

The main hypothesis is the existence of an underlying problem in the capacity of valorization, that is, an inadequate level of surplus value generated in relation to the capital invested. Therefore, the study of profitability is of the utmost importance. First, because of its influence on investment and, thus, on the cycles of growth and crises, so it turns out to be relevant when it comes to fully grasp a period driven by the appreciation of real estate-assets ('fictitious capital'), rather than a technical change which could reduce the socially necessary labor time (SNLT) (Mateo and Montanyà 2017). As a consequence, it has certain implications for both the methodology of the empirical measures, and also in terms of the theoretical foundation, the labor theory of value, which indeed require a global approach to profitability.

The structure of the paper is as follows. First, theoretical questions about the rate of profit and methodological aspects for its measurement are addressed. Subsequently, I analyze the measures of the general rate of profit from a historical perspective, considering various statistical sources and typologies of productive labor. The next section incorporates the financial sphere in order to

advance analytically in the degree of concretion in the study of profitability. Finally, certain conventional measures are mentioned and, in the last part, a comparison of Spain with several countries of the Eurozone is carried out.

II. THEORY AND METHODOLOGY

Theoretical aspects

The profit rate is a central variable in political economy-rooted analysis, following the tradition of Smith, Ricardo and Marx (Shaikh 2016). It constitutes an essential foundation for investment and, consequently, economic growth, so its fall explains the historical recurrence of crises. Therefore, 'the rate of profit is central to understanding the capitalist market economy as a dynamic entity evolving in time' (Wells 2007: 2). The concept of 'rate of profit' is however quite complex (Mateo 2007), both theoretical and empirically. Indeed, it relies on the economic theory, and specifically the theory of value.

The process of generation of (surplus)value (sv) is a supply-side process however requiring the validation of the market (demand), which establish the conversion of direct labor incorporated in commodities into social labor, the substance of value. But the housing boom of the Spanish economy generated a kind of 'duality' between the accounted profit and the generated surplus, so it can be claimed that part of the surplus has had a 'fictitious' character (Jones 2013, Moseley 2013). Thus, finance has been inextricably linked to the valorization process by means of this kind of price-effect inasmuch as the expectations of revaluation of certain assets have driven indebtedness. Put in another way, the falling rate of profit has been hidden by, or to a great extent has boosted, the asset-price inflation relative to their value-foundations (Potts 2010, Roberts 2016).

The starting point, therefore, is the general or gross profit rate (r), which indicates the capacity to produce surplus, that is, the extent to which capital achieves its objective. From this rate, the most concrete analysis can address the net profit rate of enterprise ($r - i$) by taking the lower limit for investment, the interest rate (i). Thus, it is necessary to integrate the flow of interests, and more generally the financial dimension, within the framework of the underlying trend of profitability and the law of value. In the case of Spain, its incorporation into the European Monetary Union (EMU) has somehow changed the causality $r \rightarrow i$, in the sense of leading to an

extraordinary fall in the cost of financing. In other words, the dynamics of the interest rate has to a certain extent had an exogenous character, for which its level has been outside of the internal productive conditions until the outbreak of the crisis. And this low level of interest rates has encouraged the increase of indebtedness.

Debt is a form of fictitious capital which breaks the equality between income and the generation of surplus value (Jones 2013), as it creates artificial demand. At least in the short term, government, corporate and household debt boost directly or indirectly business profitability (Miliotis and Sotiropoulos 2009) by means of the so-called ‘profit upon alienation’, arising from changes in relative prices (Shaikh, 2016), that is, asset-price inflation (Hossein-Zadeh 2016), and thus, employment and production. The profit rate is increased, incorporating ‘fictitious profits (or losses)’ (Jones 2013). However, if commodities are not realized in the market, so profits are not backed by surplus labor, then debt is not paid back to creditors and the underlying problem of valorization appears as a debt problem.¹

When the crisis comes up, the rise in interest rates is a systemic (and endogenous) requirement for preserving the quality of money and the effective accomplishment of their functions, because for the money to adequately represent the value generated, a devaluation of goods is required.² Therefore, it is not a causality arising from finance, as if it were an independent sphere within capital valorization, but of a level of development of productive forces. It is a low profit rate what makes both interest rates and debt become too high.

The measure of profitability

Although the correct measurement of the rate of profit is of the utmost importance, it is not possible to accurately quantify it, and much less from the foundations of Marxist economics. Thus, different indices will be used, even though some of them come from a different theoretical approach.

Arguably, there are two methodological possibilities in the study of the profit rate. First, focusing on the measure of the total surplus as the main objective, which implies a complete restructuring

¹ Moreover, it is important to note that debt does not cause the fall in profitability, but amplifies its movements. It makes profitability to rise more along the boom phase, but also further falling during the crisis (see Kliman 2011).

² But the rise in the interest burden allows for the spread idea of a finance-led profit-squeeze, or the financialization approach (see Mateo 2011 for a critic).

of the System of National Accounts (SNA) by means of the differentiation of productive and unproductive labor (see Shaikh and Tonak 1994). The second one takes the profit rate rather as a means for understanding the dynamics of the system, in this case relaxing the exigence for the quantification of the surplus, as the object of study is the average profitability of the economy as a whole.

Even though this paper rather follows this last approach, and does not address the extensive debate on the productive and unproductive labor,³ there are three sectors excluded: i) Finance and Real Estate (FIRE), given the centrality of the banking system in the housing boom, channeling funds to both non-financial corporations (NFC) and households (HH), although I indeed think they include productive activities, so there is not a complete correspondence with the Marxian concept of interest-bearing capital, contrary to the main approach of Marxist authors (see Mateo, 2007); ii) Government (GOV), and iii) social services (SOCSER), on the grounds of the large presence of non-capitalist production.

For the measurement of profit (P) as the proxy for the surplus value (sv), the starting point is the difference between GDP and wages (W), also excluding taxes less subsidies on production (Tp), for all the productive activities (p). This gross operating surplus (GOS) includes depreciation (DEP), while the net operating surplus (NOS= GOS- DEP) also incorporates royalties payments (interests, dividends, taxes on income, etc.) (Ry) and ‘mixed income’ (MI).⁴

$$P = \sum_p (GDP - W - Tp) = \sum_p (NOS + DEP) = \sum_p GOS$$

Similarly, the concept of capital depends as well on the foundations of economic theory (Marx, 1857-58). For Marx, capital is a social relationship, which covers all the elements involved in the process of capitalist exploitation, regardless of their material form. This paper takes as reference the series provided by FBBVA (2017), by far the most complete and rigorous database, and so being the reference for the EU-Klems project, although it obviously draws from neoclassical foundations.⁵ The measure of capital stock (K) used is at replacement costs, on net terms (n),

³ Two opposing approaches from a Marxian view can be found in Shaikh and Tonak (1994) and Cámara (2006).

⁴ It has to be considered that a great part of the remuneration of senior executives belong indeed to the surplus value, but given theoretical and mainly statistical problems, no part of this flow of wages has been counted as profit.

⁵ See Mas *et al* (2013), who explain the methodology of the FBBVA series.

without residential assets (nr),⁶ and excluding the activities considered unproductive in the measure of profit.

$$K_{nr}^n = \sum_p (Total\ assets - residential\ assets)_{t-1}$$

Where K in the previous year (t-1) is used for measuring ‘r’ in the current year (t), and is made up of ‘Other constructions’; ‘Transport equipment’; ‘Machinery, equipment and other assets’; ‘Cultivated assets and intangible ones’ in the productive activities (p), without depreciation. Consequently, the profit rate (r) is given by:

$$r = \sum_p \frac{GOS}{(K_{nr}^n)_{t-1}}$$

In the case of conventional measures, despite including certain assets that are not part of the Marxian concept of capital, they are relevant since the purpose is to have a complete picture of the complex concept of profitability in a context of asset-price inflation.⁷ In conclusion, the indices of profitability used in this research are the following:

- [r] = general rate of profit, i) for 1995-2014, GOS (NSI 2016a); K (FBBVA 2017), in productive activities; ii) for 1965-2014, NOS (AMECO, 2017) for the total economy.
- [ORNA (R1)] = ordinary return of net assets (BoS 2017c, 15.7-9). Profits: net ordinary result (without atypical transactions) + financial expenses, excluding depreciation and provisions + net worth or equity + interest-bearing borrowing.⁸
- [ORE (R3)] = ordinary return on equity: net ordinary result / equity (BoS 2017c, 15.13-15)
- [RE (FSI.2)] = return on equity (BoS 2017c, 15.29)

⁶ However, I think there are also strong reasons for the use of the capital stock at historic cost and on a gross basis. Thus, the adherents of the Temporal Single System Interpretation (TSSI) of Marx's value theory prefer the historical cost (see Kliman 2011), while Shaikh (1999) explains the advantages of the gross capital stock at replacement cost.

⁷ Anyway, financial assets are part of the set of disbursements already carried out by capitalists. For Freeman (2012), it would be *credit-money-capital*, because as “any title is alienable and can be purchased on the market, it offers, *de facto*, an alternative employment of money.” (Ibid.: 188) However, his methodology does not record capital gains in the numerator (profit).

⁸ In parentheses, the abbreviation used here and in the source (for example, ORNA, which is R1 in the BoS) and the place to find the variable (chapter 15 section 29: 15.29).

- Interest burden, i) interests on borrowed funds / (gross operating profit + financial revenue) (BoS 2017c, 15.26-27);
- Debt ratio (E2): external interest-bearing funds / (gross operating profit + financial revenue) (end-of-year balance) (BoS 2017c, 15.24-25)
- Spread ($R4 = R1 - R2$) = spread return on investment – cost debt (BoS 2017c, 15.16-18)

Other complementary ratios of profitability are shown, such as the increase in the stock of debt to profit ratio ($\Delta\text{debt}/P$) and profit to inputs ratio (P/Inp). For the comparison with other EMU economies, the measures of the rate of profit are calculated from the OECD database (OECD 2017a), except for the stock of capital in Spain (FBBVA 2017).

- $[r_A]$ = GOS in productive sectors, excluding "Financial and insurance activities" (code VK); Real estate (VL) and "Public administration and defense, compulsory social security" (VO); gross K_{nr}
- $[r_B]$ = GOS; net K_{nr} , in correspondence to the measure most used in Spain
- $[r_C]$ = NOS; net K_{nr}

The literature on the rate of profit in Spain

The scarcity of studies on the rate of profit in Spain justifies an analysis from a political economy approach. On the one hand, there are long-term estimations following a Marxist method that only reach the first years of the phase of reference in this paper, such as Guerrero (2006) and Cámara (2007), who cover the period 1954-2001, then updated by Nieto (2006) until 2003 and Cámara (2008) up to 2006. Therefore, these authors do not make adjustments in the total amount of the surplus and do not address financial aspects. As a result, there is a relative stability of profitability in the years after 1995, or even a recovery.

As for the authors that have covered most of the last two decades, Boundi (2014) calculates 'r' as the ratio of total surplus from AMECO to the net K_{nr} (FBBVA) until 2009. Unlike this paper, this author takes K_t instead of K_{t-1} for measuring r_t , and does not deduce any unproductive branch. Murillo (2015) discounts the mixed income from the GOS on the assumption that it is equivalent to the real wage, and its measure of profitability only decreases between 2002 and 2007, so in this last year it was barely slightly more than 3% lower than in 1996. However,

Murillo does link the problem of profitability with the stock market boom and the increase in the price of housing. Finally, Roberts (2016) calculates the rate of profit from 1950 to 2010, but following AMECO, while mentioning the debt problem. The movement of this ratio since 1995 is very different, since it increases between 1996 and 2001-02, but with a subsequent fall of more than 40% until 2010, although substantially lower since 1995.⁹

Nevertheless, these studies do not address the implications that the model of valorization of Spanish capitalism had on the rate of profit, so it is not considered the central role of the banking system, hence the financial sphere is not integrated nor compared with conventional indicators of profitability, and there is no comparison with other profit rates in the Eurozone.

III. THE GENERAL RATE OF PROFIT

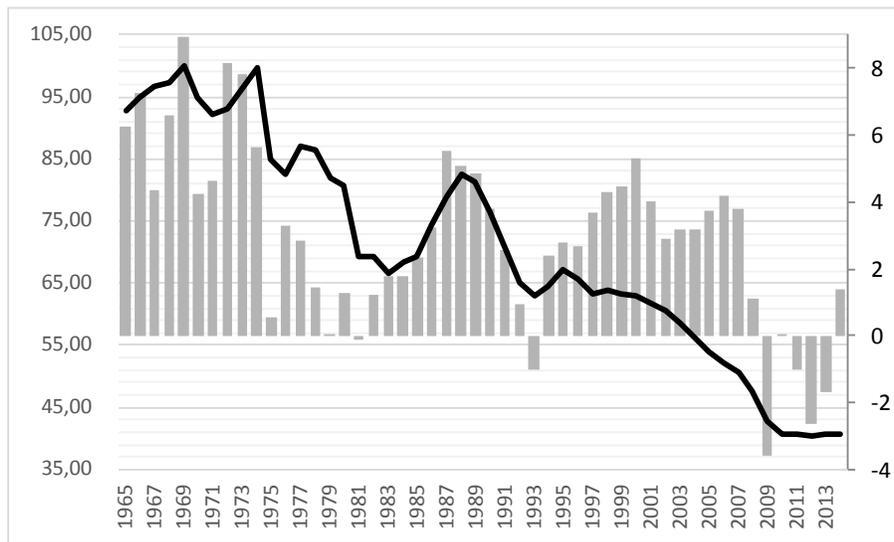
The total economy: history and databases

The first question is to measure profitability in a long-term historical framework. With this purpose, Fig. 1 shows the general downward trend of the profit rate of the whole economy since 1965. After a brief increase from 36.4% to 39.1% during the expansive phase of 1965-74, it declined by 31.4% in the years of relative stagnation (1975-84). Then, there is partial recovery in which only in 1989 does the rate of profit reach the level of 1980, but with the recession of 1992-93, profitability lost 22.7% from the 1989 peak.

⁹ As for studies from other theoretical approaches, López *et al* (2013) and López (2015) take the Levy-Kalecki equation for the estimation of business profits, with the particularity of considering the extra profits arising from the valuation of assets, but with an opposite causality, that is, profits depending on spending. From an orthodox perspective, Pérez (2012) relies on conventional measures from the BoS (2017c), including a brief comparison with France, Germany and Italy by using the Bank for the Accounts of Companies Harmonized (BACH) database. He claims that 'in 2007 the profitability of Spanish companies was lower than that of French and German companies in all major sectors except construction' (*ibid.*: 171). The IMF (2013) compares EBITDA measures with total assets, debt ratios and banking profitability by corporation size in Spain, France, Germany, Portugal between 2001 and 2011. Finally, Maudos and Fernández (2014) analyze profitability and indebtedness of Spanish companies by sector of activity and size, using as well the BACH database.

Figure 1. Long-term rate of profit and rates of change of GDP (1965-2014)

Profitability (left, 1969=100) and GDP at 2010 constant prices (right)



Notes: total net operating surplus to net non-residential stock of capital (year t-1), current prices
Sources: AMECO (2017), FBBVA (2017)

The analysis of the economic boom after 1995 is characterized by a historically low level of profitability in the first year: 30% below the 1965-74 average, 20% with respect to the 1975-79 average, but only 5% inferior than the level of the recessive phase of the early 1980s. Globally, the average rate of profit in 2010-14 is 47% lower than the 1965-74 average, and almost 60% in relation to both 1969 and 1974 peaks. Unlike previous expansive phases, the growth phase of 1995-08 does not impel an increase of the rate of profit, but it develops parallel to an abrupt fall of profitability.

While both a historically low level of the profit rate and its downward trend are evident, there are several aspects to be analyzed in the 1995-2014 period. On the one hand, the use of different databases reveals a similar downward profile, but with certain peculiarities, as shown in table 1. The anomalous evolution of the ratio from the Penn World Tables (PWT) stands out, which increased 32% between 1996 and 2002, but later it fell by 45% until 2014. In 2008, this ratio was 23% lower than the initial level of 1995, and up to 2011-12 it shows the largest cumulative decline in profitability. By contrast, the series from the Structural Analysis (STAN) Databases (OECD, 2017b, available only until 2009) reflects a mild drop of 10% until 2007-08 and 15% until 2009, while the series from AMECO declines by around 20% up to 2009-14, with a total fall of 17% in 1995-14. The EU-Klems rate has a similar profile to the Spanish SNA ratios

(National Statistics Institute, NSI), although from 2001 there is a small gap of 2-4 percentage points, so the EU-Klems ratio is relative higher to previous NSI series. Overall, the drop until 2008 is 15.3% with this database, very similar to that of AMECO, although unlike it, the total decline until 2012-14 reaches 27%.

Table 1. Comparison of measures of the profit rate for the whole economy with different databases

Total variation (%)

Database	Period available	From 1995 to						2000-07	2007-14
		2000	2002	2007	2009	2012	2104		
Total capital stock									
OECD	1995-09	-1,51	-2,10	-9,64	-14,89			-8,26	
AMECO	1995-14	-4,37	-3,94	-13,53	-18,48	-19,66	-17,08	-9,58	-4,10
NSI 2010*	1995-15	-1,12	-5,89	-20,61	-29,29	-27,36	-22,73	-19,71	-2,67
PWT	1995-17	13,52	24,80	-7,66	-28,25	-31,12	-29,14	-18,66	-23,26
Non-residential capital stock									
EU-Klems	1995-16	-2,28	-2,15	-11,19	-21,68	-26,05	-26,80	-9,12	-17,58
NSI 2000	1995-09	-2,13	-5,15	-13,17	-21,54			-11,28	
NSI 2008	1995-12	-2,22	-5,13	-13,17	-24,07	-25,25		-11,20	
NSI 2010	1995-14	-2,31	-6,03	-16,72	-27,02	-30,11	-30,71	-14,75	-16,79
Notes. Gross operating surplus to total gross capital stock (inc. Residential) (AMECO, PWT, OECD), net capital (NSI 2010*), and non-residential capital stock (EU-Klems, NSI 2000, 2008, 2010)									
Sources: OECD (2017b), AMECO (2017), NSI (2010, 2014, 2016a), FBBVA (2017), EU-Klems (2016), PWT (2015)									

As for the series of 'r' based on the SNA of Spain, it should be noted that they show a greater fall. The NSI 2010* ratio (total GOS to total net capital, including residential assets), shows a drop of nearly 30% until 2009-10, similar to the PWT, but nevertheless it has a subsequent rebound like the AMECO ratio. In fact, the sub-period 2010-14 turns out to be crucial, as the profit rates with the total capital stock reveal either a recovery of 4.5-6.5 points (AMECO and NSI, respectively), or the end of the decline (PWT).

However, the fall of the ratio using the net K_{nr} with the same base of prices (2010) for the SNA is 3 points lower between 1995 and 2008, but after 2010 there is a significant divergence in the series, reflected in a greater fall in the profit rate with the non-residential capital by 8 percentage points in 1995-2014. In this sense, and now considering only K_{nr} , the updating of the SNA series with 2000, 2008 and 2010 prices is interesting because it progressively reduces the surplus, and

so the profit rate. Thus, 'r' in 2009 (with 1995 = 100) is 78.46, 75.93 and 72.98 respectively, or what is the same, each update of the SNA increases the decline in profitability by about 2.5 points.¹⁰

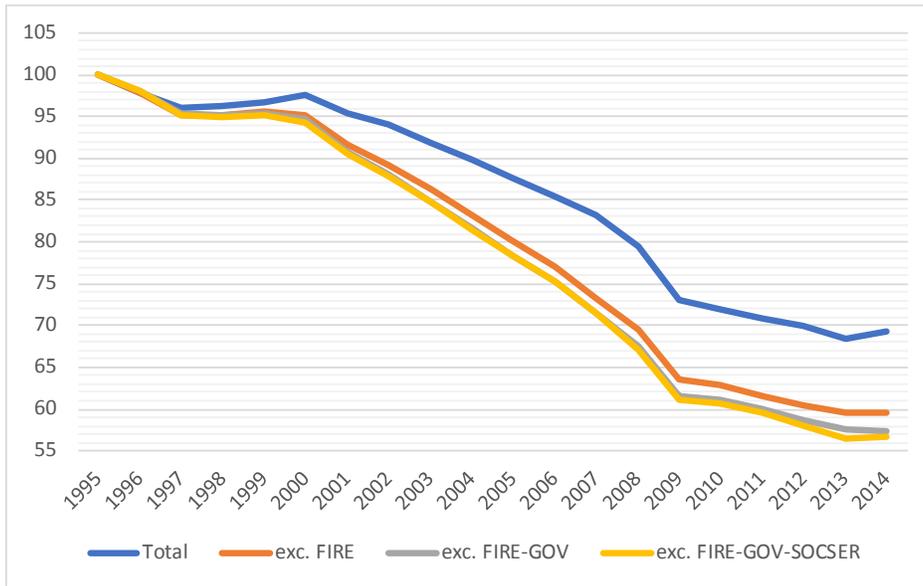
As a consequence, it can be seen that: i) the use of one or another database is relevant because up to the outbreak of the crisis (2008) and until 2014, gaps up to 13 points between the AMECO and OECD series, on the one hand, and NSI and PWT on the other, can be found, also with a very different profile in the latter before and after 2002; ii) the importance of successive updates of the SNA in order to grasp the extent of the deterioration of profitability; and iii) the inclusion of residential assets in the capital stock (AMECO, OECD, PWT) shows a lower fall in profitability, except in the case of PWT if the entire period 1995-14 is taken. In the case of the FBBVA series used in this paper, on the contrary, although it reduces the relative profitability along the boom period, it later reveals a partial recovery that leads to a raise in the level of profitability in 2014 by 8 percentage points compared to the measure with K_{nr} .

Productive sectors

If profitability is addressed in relation to the net K_{nr} , Fig. 2 shows that the exclusion of FIRE, GOV and SOCSER activities has important implications. Indeed, it is the deduction of FIRE activities that is revealed decisive, with a greater fall in profitability from 1999-00. This divergence is increasing throughout the phase of expansion, and since 2007 it is stabilized around 9 percentage points, so the total fall of 'r' would be 40% until 2012-14.

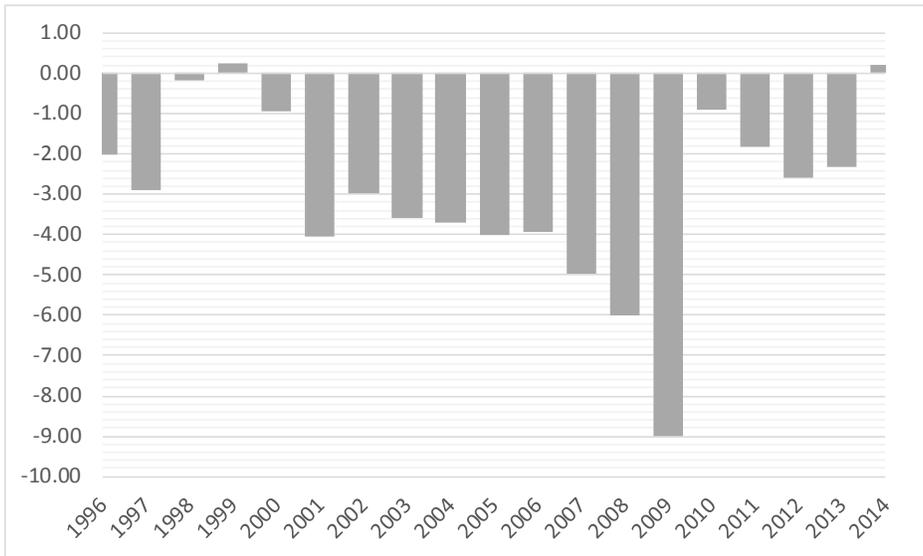
¹⁰ Subsequently, in 2012, the last year of the 2008 price base of the SNA series, the fall of 'r' according to the last series (2010 prices) was higher by almost 5 percentage points.

Figure 2. Profitability excluding unproductive activities (1995= 100)



Notes. Gross operating surplus to net non-residential capital stock of the whole economy (total), and excluding FIRE, GOV and SOCSEER activities.
Sources. NSI (2016a), FBBVA (2017)

Figure 3. Annual rates of change of the profit rate (%)



Source: NSI (2016a), FBBVA (2017)

Another aspect to emphasize is the almost continuous decline of profitability, since only in 1999 and 2014 there is an increase that barely reaches 0.2% (Fig. 3). In the first five-year period, the annual average rate of fall is 1.17%, which amounts to -4.70% between 2000 and 2009, and finally stabilizes its fall around 1.50% in the last 5 years. Therefore, the rate of decline is higher

after 2000, and mainly in the final phase of the boom and at the beginning of the crisis, with percentages between -4 and -9% per year, so there is no clear distinction between these two subperiods. In turn, this evolution evidences the absence of any recovery in profitability until 2014 that could allow to push a new wave of intense accumulation.

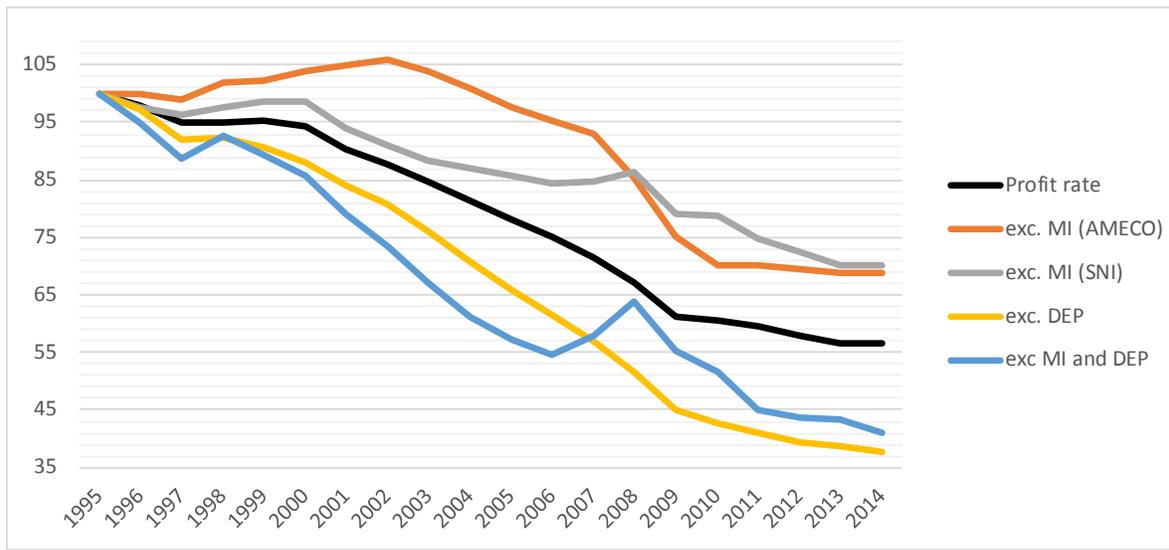
Depreciation and mixed income

The measure of profitability analyzed, excluding FIRE, GOV and SOCSER, contains two categories to consider both theoretically and empirically from a Marxian approach, depreciation (DEP) and mixed income (MI). In the first case, this variable does not belong to the surplus generated by workers, but to the costs. However, the SNA does not provide a disaggregated series to discount it from the gross surplus, but only by institutional sectors, whereas the FBBVA only calculates the net stock of capital.

On the other hand, the total surplus includes the so-called 'mixed income', which corresponds to the self-employed and entrepreneurs without employees, thus belonging to a non-capitalist circuit. However, there are cases where variable capital is assumed to take the form of mixed income, as it happens with the so-called 'false self-employed' (see Mateo, 2012). Empirically, data can be found in AMECO for the total economy, and the NSI shows disaggregated data by institutional agents. Another problem is to delimit the part of the capital stock that belongs to this area, which can only be approximated from the flow of depreciation that corresponds to the households.

Considering these difficulties, Fig. 4 shows estimations of the profit rate discounting mixed income and depreciation. The exclusion of the first one reduces the extent of the deterioration of profitability, especially in the years prior to the crisis, since the two series are above the benchmark rate (declines of 30-31%, compared to 43.3 % of 'r'). The 'r' net of mixed income for the whole economy has a different profile, as it grows by 5% until 2002, from which it declines by 34% until 2010, while the rate of the productive sector stopped its drop in 2006-08.

Figure 4. The profit rate without mixed income and depreciation (1995= 100)



Notes. Rates of profit, without and excluding mixed income (MI), depreciation (DEP) from gross operating surplus of productive activities

Sources: NSI (2016a), FBBVA (2017), AMECO (2017), OECD (2017a)

In relation to this issue, two aspects must be pointed out. First, the process of proletarianization continued in the growth phase, since waged labor in relation to total employment went from 74.5% to 83.6% (NSI 2016a). And second, it should be noted that the business structure in Spain is extraordinarily atomized. In 1999, 55% of the business units had no employees, a percentage that fell to 50% in 2004-06, but with the crisis it returned to the initial level in 2012 (NSI 2016b). Thus, according to the conventional indexes of profitability (see section IV) larger companies (with more than 250 employees) have gross profitability levels over net assets above SMEs only since 2005, with lower volatility, and in addition, the crisis involves a clear stratification by size (see BoS 2017c). Between 2008 and 2012 (year in which the minimum is reached), large corporations' profitability went from 7.6% to 5%, medium ones from 5.4% to 3.6% and the small enterprises from 3.8% to 1%. Therefore, it can be inferred that, other than statistical problems and theoretical controversies, the underlying problem of profitability impels a certain duality from 2005-06 to the detriment of independent producers and SMEs.

On the other hand, and even more relevant for the analysis of the trajectory of profitability, is depreciation. By deducting DEP of both NFC and households, the profit rate fell until 2007 by 14.5 points more than the gross reference rate, while in the total period the gap amounted 19 points, as the decline reaches 62.3%. Finally, if the profit rate is calculated excluding both MI

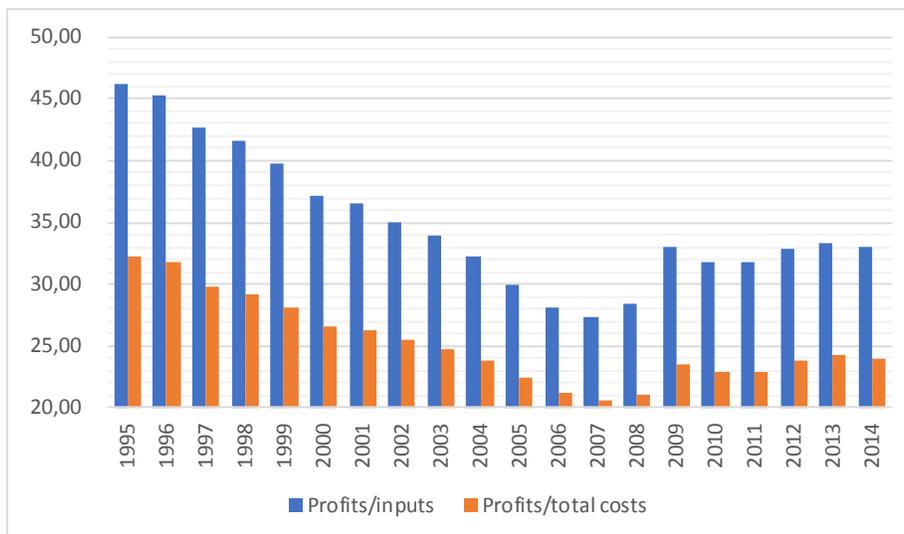
and DEP in relation to the net K_{nr} , profitability decreases by 45.3% until 2006, and after a rebound in the following two years, the total fall is 59.1%.

The capital outlay

Regarding the denominator of the rate of profit, some issues need to be highlighted. As for databases, measures of the stock of capital in Spain come from AMECO and the FBBVA. The increase in both rates is similar, since they multiplies by 2.86-2.89 between 1995 and 2014, but the relevant aspect is that the exclusion of residential assets, only available in the FBBVA, implies that the stock of capital is increased 3.19 times. This is in turn reflected in a larger fall in the profit rate.

Another problem with the measure used is that only the fixed part of the capital stock is taken as no data on capital turnover is available in order to calculate the stock of circulating capital. But the cost of inputs has represented a larger part of the total cost structure during the growth period, accounting for 75.4% in 1995, and 83% in 2007, and then falling because of the recession. Similarly, inputs represented 52.7% of total gross production in 1995 and 10 percentage points more in 2007.

Figure 5. The profit-inputs and profit-total costs ratios (%)



Notes: Gross operating surplus, inputs and total costs (inputs and gross wages) of productive activities

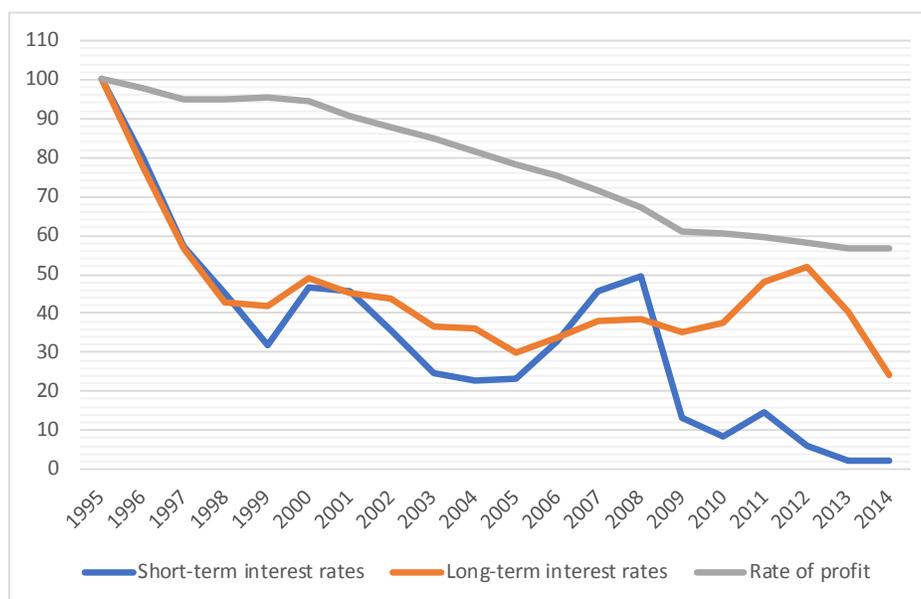
Source: INE (2016a)

Given the increase in the cost of circulating constant capital, the profit-input ratio (Fig. 5) has fallen by 40.7% between 1995 and 2007. Although it recovers appreciably with the crisis due to the fall of production, the global decline reaches 28.7%. In the case of profit-total cost ratio, the fall is similar, although only 3-4 points lower (36 and 25% respectively). It can be deduced that the measure of profitability with respect to the stock of fixed and circulating capital would allow to observe a superior decline in the average profit rate.

IV. PROFITABILITY, INTEREST AND DEBT

The fall in the general rate of profit has been offset by the extraordinary drop in interest rates, which has been proportionally higher (Fig. 6), and in turn boosting the net profit rate of enterprise ($r - i$). The reduction of the lower limit (i) increased the differential ($r - i$), thus becoming a countervailing force to the underlying difficulty in valorization. Alternatively, the abrupt increase in the cost of financing after the outbreak of the crisis contributed as well to the large deterioration of ($r - i$). In nominal terms, short-term interest rates were 9.36% in 1995, falling thereafter to 2.1% in 2004/05, while long-term rates fell from 11.27% to less than 4% in 2005/06, which means a fall over 75% in the case of the former, and two-thirds in the latter.

Figure 6. Comparative evolution of the profit rate and nominal short and long term rates of interest (1995= 100)

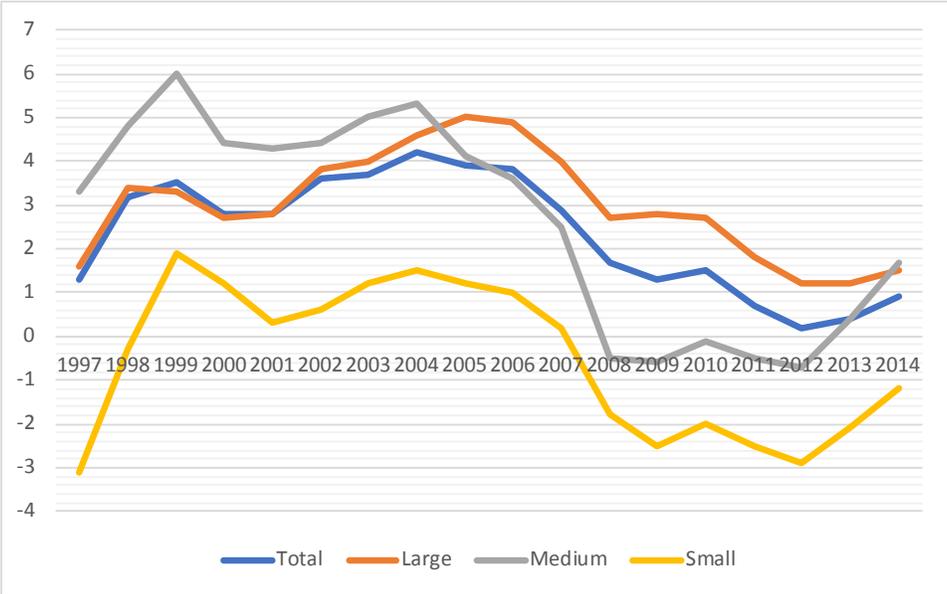


Sources: OECD (2017a), NSI (2016a), FBBVA (2017)

After the crisis, while short-term rates plummeted below 2%, long rates remain at around 4-5%. At the same time, the risk premium on the 10-year German bond went from almost zero during the years of the economic boom to rise formidably. Since April 2010 it exceeded 1 percentage point, which will continue to rise to the maximum of 6 points at the end of July 2012, when it began to descend after the announcement of the possibility of intervention of the European Central Bank in support of the Euro.

The net profit rate of enterprise can be approximated by the conventional index of the spread return on investment minus the cost of debt (Fig. 7). As expected, this rate increases until 2004-06, averaging 3.39 between 2000 and 2006, but the fall in the following six years amounted - 94.74%, with an average spread of 1.00 in 2008-12. By company size, a direct correlation since 2004 can be easily found, as large corporations have had higher profitability levels, while the small ones indeed suffered from a fall in this ratio since 1999. The crisis, then, strengthened this polarization, with an average spread between 2008 and 2012 of 2.24 for large corporations, and - 0.52 and -2.34 for small and medium ones respectively, so that the drop between 2006 and 2012 grows as the company size decreases.¹¹

Figure 7. Spread return on investment over cost debt per size

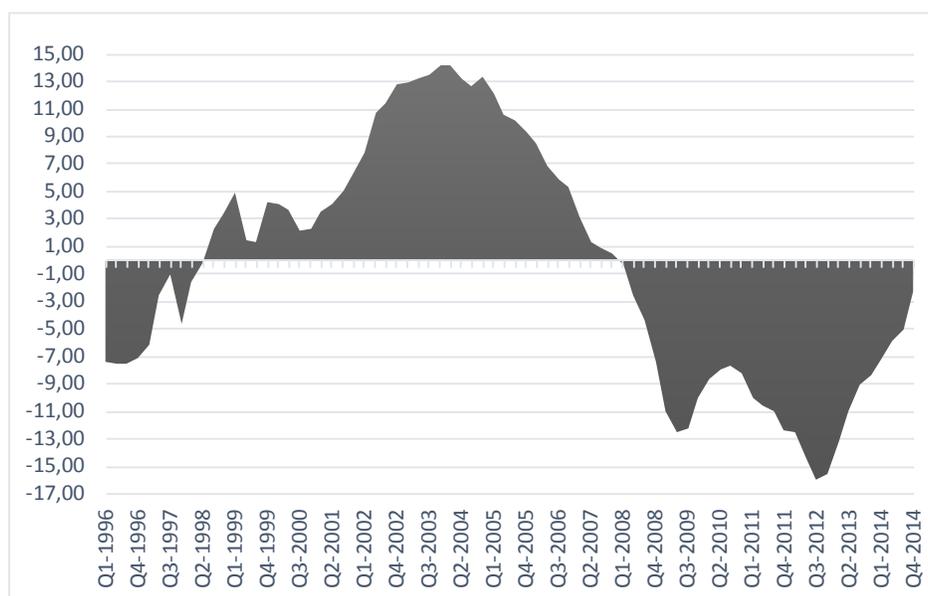


Source: BoS (2017c)

¹¹ It worth referring to this stratification, to a large extent made possible by financial markets, because it is the domestic materialization of a polarization that at European level is related to the different level of productive development of the central and peripheral countries, and for which the risk premium has been functional.

The aspect to be emphasized is that the best proof of the exogenous character of the fall of interest rates is the speculative dynamics that has contributed to feed around construction assets, mainly of residential type. Fig. 8 illustrates the gap between long-term interest rates and the annual variation of the average housing price per square meter. From the third quarter of 1998 it become positive, ranging from 1 to 4 points. But since 2000Q3, the differential has been intensified both by the fall in nominal rates and by the increase in the rate of increase of housing prices, and between mid-2002 and 2005Q3 it turns out to be over 10 points.

Figure 8. Gap between annual rates of change of housing prices and long term interest rates



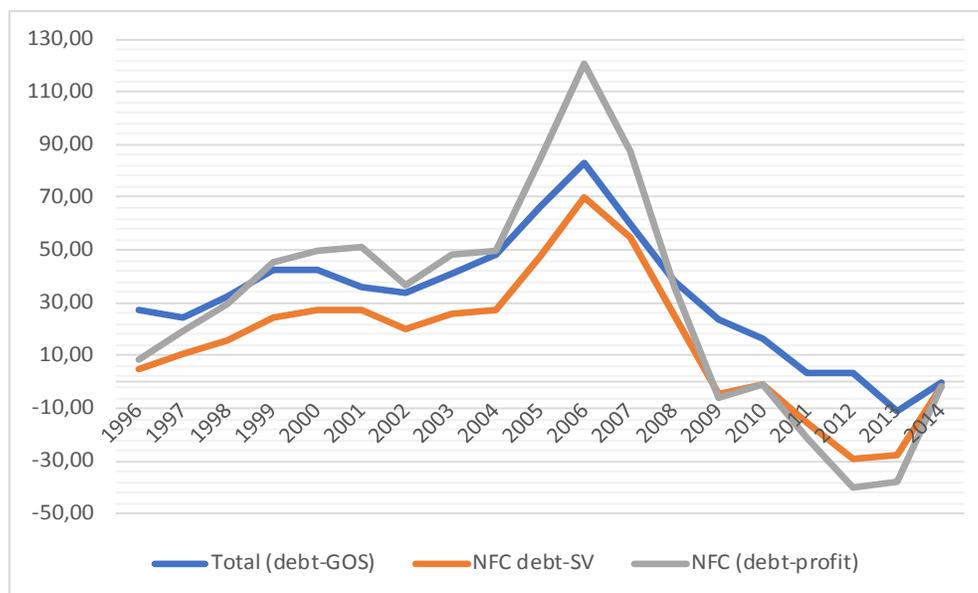
Source: OECD (2017a), MPW (2017)

Therefore, the operation of borrowing at a cost that falls from 5.5% to 3.4% in order to acquire assets whose average price increases by 7.7% in 2002, but between mid-2002 and early 2005 grows between 15 and 18% annually, turned out to be a very easy, lucrative and absolutely logical operation from the business perspective. However, this differential practically disappears in the second half of 2007 and already becomes negative in 2008. Under these circumstances, households and NFC have increased the most their borrowing. Thus, NFC debt to GDP ratio increased from 44-45% in the first three years of the period to exceed 120% in 2008-11, while that of households surpassed 80% since 2008. By contrast, public debt went down from 63% to

36%, but increased with the crisis, so that in 2012 it reached nearly 86% (BoS 2017a). Globally, the growth period has been characterized by a high increase in the debt to GDP ratio, which has doubled from 135 to more than 260% in 2011-14 (BoS 2017a).

This debt has represented a growing fraction of the corporate surplus until 2006. As shown in Fig. 9, the ratio of the increase of the annual stock of debt (December to December) to total economic surplus went from less than 30% in the first two years of the series to a maximum of 82% in 2006. If only the rise of NFC debt in relation to the surplus value is considered, the evolution is relatively more intense although with a smaller percentage, from 4 to 69%. Nevertheless, the same indebtedness in relation to just the GOS of the NFC shows a still higher increase, from 8% to 120% in 2006.

Figure 9. Increase in debt to surplus ratio



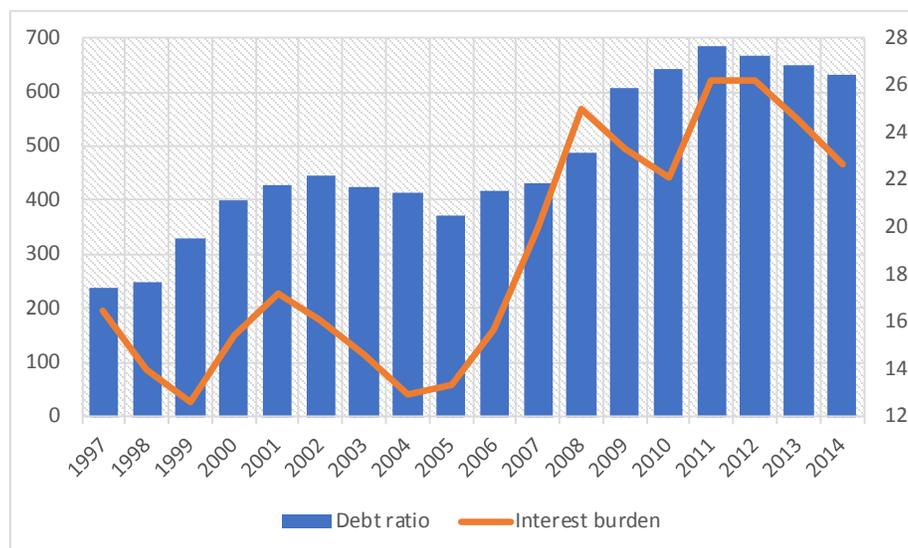
Notes. Increase in i) total stock of debt to total gross operating surplus; ii) NFC stock of debt to surplus value (total profit except FIRE, GOV and SOCSER), iii) NFC stock of debt to NFC surplus
Sources: BoS (2017a), NSI (2004, 2016c)

Therefore, this rise of $(\Delta \text{debt}/P)$ means that the production of sv has been even lower than the Marxian profit rate reveals, that is, with some fictitious character of the process of valorization. The consequence is shown after the outbreak of the crisis, when the flow of increased debt first slows down and since 2009 falls in absolute terms for NFC, which is reflected in the negative sign of these series. However, what really happened is a transfer of income from workers and the

State towards capital, or in other words, a kind of financial expropriation (Lapavitsas 2009). The counterpart, then, manifests itself as an increase in the indebtedness of the public sector and a restructuring of various dimensions of the wage relation.¹²

Figure 10. Debt ratio and interest burden of non-financial corporations

Debt ratio (E2, column, left axis) and interest burden (line, right axis) (%)



Source: BoS (2017a)

Correspondingly, the stock of debt to gross operating profit and financial income (E2) of NFC (BoS 2017a) has substantially increased in these years (Fig. 10). In 1997, E2 was 237%, with a further upturn only interrupted between 2002 and 2005, but then it reached a peak of 686% in 2011. This debt generated significant financial costs to the NFC. Between 2004 and 2008, the interest burden doubled, from 12.9% to up to 25%, exceeding 26% in 2011-12.¹³

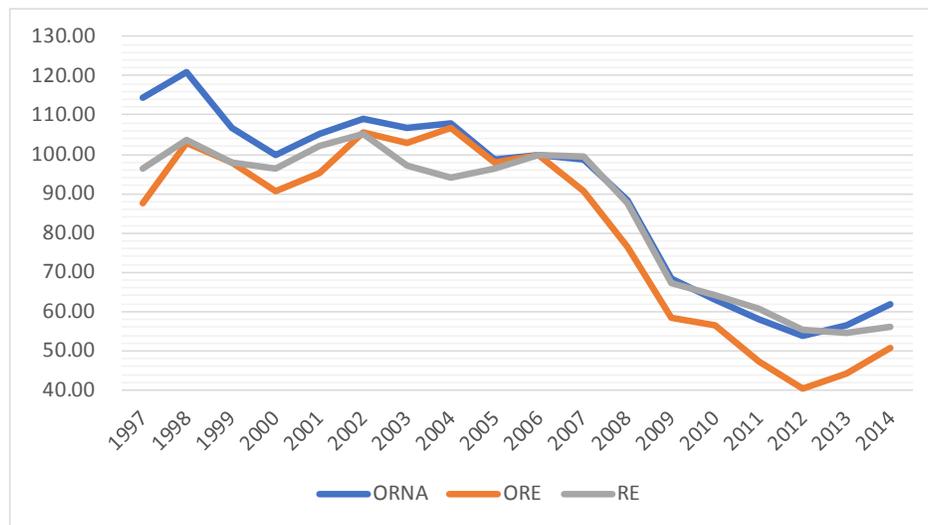
¹² Although this issue goes beyond the purpose of this article, it is worth mentioning the reconfiguration not only of the real wage, but also of other dimensions such as indirect wages (regressivity of taxation and social expenditure) and deferred ones (stagnation of pensions and tightening of the conditions required to receive them). What is shown here is only an approximation to the true scope of the transfer of income from capital to labor, a kind of which, given the sluggishness of investment, allows us to infer the extraordinary extent of the crisis of valorization.

¹³ By company size, the interest burden was higher for small businesses (more than 30% of their profits, up to 37% in 2012), and the gap with larger enterprises has been widening since 2008. In this sense, Maudos and Fernández (2014: 42) conclude that “the problem of Spanish companies is not the average cost of the debt they support, but the burden that it represents and their less ability to give it back taking into account their low profitability.”

V. CONVENTIONAL MEASURES OF PROFITABILITY

Until 2006, three ratios show a cyclical pattern, ORNA (ordinary return of net assets), ORE (ordinary return on equity) and RE (return on equity), with partial peaks in 1998 (ORNA), 2002 (ORNA and RE), 2004 (ORE), and finally in 2006 for all of them (Fig. 11, Table 2).¹⁴ After this year it began a fall in these ratios that was intensified especially in 2008-09, when the annual decline ranged from 10 to 23%. In the following years the slowdown continued at a slower but significant pace. Between 2009 and 2012, RE fell at an average of 6.1% per year, ORNA dropped by 7.6%, while the ORE reached an average of -11.4% per year, just to begin a slight recovery in the next two years.

Figure 11. Conventional measures of profitability (2006= 100)



Notes. Ordinary return of net assets (ORNA), ordinary return on equity (ORE), return on equity (RE)
Source: BoS (2017c)

¹⁴ In relation to the information supplied by the BoS (2017c), it is worth noting the change in data. When in December 2014 I first worked with these ratios, I noticed that the ORNA (R1) had an increase of 5.8% between 1997 and 2006, while in the new series it turns out that it does fall by -7.31%, and the drop during the crisis is very similar. In turn, the update has also limited the time lapse, since the series of 2014 began in 1984, while the latter only starts in 1997. In the case of the ORE (R3), the difference is much smaller, highlighting that the increase in the new series is reduced by 10 points since 1997.

Table 2. Rates of change of conventional measures of profitability for non-financial corporations (%)

Years	Ordinary return of net assets	Ordinary return on equity	Return on equity
Total variation			
2000-06	0,00	10,42	3,79
2006-12	-46,05	-59,43	-44,53
Annual rate of change			
2007	-1,32	-9,43	-0,73
2008	-10,67	-15,63	-11,76
2009	-22,39	-23,46	-23,33
2010	-7,69	-3,23	-4,35
2011	-8,33	-16,67	-5,68
2012	-6,82	-14,00	-8,43
2013	0,00	4,65	-1,32
2014	7,32	11,11	2,67

Source: BoS (2017C)

While the rates of profitability *à la Marx* show a continuous decline along the whole period, these conventional ratios have the advantage of showing a complementary perspective of profitability, which in relation to total assets and equity was not unfavorable in the years of the housing boom. As it can be seen in table 2, ORNA index does not fall between 2000 and 2006, despite the annual fluctuations. The profitability on equity, in turn, even increases between 3.7% and 10.4% in total (ORE and RE, respectively).

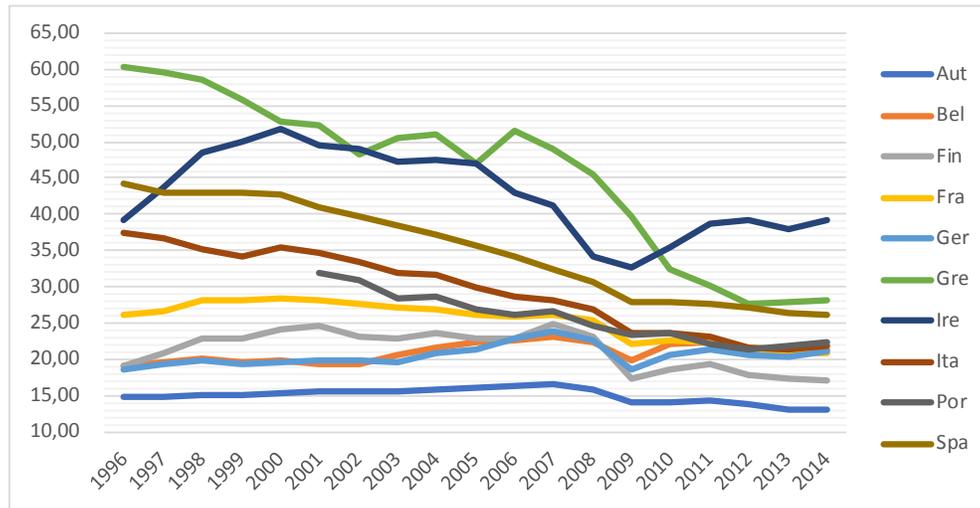
On the other hand, the change of trend occurs in 2006 in all cases, but it is accentuated in 2008-09, and the fall continues mainly until 2012. If along the years of the economic boom these ratios showed a more optimistic situation than the Marxian-based profit rates, the fall after 2006 turns out to be higher, and so having a more pronounced volatility. Thus, between 2006 and 2014, the gross surplus to the net capital of the productive sphere drops by 25%, but these indices decline between 44-46% (RE and ORNA) to almost 60% (ORE). Therefore, the kind of the valorization process should lie behind this dichotomy.

VI. THE RATE OF PROFIT IN SPAIN AND THE EUROZONE

In this section a comparison is made of both the absolute level and the evolution of the general rate of profit of Spain in relation to a number of countries belonging to the center and periphery of the Eurozone: Austria (AUT), Belgium (BEL), Finland (FIN), France (FRA), Germany (GER), Greece (GRE), Ireland (IRE), Italy (ITA) and Portugal (POR). In this group, AUT, BEL, FIN and GER are considered the most advanced economies (center), being GRE, IRE, POR and SPA those having a peripheral external insertion, whereas in an intermediate place are located FRA (semi-central) and ITA (semi-peripheral). Because of the lack of measures of gross capital stock in Spain, figures 12 and 13 just show the results of r_B (gross surplus) and r_C (net surplus).

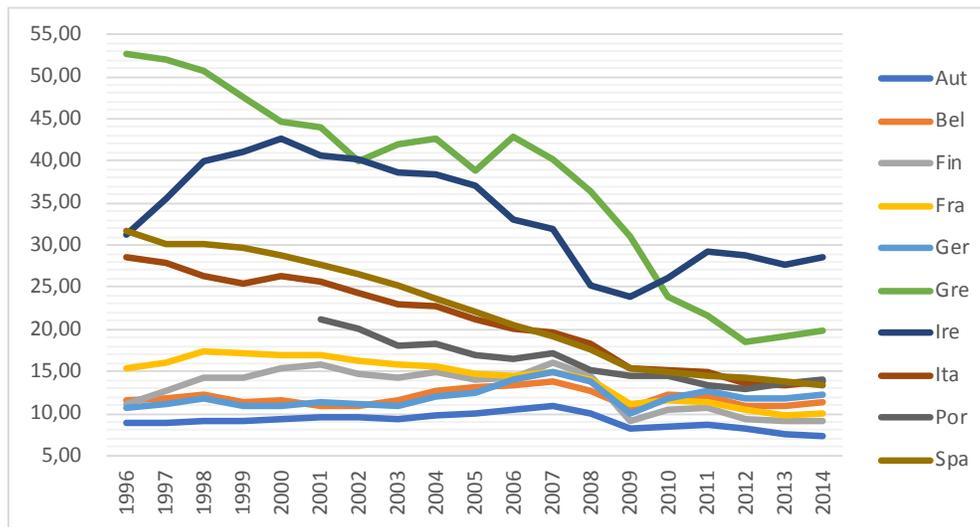
The first issue to be highlighted is the center vs. periphery dichotomy in terms of both the absolute level and the evolution over time, with a tendency towards convergence after the economic crisis, or at least a reduction of their disparities. In 1996, the profitability gap between the extreme cases, GRE and AUT, was 3.20 times for r_A (that is, 3.20 times higher the Greek r_A ratio), and 5.87 times for r_C . If the period 2000-07 is considered (see Fig. 14), the peripheral countries have average general rates of return (r_A , gross terms) of 26-28% until the outbreak of the crisis, while the former group average 10.5-12.7%. In the middle, Italy and France can be found, and as expected, closer to the periphery the first one (Italy, 18%), while the second (France, 14%) is closer to the central economies. Addressing r_B (gross profit, net capital), the stratification still exists, but with a greater intragroup dispersion, now 15-23% (center), compared to 37-50% (periphery), with FRA and ITA in the same intermediate positions.

Figure 12. The profit rate (r_B) (1996-2014): gross surplus over net non-residential capital stock (1996-2014) (%)



Notes. POR: exc. Agriculture, forestry and fishing (VA0), and data only from 2001.
Source: OECD (2017a), FBBVA (2017)

Figure 13. The profit rate (r_C) (1996-2014): net surplus over net non-residential capital stock (1996-2014) (%)



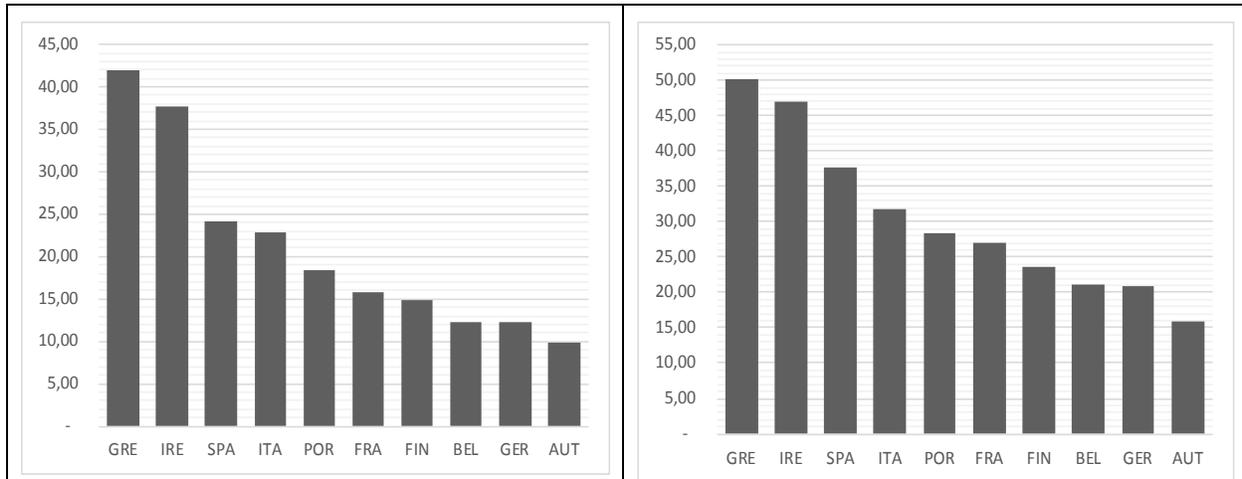
Notes. POR: exc. Agriculture, forestry and fishing (VA0), and data only from 2001.
Source: OECD (2017a), FBBVA (2017)

In terms of the relative level of r_B and r_C , Spanish profit rates in 1996 were only lower than GRE, and with quite the same r_C than IRE. But after the upward dynamics or the Irish profitability in

the late nineties, the absolute level of these Spanish profit rates in 2000-07 largely corresponds to its position in the European capitalism as a peripheral economy.¹⁵

Figure 14. Average levels of the profit rate in 2000-07

r_B (left) and r_C (right), from the highest to the lowest level



Notes. Profit rates: gross operating surplus (r_B) and net operating surplus (r_C) to net non-residential capital stock
Sources: OECD (2017a), FBBVA (2017)

The second aspect is the evolution of the rate of profit. Although the absolute levels were higher in the periphery, the decline in profitability has been deeper in these economies, as can be seen in table 3, which shows the total rates of change between 2000 and 2014, and also in the subperiods of expansion and recession/deceleration. The dichotomy occurs mainly between 2000 and 2007, since the profit rates increase in the central countries, while they descend in the periphery, as well as in FRA and ITA. The fall oscillates between -15 and -33% except in GRE, whose decrease is smaller before the Great Recession. Subsequently, the decline is generalized in intensity.

¹⁵ Nonetheless, the EBITDA to assets ratio experienced a larger fall in Spain between 2007 and 2011 in relation to FRA, GER, ITA and POR, having in this last year the lowest level, according to the IMF (2013).

Table 3. Accumulated rates of change of profit rates

Country	r_A			r_B			r_C		
	2000-07	2007-14	2000-14	2000-07	2007-14	2000-14	2000-07	2007-14	2000-14
AUT	5,90	-23,85	-19,36	8,72	-22,44	-15,68	14,45	-31,82	-21,96
BEL	11,92	-10,69	-0,04	17,31	-7,70	8,28	20,22	-17,56	-0,89
FIN	1,34	-32,22	-31,31	3,20	-31,16	-28,95	4,77	-44,11	-41,45
GER	17,58	-13,54	1,66	22,05	-11,89	7,54	35,55	-17,44	11,91
FRA	-8,27	-20,98	-27,51	-7,53	-19,99	-26,01	-12,51	-32,84	-41,25
ITA	-20,09	-25,98	-40,85	-20,15	-22,65	-38,24	-25,21	-30,00	-47,65
GRE	-8,66	-49,84	-54,18	-7,17	-42,38	-46,51	-9,93	-50,81	-55,69
IRE	-15,45	-14,48	-27,70	-20,20	-5,19	-24,35	-25,36	-10,33	-33,07
POR	-15,72	-15,39	-28,69	-16,63	-15,72	-29,73	-19,28	-17,36	-33,29
SPA	-	-	-	-23,92	-19,45	-38,71	-33,82	-29,95	-53,64

Notes. Profit rates: GOS/Knr (r_A), gross; GOS/Knr, net (r_B); NOS/Knr, net (r_C), where GOS and NOS are gross and net operating surplus of productive activities, respectively. For POR, only from 2001
Sources: FBBVA (2017), OECD (2017a)

Spain stands out for the deterioration in profitability between 2000 and 2007, in both r_B and r_C , reaching -33.8% and -23.9% respectively, and surpassing the rest of the cases studied. If the whole of the period 1996-14 is taken, the fall of r_B in Spain amounts to -40.8%, slightly lower than ITA (-41.6%), and behind GRE (-53.3%). However, in the case of r_C , the decline in Spain (-57.6%) is only surpassed by GRE (-62.4%), and with barely 5 points of difference.¹⁶

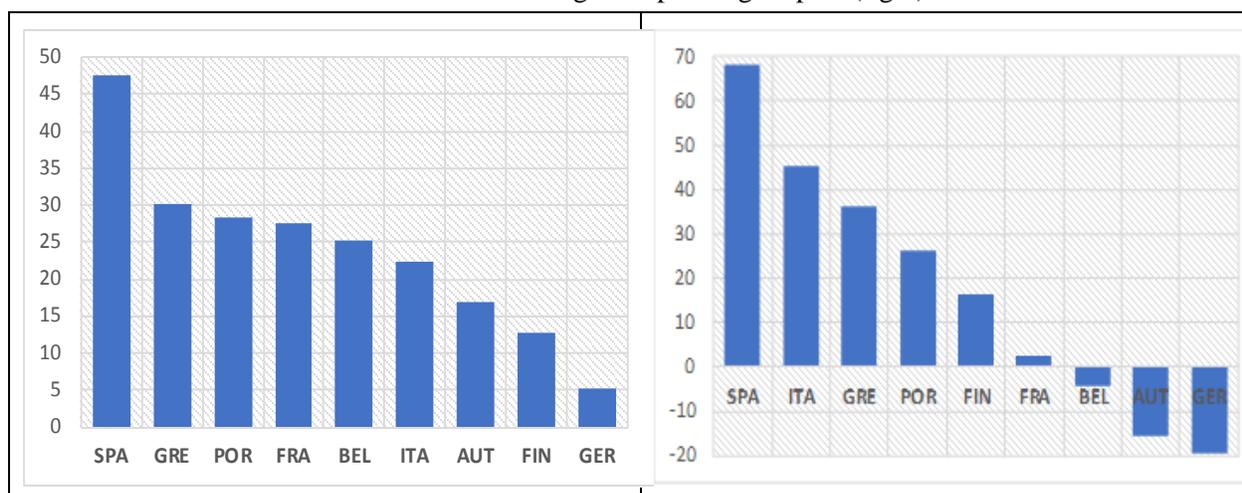
Thus, it is from 2000-01, period of real estate bubble in Spain, when the fall in profitability also intensifies in relation to other economies of the EMU. In fact, if debt is taken into account, this relative fall in profitability in Spain is even more pronounced. During the years leading up to the adoption of the Euro, which led to the subsequent equalization of the nominal cost of financing, the reduction in nominal interest rates in the short (3-month interbank rate) and long term was relatively higher in the periphery, around 50% in SPA, POR and ITA, but lower than GRE. However, it should be clarified that the average inflation in Spain between 2000 and 2007 surpassed the rest of these peripheral economies, including ITA (AMECO 2017). Consequently, a further fall in real interest rates facilitated better possibilities to indebtedness for the corporate sector in Spain, in a context of residential asset inflation.

¹⁶ Although the particularity of this economy is that the pace of fall in profitability greatly accelerates from 2007. Between this year and 2012, the annual decline of r_C reaches -14.3% per year. Also, unlike Spain, the rate of profit in Greece increased significantly in 2003-04, 2006 and 2013-14.

Although NFC consolidated debt to GOS ratio in Spain was not exceptionally high in 1999 (see OECD 2017a),¹⁷ the first year with data for this economy, it does rise relatively more than in the other economies. Thus, between 1999 and 2007, when this ratio reaches the maximum of 6.30 (and only surpassed by POR, with 7.38, and a maximum in 2012 of 8.78), the total rate of increase reaches 68.1% in Spain. This path far outstrips all other economies, with ITA and GRE being the following, but at a distance (45% and 36%, respectively). So, it shows that the problem of profitability is even more important in Spain after the adoption of the Euro compared to other peripheral economies.¹⁸ As shown in Fig. 15, the same happens with the increase in the stock of debt to GDP ratio, even with a larger gap in this case.

Figure 15. Rates of increase of debt ratios (%)

Accumulated change in debt of total economy (percentage of GDP) (left) and non-financial corporations consolidated debt to gross operating surplus (right)



Source: OECD (2017a)

On the other hand, it has already been explained that a problematic variable in Spain is the measure of consumption of fixed capital (CFC).¹⁹ Taking as reference CFC/GDP, it increased by 15.4% until 2007, only surpassed by IRE, which is the economy with the lowest level of depreciation in the whole period. Even after the crisis in Spain, the ratio kept rising, so that between 1996 and 2014 it amounted slightly more than a third (35.7%), only surpassed by GRE

¹⁷ This ratio was 3.42 in Spain, similar to GER (3.48), very close to AUT (3.67), and lower than BEL (4.23), FRA (4.51) and POR (5.58).

¹⁸ For the IMF (2013), leverage Ratios (Debt to EBITDA) in Spain increased more than the other 4 economies of its study, even surpassing POR in 2008-10.

¹⁹ As with absolute levels of profitability, the depreciation-GDP ratio is higher in central economies in 1996 (16-18%) than in the peripheral ones (11-15%), but in the latter group it increases relatively more.

(43.1%). Moreover, the rise in the depreciation-profit ratio (DEP/P) is also more pronounced in Spain, 47.1% between 1995 and 2007.²⁰ Consequently, although there is a lack of disaggregated data, it can be inferred a fall in profitability not only greater than the measure used in section III, but also considering these economies of the Eurozone.

VII. CONCLUSIONS

This study has focused on the profitability of capital in the Spanish economy, which is particularly relevant because of the (residential) asset-inflation process that has driven the process of accumulation, the integration in a monetary union with a higher level of productive development, as well as the depth of the crisis. For this reason, this paper has carried out an analysis of profitability from various perspectives.

The average profit rate of the total economy in 1995 was 46% below the 1969 peak, and only 1.7 points above the historical minimum of the 1992-93 recession. Furthermore, the subsequent expansion up to 2008 occurs while profitability declines, unlike other previous growth phases. Methodologically, the measure of profitability shows a greater decrease with the progressive updating of the Spanish National Accounts (based on 2000, 2008 and 2010 prices), the use of the domestic capital stock series from the FBBVA, and if residential assets are removed, with a global fall of 30% in 1995-14.

Besides, the exclusion of unproductive sectors is relevant because, aside from theoretical debates, the leading role of speculation (asset-inflation) around real estate activity together with the centrality of banking justify the disaggregated approach. Thus, the exclusion of the FIRE activities reduces the total decline in profitability by 9.7 points, and if the aforementioned GOV and SOCSER activities are taken out, the profit rate (GOS with respect to net K_{nr}) in 2014 was 43.3% lower than in 1995. Complementarily, there are two items with statistical difficulties, mixed income and depreciation. While by taking out the first profitability then declines by 12-13 percentage points less (according to AMECO and the SNI), the calculation of the profit rate in net terms (NOS and net K_{nr}) reveals a higher fall (62.2%), and the exclusion of both items shows a total decrease of 59.1%. In relation to the capital stock, the GOS to inputs ratio falls by 40% until 2007, and in spite of the light recovery afterwards, it nevertheless ends with a drop of

²⁰ In this case, only GRE (42%) is approaching, while the rest of countries are far behind.

almost 30% until 2014. Therefore, the rate of return including circulating capital stock would be even deeper.

The comparison with conventional measures of profitability (ordinary return on net assets, ordinary return on equity and return on equity) has shown a steady or even upward evolution until 2006, two years before the outbreak of the crisis, but with a subsequent extraordinary fall of 45-60% until 2012. This dynamic is rooted by the housing boom and the proportionally higher decline in interest rates, between 60% and 70% of the nominal short and long-term rates, respectively, only up to 1999, which has compensated for the deterioration of the general profit rate through the impulse of the net profit rate of enterprise ($r - i$).

As a result, a speculative process has been triggered, ultimately based on the reduced capacity to generate surplus value, and whose counterpart has been the formidable increase in indebtedness. Up to 2006, different measures of the increase of stock of debt to profit increase by 3 or even 13-14 times, showing that the profit generated has been substantially lower than that appropriated. Afterwards, the crisis raises the risk premium and the availability of credit falls, but the increase of the public debt and the wage regression become the counterparts through which the difficulties of valorization are manifested. Consequently, it is essential to integrate borrowing in the analysis of the trends of the rate of profit.

Finally, the comparison with other EMU economies has shown that the absolute level of the general profit rate in Spain corresponds to its peripheral insertion: lower than GRE and IRE, and somewhat higher than ITA, although also with respect to POR. However, the fall between 2000 and 2007 is higher than the other cases studied, between 23.9% and 33.8% using gross and net operating surplus, respectively. For 2000-14, the fall of r_B (-38%) is similar to ITA and only lower than GRE, whereas in the case of r_C (-53%) it is superior to the others, and only two points lower than GRE (-55%). However, the NFC consolidated debt to gross operating surplus ratio experienced an increase of 68% between 1999 and 2007 (the phase of the housing boom), much higher than the other countries, and in a context in which the inflation in Spain was higher than in other countries in the periphery. Ultimately, it can be stated that the fall in the capacity to generate surplus value (so discounting indebtedness) during the housing boom has been relatively larger in Spain, even to other peripheral economies of the Eurozone.

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