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# The Dynamics of the Profit Rate in Spain (1954–2001)

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## Abstract

The article evaluates the Spanish economy from 1954 to 2001 from the standpoint of capital profitability. The profit rate combines a cyclical behavior caused by evolution of income distribution and a downward trend caused by increase in capital composition. Increase in capital composition is caused by mechanization of the economy, while the evolution of income distribution is conditioned by a particular performance of real wages.

*JEL classification:* P-17, E-11, J-30

*Keywords:* labor theory of value; profit rate; technology of production; income distribution

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## 1. Introduction

Capitalist economies are not stable; periods of accelerated growth and recession follow one another. Economic behavior is characterized by periodic fluctuations that make economic cycles in the short, medium, and long terms. Of course, economic theory must explain the causes behind this behavior. In the labor theory of value, this explanation gravitates around a most important variable, the profit rate.

In the short run, the expansive phase of the business cycle confers a strong bargaining position on the working class, which causes an increase in the wage share and a decrease in the profit rate. In the depressive phase, the upsurge in unemployment reverts this tendency and the profit rate recovers its initial level (Boddy and Crotty 1975).<sup>1</sup>

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1. In my opinion, this cause of the cyclical behavior of the profit rate in the short run is only a possibility, but not a necessity of capitalist economies. Accordingly, short-run fluctuations are strongly affected by many contingent factors.

*Author's Note:* I am indebted to the members of my research area in UAM-A and to Diego Guerrero. I would also like to thank the reviewers of the journal for their helpful comments. Remaining errors are mine.

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In the long term, cyclical fluctuations are caused by the tendency of the profit rate to fall as a response to a technological change biased toward the substitution of the labor force by machinery.<sup>2</sup> This inherent tendency of capitalism manifests itself in the alternation of twenty- to thirty-year-long periods of stability and economic growth characterized by a decrease in the profit rate, with periods of crisis and recession characterized by a recovery of this rate (Duménil and Lévy 1998; Shaikh 1992).<sup>3</sup>

In this article, I analyze the dynamics of the effective profit rate in Spain during the second half of the twentieth century.<sup>4</sup> First, I introduce my estimation, emphasizing the main aspects involved in its measurement. I also compare my profit rate estimation with other existing estimations and with alternative measures; in both cases, I find similar patterns. In the next section, I analyze the causes behind the evolution of the profit rate through the analysis of its determinants: technology of production and income distribution. Last, I provide my conclusions.

## 2. The Profit Rate in Spain (1954–2001)

### 2.1. Productive Labor and National Accounting

My estimation of the profit rate draws on the data of the Spanish conventional national accounts system.<sup>5</sup> Therefore, it is necessary to transform orthodox accounting categories into labor theory of value counterparts.<sup>6</sup> The need for this transformation lies in the concept of productive labor, an essential component of the labor theory of value, which reflects its specifically capitalist character and distinguishes it from orthodox stances. According to this theory, some activities are unproductive of value and surplus value. On the contrary, orthodox economic theory puts the productive label on all economic activities and, consequently, counts unproductive activities as part of value added. However, there is no consensus in the literature about the applicability of this concept. In Cámara (2003a: 182–195, 487–506; 2006), I have discussed in detail my interpretation of the distinction between productive and unproductive labor. Briefly, the concept of productive

2. In this sense, I reject other explanations of the decrease of the profit rate in the long term, such as those based on the diminishing share of profits in income (Glyn and Sutcliffe 1972), and on the increase of unproductive labor (Moseley 1991; Mohun 2000). The first explanation is rejected on empirical grounds. As the article shows, empirical evidence in Spain cannot sustain this thesis. The second explanation is rejected on theoretical grounds. I argue in section 1.1 against a reading of unproductive labor with implications for macroeconomic trends. Also, empirical evidence shows that the distinction between productive and unproductive labor is not needed to find a falling profit rate in Spain.

3. Some authors have claimed that the tendency of the profit rate to fall also shows up in the long term in levels successively lower in every consecutive phase of economic stability. I do not consider this hypothesis, as I do not have the necessary data to test it empirically.

4. Of course, one must be cautious with the identification of long-term cyclical fluctuations in the profit rate, as the effective rate includes in its determination long-, short-, and medium-term fluctuations.

5. I have defended elsewhere (Cámara 2003a: 41–108, 451–485; 2005) that labor theory of value categories can and must be measured from price-based statistics. My argument, which cannot be developed further here, is that prices are direct relative expressions of socially necessary labor times.

6. See the appendix for a detailed analysis of the data sources employed, the definition of the labor theory of value categories, and the transformation of accounting categories carried out.

labor (that is to say, the specific character of labor in capitalism) implies a double transformation of orthodox economic categories.

In a first step, we must distinguish capitalist labor from noncapitalist labor, as forms of capitalist and noncapitalist production coexist in capitalist economies. In fact, the accounting categories of the labor theory of value—such as surplus value or variable capital—can only be applied to the sphere of capitalist production. In general, the delimitation of capitalist labor implies the exclusion of government and nonprofit institutions' production (NGOs, unions, associations, etc.), domestic service production, and imputed rentals (in fact, a nonlabor fictitious activity) from the new value created.

In a second step, the labor theory of value distinguishes a type of capitalist labor that does not create value: the unproductive circulation labor, in opposition to production labor. This distinction is based on the separation of the production sphere from the circulation sphere, given that value is created only within the first. As a consequence, there are three types of unproductive functions of circulation: commercial capital, interest-bearing capital, and landed property.

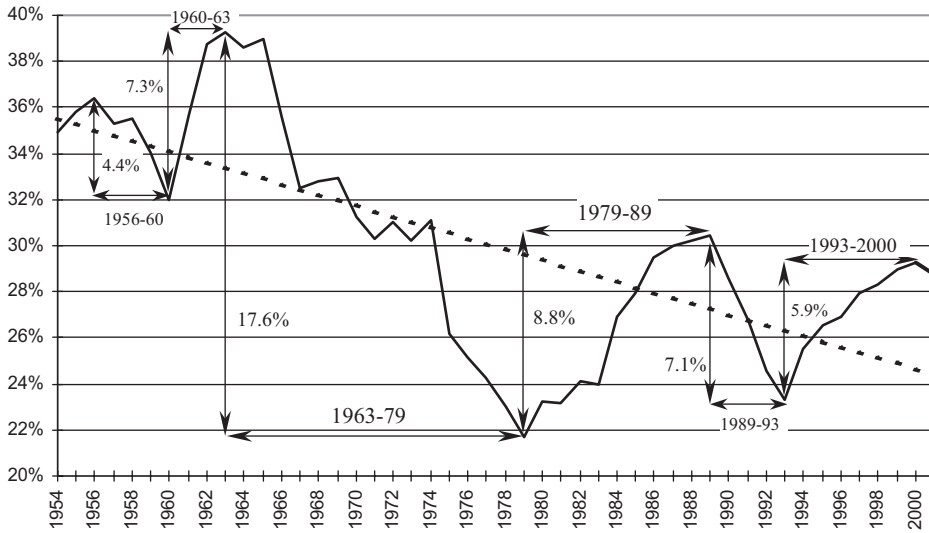
The first step is commonly accepted in the literature, but a strong controversy exists concerning the second one. On one hand, some authors—led by Shaikh (Shaikh and Tonak 1994)—base their distinction on the noncapitalist criterion of the production of use-values, which implies a classification of the different branches of production (that is to say, of the different use-values produced) into productive and unproductive activities. On the other hand, some authors—especially Laibman (1992, 1999)—believe that no analytical use-value criterion can be found, so the distinction must be abandoned.

In my opinion, the distinction between production and circulation labor is essential for the internal coherence of the labor theory of value. However, the distinction cannot be found in the noncapitalist use-value criterion, but in a specifically capitalist one based on the production of value. Therefore, it is not possible to identify the branches of production of commerce, finance, and real estate with the three different types of unproductive activities; these are productive sectors. On the contrary, unproductive activity is to be found in every branch of production of capitalist economies. Under this criterion, the importance of the concept of productive labor is microeconomic rather than macroeconomic. Although essential in microeconomic theory of prices and distribution, the distinction between production and circulation labor does not necessarily imply a historical tendency in the ratio of unproductive to productive labor.

Therefore, it is quite plausible to assume this ratio remains constant in the long term, as I do in this article,<sup>7</sup> given the absence of field research that would permit me to delimit adequately the proportion of unproductive labor in every industry throughout the period studied. In this way, the long-term evolution of my accounting categories' estimations will not suffer any alteration, despite the bias in their levels. Moreover, it is a consequence of

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7. I have employed this hypothesis in Cámara (2003a, 2003b), following Guerrero (1990: 247–8): “The immanent tendency in the capitalist mode of production is not towards an increase but a decrease in relative terms of this kind of unproductive labor (in relation to total labor). If we also consider the evolution of capital (as a specific form of production) in relation to the whole (market) production in a country like Spain (1954–1988), we can assume that the lesser part of these unproductive laborers has represented a constant proportion (over the period) of the variable capital spent by the capitalist firms.”



**Figure 1.**  
The profit rate in Spain (1954–2001)

Profit rate = Surplus value ( $P_1$ )/Capital invested in production ( $K$ ). See appendix for details.

this assumption that empirical estimations carried out employing a use-value criterion are completely mediated and flawed by the evolution of the sectors of production wrongly considered as unproductive.<sup>8</sup>

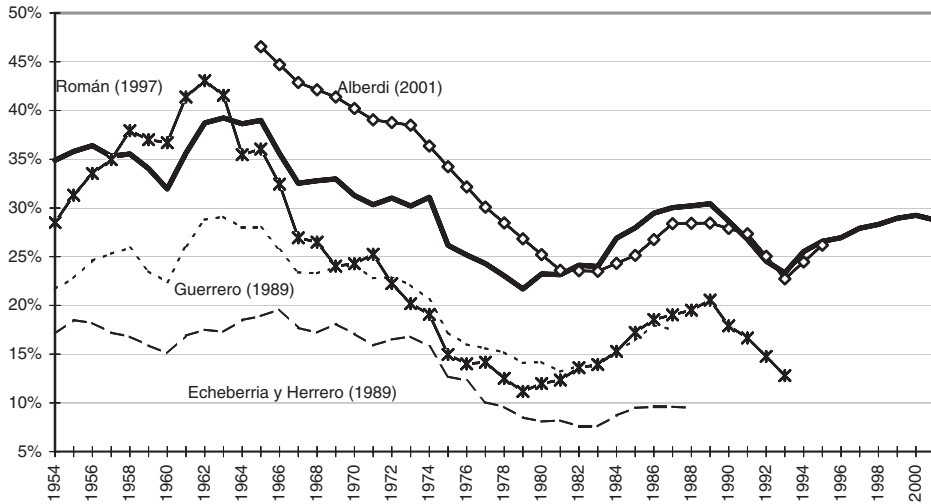
## 2.2 Estimation of the Profit Rate

The effective profit rate is defined as the ratio of the mass of surplus value to the capital invested in production. My estimation of the profit rate in Spain during the period 1954–2001 is displayed in Figure 1. As we can see, the profit rate shows both a cyclical evolution and a downward trend during the period 1954–2001.

The fall in the effective profit rate is evidenced both in its absolute downfall of 6.1 percent—from 34.9 percent in 1954 to 28.8 percent in 2001—and in the negative slope of its linear trend. Clearly, this fall materializes in the initial subperiod that ends in 1979, and it is followed by a second subperiod of slight recovery, both periods giving shape to a long wave in the evolution of the profit rate.

The cyclical evolution of the profit rate in the short run can be broadly divided into six subperiods: three periods of increase and three of decrease. The fall occurs during the subperiod 1963–1979, when the rate decreases 17.6 percent, from its peak level (39.2 percent in 1963) to its lowest level (21.7 percent in 1979). Previously, the profit rate followed an erratic path, with a slight decrease between 1956 and 1960 (4.4 percent) and a rapid increase in the subperiod 1960–1963 (7.3 percent). From its minimum value, the profit rate

8. Moseley (1991: 123) admits it explicitly in relation to the fall in the profit rate in the United States: “This very significant increase in the relative proportion of unproductive labor accounts for almost all the differences in the trends of my estimates and the prior estimates of the rate of surplus value and the composition of capital and, according to Marx’s theory, is the most important cause of the decline in the conventional profit rate.”



**Figure 2.**  
Estimations of the profit rate in Spain

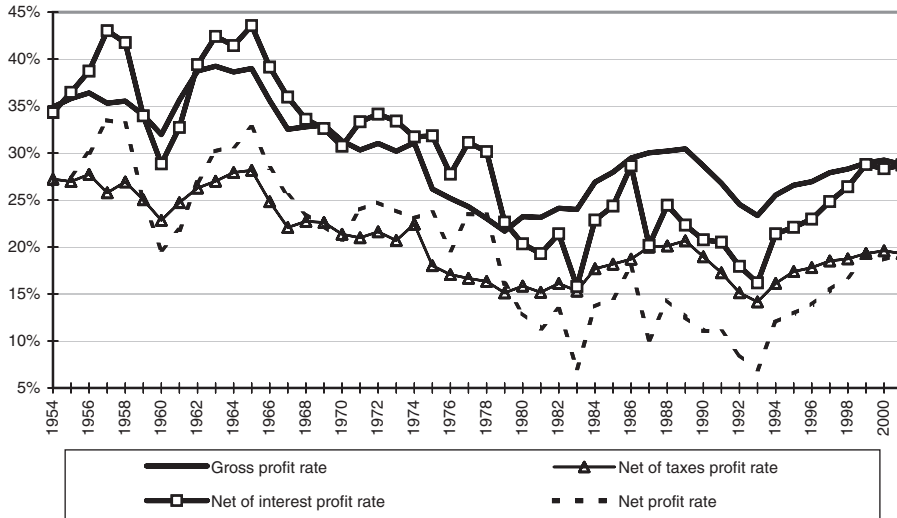
recovers partially in the following years; in 1989, it reaches a local maximum (30.4 percent), still far from both its initial and maximum level. However, this recovery disappears in the following four years; in 1993, the profit rate almost reproduces its lowest level of 1979. Finally, the period 1993–2000 sees a new moderate increment of 5.9 percent.

### 2.3 Other Estimations of the Profit Rate in Spain

As orthodox economic theory does not give the same relevance to the profit rate, precedents of estimations of this rate in Spain have a clear heterodox inspiration. The first important precedent is found in the work of Guerrero (1989), who, as in the present study, departs from the labor theory of value paradigm. In the same year, Echebarria and Herrero (1989: 9) published an article based on a “Marxist approach . . . as well as contributions from the Regulation School” where they estimate the profit rate of the industrial sector. The work of Román (1997) follows a classical approach, particularly the theoretical contributions of Anwar Shaikh. Finally, Alberdi’s research (2001) has an explicit post-Keynesian inspiration. These estimations are shown in Figure 2 compared with mine, in bold line.

A strong similarity exists in the evolution of the different estimations of the profit rate. Every series shows a similar downward trend and cyclical behavior; moreover, all of them identify the 1960s and the 1970s as the period of decrease. However, there are slight discrepancies owing to the different methodologies and sources employed in calculations.<sup>9</sup>

9. The most outstanding discrepancy is to be found in Román’s estimation, whose fall is far more accentuated. This result is imputable to the different source of capital stock employed, the data from Corrales and Taguas (1989). Differences with other series are less important. I can point out that their fall lasts longer—up to 1981 in Guerrero’s (1989) series and up to 1983 in Alberdi’s (2001), and Echeberria and Herrero’s (1989), which only declines from 1966. Besides, most divergences are to be found in the first years of the period, when estimations become less reliable. In the last decades, all series show a rather analogous evolution, in good logic, owing to the greater reliability and homogeneity of data sources used.



**Figure 3.**  
Alternative measures of the profit rate (1954–2001)

Gross profit rate = Surplus value ( $P1$ )/Capital invested in production ( $K$ ). Net of taxes profit rate = [Surplus value—Taxes] ( $P2$ )/Capital invested in production ( $K$ ). Net of interest profit rate = [Surplus value—Interest] ( $P3$ )/Capital invested in production ( $K$ ). Net profit rate = [Surplus value—Taxes—Interest] ( $P4$ )/Capital invested in production. See appendix for details.

#### 2.4 Alternative Measures of the Effective Profit Rate

The profit rate has no unique expression; different measurements may be employed depending on the economic phenomenon to be analyzed. Measurements of the profit rate differ between each other as a consequence of the different definitions of profit and capital invested in production employed. Here, I employ four different measures of profit: gross (surplus value), net of taxes, net of interest, and net (of taxes and interest).<sup>10</sup> The four alternative measures of the effective profit rate are plotted in Figure 3.

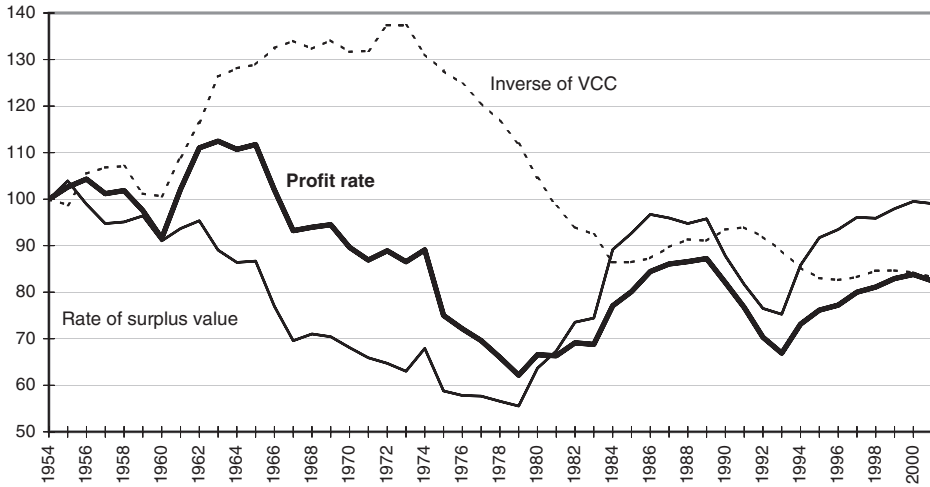
As we can see, the profiles of the different rates of profit plotted in the graph are almost identical, except for two slight differences. First, both rates net of taxes suffer an even sharper decrease, owing to the increase of the fiscal pressure on companies throughout the period. On the other hand, both rates net of interest undergo greater cyclical fluctuations, which obey the cyclical behavior of interest rates. Nonetheless, we can conclude that there are no significant differences in the dynamics of the profit rate depending on the different measures employed.

### 3. The Determinants of the Profit Rate

The behavior of the profit rate can be more concretely delimited from an analysis of the main determinants of its dynamics. I will analyze two decompositions of the profit rate into the technology of production and income distribution.<sup>11</sup> First, I analyze the traditional

10. Interest is defined as the opportunity cost of capital, that is to say, the returns that would obtain money-capital given the short-term real interest rates.

11. However, the relationships of interdependence between them do not allow for a strict decomposition of the profit rate between distributive and technical change effects.



**Figure 4.**  
Rate of surplus value and value composition of capital

Value composition of capital = Capital invested in production ( $K$ )/Variable capital ( $v$ ). Rate of surplus value = Surplus value ( $P_1$ )/Variable capital ( $v$ ). See appendix for details.

decomposition within the labor theory of value between the value composition of capital and the rate of surplus value:

$$\text{Profit rate} = \frac{\text{Rate of surplus value}}{\text{Value composition of capital}} \quad (1)$$

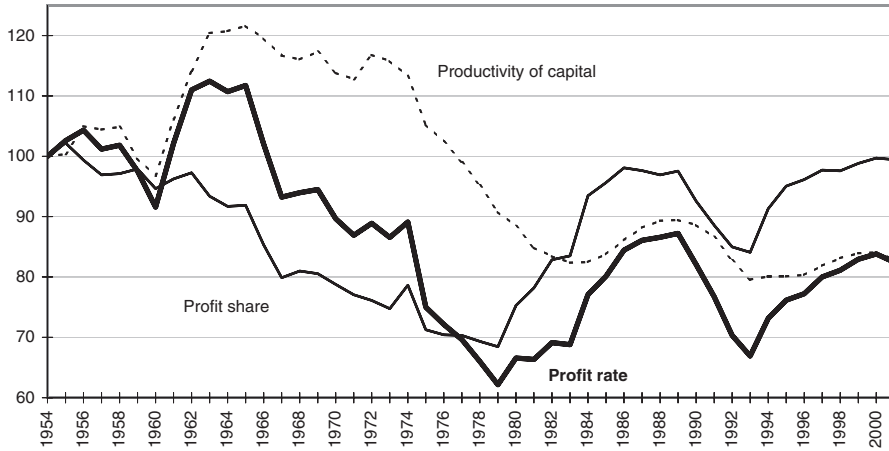
In this decomposition, we must be cautious in identifying the total influence of income distribution on the profit rate, as the value composition of capital is also affected by distribution, concretely, by the dynamics of the real wage. Results are shown in index numbers (1954 = 100) in Figure 4.<sup>12</sup>

As we can see, the fall in the effective profit rate is apparently caused by an increment in the value composition of capital, though its cyclical oscillation is primarily determined by the dynamics of the rate of surplus value. Concretely, the 17 percent drop in the profit rate corresponds to an identical increment in the value composition of capital, while the rate of surplus value shows its initial level again at the end of the period. In a first sub-period, the decrease in the value composition of capital prevents the fall in the profit rate until 1965, in spite of the downward pressure exerted by the rate of surplus value. Subsequently, the profit rate begins its downward trend caused initially by a decrease in the rate of surplus value and reinforced from 1973 onward by a strong increment in the value composition of capital. Finally, in the 1979–2001 subperiod, the recovery of the rate of surplus value does not materialize in a similar increase in the profit rate, as the value composition of capital maintains its ascendant trend.<sup>13</sup>

12. I plot the inverse of the value composition of capital as it is directly proportional to the profit rate.

13. Guerrero (1989: 848) has analyzed the evolution of the effective profit rate in Spain during the period 1954–1987 in rather the same terms as I have done: “The decrease in the rate of surplus value overlaps, partially, with each of the three different periods in the evolution of the value composition of capital—first, a decrease; then, a stagnation; and, lastly, an increase—and it is only when it starts its uninterrupted increase, from 1973–4, that the accumulation process is seriously affected.”





**Figure 5.**  
Profit share and productivity of capital

Productivity of capital = New value ( $NV$ )/Capital invested in production ( $K$ ). Profit share = Surplus value ( $P_1$ )/New value ( $NV$ ). See appendix for details.

Alternatively, the effective profit rate can be decomposed into the profit share in income and the productivity of capital.

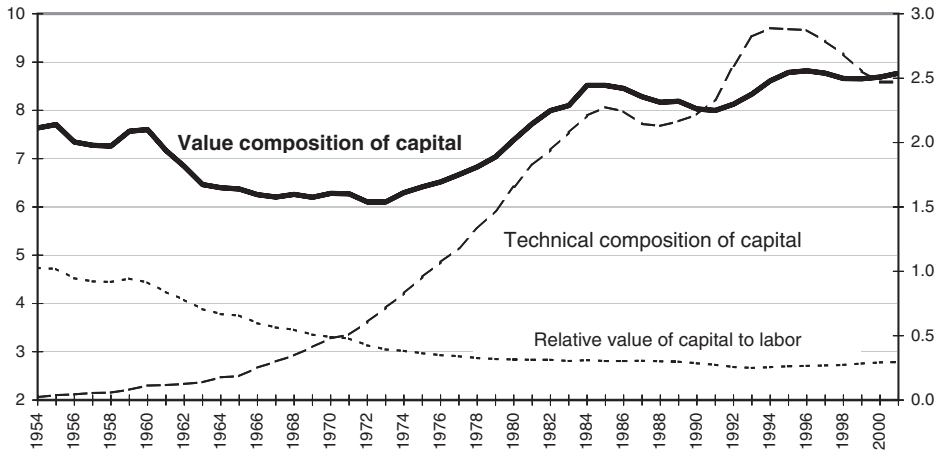
$$\text{Profit rate} = \text{Profit share} \cdot \text{Productivity of capital} \quad (2)$$

The productivity of capital is not directly influenced by changes in income distribution, and it reflects technical change more adequately than the value composition of capital. Figure 5 shows the results of this decomposition:

As the graph clearly shows, the evolution of the effective profit rate replicates, to a great extent, the dynamics of the productivity of capital, so we can attribute to this variable both the absolute fall in the effective profit rate and its cyclical evolution. Nonetheless, income distribution modulates this cyclical evolution; its initial decrease exerts downward pressure on the profit rate and the inverse occurs as from when it increases.<sup>14</sup>

In summary, the fall in the profit rate in Spain was associated with the technological change, concretely with the strong technical progress that occurred during the 1960s

14. Román (1997) and Alberdi (2001) have analyzed the Spanish economy from the perspective of the dynamics of the profit share and the productivity of capital. Román (1997: 21) observes for the period 1954–1993 that “the inverse symmetry between the path of the capital/output and that of the profit rate for the past forty years stands out as the key to unraveling the dynamics of the long wave in Spanish economic development. It is my contention that the evolution of the profit rate was casually linked to that of the capital/output ratio, and that mechanization was the driving force behind the two.” In my case, I have reached an identical conclusion. Alberdi (2001: 87) concludes that the “profitability crisis is, in reality, a consequence of the fall in the productivity of capital and also of a smaller profit share. . . . The recovery of the 1980s happened first as a consequence of a change in income distribution and then as a consequence of an improvement in the efficiency of installed capital, which reached its highest level with the high growth rates of the late 1980s.” In this case, my data show an important discrepancy; the productivity of capital does not recover in the last decade, hampering the recovery of the Spanish economy.



**Figure 6.**  
Value composition of capital and its components

Technical composition of capital = Capital invested in production ( $K$ )/Wage-laborers ( $WL$ ). Relative value of capital to labor =  $1/\text{Real wage}$  ( $RW$ ). See appendix for details.

and 1970s. However, its cyclical evolution is conditioned by the dynamics of income distribution, something particularly evident in the case of the classical decomposition into the value composition of capital and the rate of surplus value. Therefore, the behavior of the profit rate during the period 1954–2001 seems to be coherent with theoretical hypothesis of the labor theory of value about the evolution of profitability outlined in the introduction.<sup>15</sup>

In the rest of the section, I will analyze more deeply these results, examining both components of the profit rate separately.

### 3.1 Technology of Production

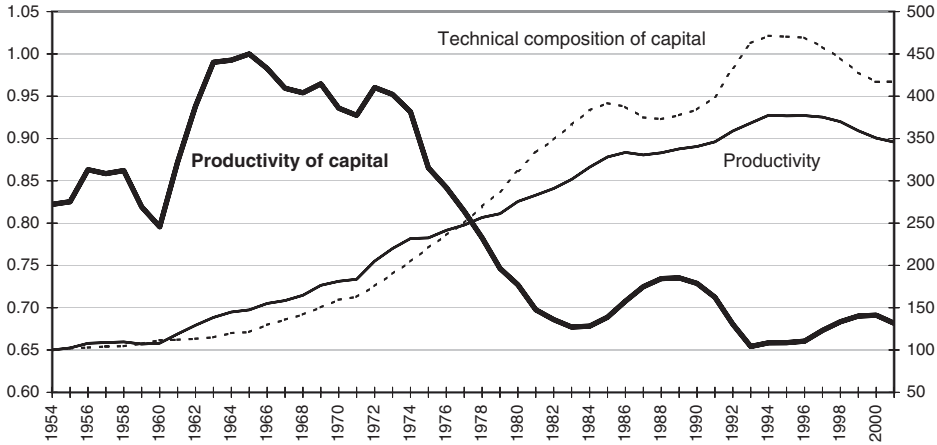
The value composition of capital and the productivity of capital are both monetary measures of the technology of production—that is to say, of the relative contribution to production of means of production and the labor force. Both can be expressed in relation to the purely technical component of the technology of production, that is, the technical composition of capital.

Following Lianos (1992: 141) and Wolff (2001: 321), we can decompose the value composition of capital ( $VCC$ ) into the technical composition of capital ( $TCC$ ) and the relative value of capital and labor:

$$VCC = \frac{K}{v} = \frac{K}{WL} = TCC \cdot \frac{1}{w} \quad (3)$$

where  $K$  is the capital stock,  $v$  is the variable capital,  $WL$  is the number of wage laborers, and  $w$  is the real wage. The inverse of the real wage ( $1/w$ ) indicates, according to Wolff,

15. This behavior of the profit rate encourages me to argue that empirical evidence in Spain does not support the hypothesis of a falling rate of profit caused by a rising wage share, as pointed out in footnote 2.



**Figure 7.**

Productivity of capital and its components

Productivity = New value (NV)/Wage-laborers (WL). See appendix for details.

“how much wages must be paid in order to obtain one unit of capital. It is like the average labor content of capital, except in wage terms instead of labor terms.” In this way, the decomposition shows to what extent increases in the technical composition of capital (and, therefore, in productivity) are compensated by increases in the real wage; in other words, it expresses the cheapening of capital in relation to labor.<sup>16</sup> Figure 6 shows the evolution of both components.<sup>17</sup>

The graph reveals that the initial decrease in the value composition of capital responds to a combination of two factors: a moderate increase in the technical composition of capital and, overall, a sharp increase in the relative price of labor as a consequence of the strong increment in the real wage.<sup>18</sup> Therefore, the influence of the value composition of capital on the profit rate until the 1970s was dominated by the effects of distribution—the evolution of the real wage—rather than by the mechanization of the economy. In the second half of the period, the relative value of capital keeps almost constant, so the cyclical movements in the value composition of capital mirror the fluctuations in the technical composition of capital.

In a similar way, the productivity of capital can be decomposed into the technical composition of capital and the productivity of labor:

$$\text{Productivity of capital} = \frac{NV}{K} = \frac{\frac{NV}{WL}}{\frac{K}{WL}} = \frac{\text{Productivity}}{\text{Technical composition of capital}} \quad (4)$$

16. For reasons already stated, I define the value composition of capital in constant prices. Therefore, changes in the value of capital in relation to labor ( $1/w$ ) will only reflect changes in income distribution, but not changes in the relative price of wage goods to capital goods.

17. To discern better the importance of each component, I plot both the value composition of capital and the relative value of capital to labor in the right axis, and the technical composition of capital in the left axis.

18. This marked increase in the real wage is explained below in the analysis of income distribution.

where  $NV$  stands for the new value created. This latter decomposition determines to what extent technical progress—that is to say, the substitution of labor force by machinery—results in an increase of labor productivity. Figure 7 shows the evolution of both variables.<sup>19</sup>

In the whole period, the overall decrease in productivity of capital is explained by a faster growth of technical composition of capital in relation to productivity. Consequently, I believe the decrease in the profit rate can be attributed to an increase in the degree of mechanization—especially during the 1960s and 1970s—that outstrips increases in productivity.

On the other hand, it is important to emphasize that the transitory increases in the productivity of capital in the late 1980s and 1990s are caused, principally, by temporary decreases in the degree of mechanization, instead of strong increments in productivity, as during the 1960s. Therefore, it seems that these are not pure increments in capital efficiency, so their positive effects on profitability could be ephemeral; they would disappear once mechanization returns to its normal growth path.<sup>20</sup> This late technological behavior exemplifies the kind of economic policy that has been implemented since the 1990s in Spain, as will be put forward in the analysis of income distribution.

### 3.2 Income Distribution

Income distribution can be analyzed from the standpoint of the evolution of productivity and the real wage; both the rate of surplus value and the profit share can be decomposed into these two components:

$$\text{Rate of surplus value} = \frac{s}{v} = \frac{NV-v}{v} = \frac{NV}{v} - 1 = \frac{\frac{NV}{wL}}{\frac{v}{wL}} - 1 = \frac{\text{Productivity}}{\text{Real wage}} - 1 \quad (5)$$

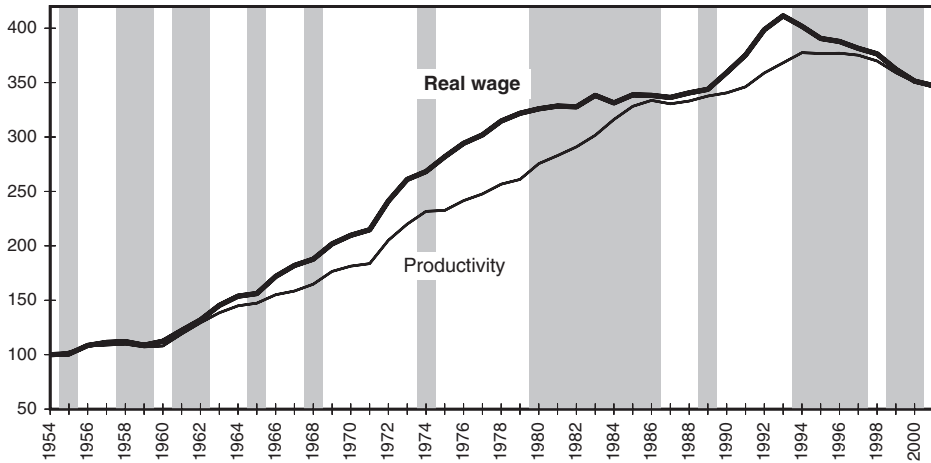
$$\text{Profit share} = \frac{s}{NV} = \frac{NV-v}{NV} = 1 - \frac{v}{NV} = 1 - \frac{\frac{v}{wL}}{\frac{NV}{wL}} = 1 - \frac{\text{Real wage}}{\text{Productivity}} \quad (6)$$

where  $s$  is the surplus value. In both cases, an increase in productivity or a decrease in real wage implies a change in income distribution in favor of profits. Figure 8 plots their evolution, with 1954 = 100. Shaded areas represent the years when productivity grows faster than real wage and vice versa.

We can differentiate between two periods in the evolution of the income distribution components. After a few years of moderate growth comes an initial period of rapid growth

19. The productivity of capital is plotted in the left axis and its components in the right axis in index numbers with 1954 = 100.

20. The explanation of this behavior deals with the specific evolution of employment (and unemployment) in Spain during the last decades, as expounded below.



**Figure 8.**  
Productivity and real wage (1954 = 100)

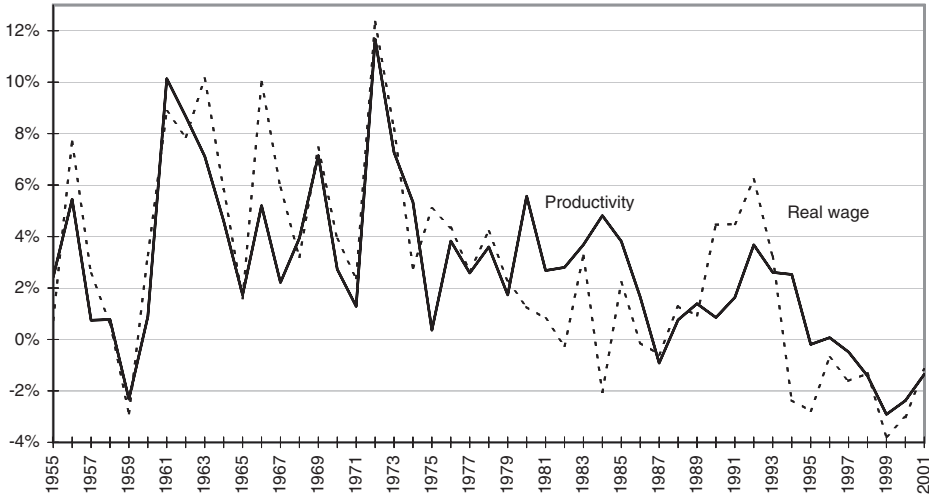
Real wage ( $RW$ ) = Variable capital ( $P_v$ )/Wage-laborers ( $WL$ ). See appendix for details.

of both components, with greater increases in real wage than in productivity. In a second period, instead, increases are moderate—even with rather long periods of decline of both variables—and phases of greater increase of productivity and real wages following one another, though the first ones predominate in length and intensity. Consequently, we can conclude that the downward pressure exerted by income distribution on the profit rate during the first half of the series is caused by long-lasting increments in real wages. In the second part, the upward pressure on the profit rate is because of the deterioration of the real wage, while its cyclical fluctuation is caused by the disparity between changes in productivity and real wage.

This evolution can be analyzed within the Spanish economic context of the second half of the twentieth century. In my opinion, the high levels in the rate of surplus value at the beginning of the period<sup>21</sup> are conditioned by exceptional historical events, namely the Civil War and the depression it generated, as well as the period of economic autarchy that characterized the first years of Franco's dictatorship. Concretely, the Spanish economy at the beginning of the 1950s was characterized by real wages below their normal level.<sup>22</sup> The

21. The level in the rate of surplus value in Spain can be compared with similar contemporary estimations of the rate of surplus value in other countries. Reati (1986: 85n), for instance, points out that "in 1960 the German industry had a higher profit/wages ratio than that of the other European countries. For all manufacturing, the gross rate was 65.1 in Germany, 56 in France and 48.4 in the U.K.; it is only in Italy that it is higher (72.9)." Gouverneur (1990) estimates the rate of surplus value of the entire economy for four countries. For the United States, this rate oscillates between 38.5 percent and 41 percent from 1948 to 1987. In Germany, it oscillates between 34.4 percent and 47.9 percent in the period 1966–1984. Last, this rate oscillates in the United Kingdom and France during the period 1972–84 between 32.4 percent and 48.1 percent, and between 29.9 percent and 45.3 percent, respectively. Jüttner and Murray (1983) have estimated the rate of surplus value oscillates in Australia between 37.4 percent and 66.2 percent in the period 1919–1968. In conclusion, "normal" levels of the rate of surplus value at the beginning of the 1950s—between 30 percent and 50 percent—are far lower than the levels of over 70 percent prevalent in Spain.

22. The Civil War implied a serious drawback for the Spanish economy, given the material destruction of a good deal of the productive apparatus and the loss of thousands of human lives. The postwar situation was



**Figure 9.**  
Growth rate of productivity and real wage

subsequent Spanish economic opening to the international scene allowed the importation of new technology and foreign capital, thus bringing about a rapid technical change that translated into marked increases in productivity. This happened to be the ideal situation for the recovery of the real wage to its normal levels.<sup>23</sup> Figure 9 allows us to discern the relation between changes in productivity and real wage.

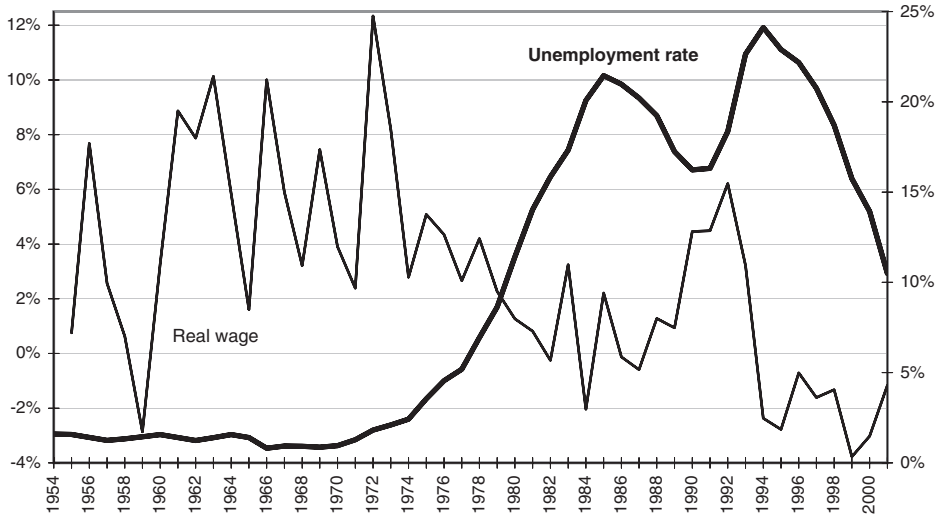
In the first half of the period, increases in real wages replicate increments in productivity, though wage increases are greater. The correspondence is much smaller during

characterized by low levels of real output and important technological backwardness, also inherited from the limited economic development of Spain in previous decades. This situation was worsened by isolation from the international scene that shaped the Spanish postwar economy: the state of autarky. The absence of an adequate technological base and of external sources of investment oriented economic policy of fascist Spain toward increasing the profit share in income. As Román (2002: 97) points out, "it is evident that policy makers saw increasing the share of profits in output as their over-riding objective." In the same vein, Echebarria and Herrero (1989: 14) assert that: "The State provided decisive tools to encourage and construct an accumulation process with a basically extensive character, whose main support was the reduction of the purchasing power of the working class . . . The domination exerted by capital in social relations of production permitted the possibility of extraction of absolute surplus value."

Besides, they observe that surplus value so created did not imply increases in productive investment. In this way, "the prevalent deficit in productive capital formation impeded increases in labor productivity and generated the conditions which made it impossible to increase real wages" (Ibid: 15).

23. As an illustrative point, real wages multiplied by 2.3 in the thirteen-year period between 1960 and 1973, which implies an annual growth rate of 6.7 percent. Román (2002: 104) points out another factor that complemented the upward pressure on the real wages: "One of the unintended consequences of the large exodus of workers was the sharp reduction in the domestic labor force, thus strengthening somewhat its bargaining position. In the halcyon years of the early 1960s, after decades of suppressed wage expectations in an international environment of greater affluence, the movement for higher wages received its belated rewards."

In this sense, I can also assert that the decrease in the first half of the period in the value composition of capital is caused by exceptionally low real wages; this implied an exceptionally high level in the value composition of capital in the initial years analyzed.



**Figure 10.**  
Rate of unemployment and growth rate of real wages

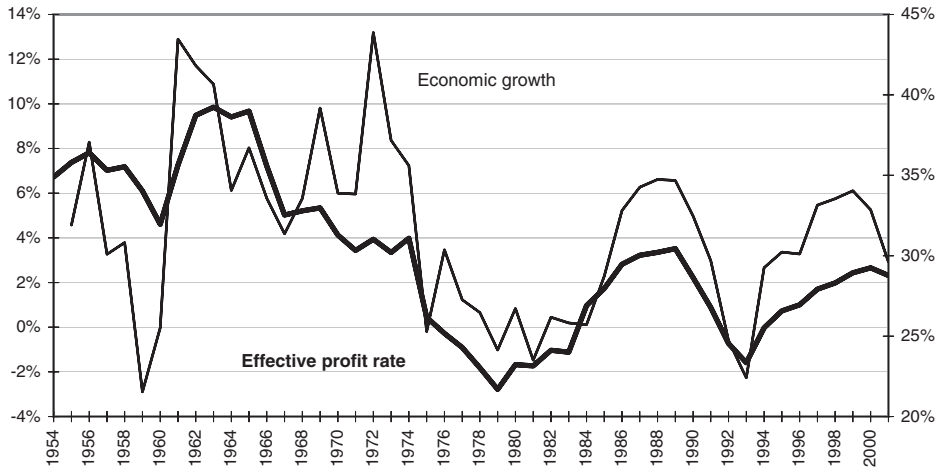
the second half.<sup>24</sup> In fact, the rapid pace of accumulation that caused an upward pressure on wages disappeared with the world economic crisis in the early 1970s,<sup>25</sup> though real wages kept their growth inertia until the end of the decade. The slump in productivity hampered increases in real wages, whose dynamics were determined by the evolution of unemployment since the 1980s. This is shown in Figure 10, where I plot the growth rate of real wages (left axis) and the unemployment rate (right axis).

As we can see, the rapid economic growth (and official statistics) kept unemployment at practically null levels until the early 1970s. Since then, the soaring of the industrial reserve army has limited real wage increases. This tendency was only temporarily reversed between 1989 and 1993, when the rate of unemployment moderated slightly to levels below 20 percent, but it became the dominant tendency later, when Spain suffered the highest rates of unemployment in its history. Worthy of note is the decrease of 18.5 percent in real wages during the 1993–2001 period, in what constituted a huge loss in the purchasing power and standard of living of the Spanish workers.<sup>26</sup>

24. The correlation coefficient for the period 1954–2001 of both series is 0.80, reaching 0.90 in the subperiod 1954–1973 and going down to 0.62 in the subperiod 1974–2001.

25. In my opinion, this crisis, at the national and international level, is caused by the fall in the profit rate caused by technical progress and the rapid rhythm of accumulation, accentuated by an unfavorable evolution of income distribution. The precise relation between the fall in the profit rate and the structural crisis is outside the scope of this article (see Cámara 2003a: 402–417). In this way, it is also out of the scope of this article to confront this opinion with other explanations of the world crisis and long-term economic evolution that would include theories of underconsumption, social structures of accumulation, and the French Regulation School, among others.

26. I believe the plunge in productivity and therefore in real wages cannot be attributed to the fall in the profit rate, but that the economic policy carried out from the beginning of the 1990s also played an important role. In general, labor reform in 1992 initiated a policy of precarious employment and investment in low-productivity service sectors. This was followed by economic measures that came with the Maastricht convergence criteria. That the fall in unemployment experienced in the last years has not been followed by an increase in real wages can also be attributed to this state orientation of wage policy.



**Figure 11.**  
Effective profit rate and economic growth

In summary, the influence of income distribution on the profit rate was strongly conditioned by the evolution of real wages. In the first part of the period, real wages incremented rapidly from exceptionally low initial values, causing a decrease in the profit share and a downward pressure on the profit rate. Once the accumulation crisis put an end to this continuous rise, the dynamics of real wages was determined by the evolution of unemployment, explaining its important fluctuation in this second part as well as its significant worsening.

#### 4. Conclusion

Although in gross terms, the evolution of the profit rate and its components has been useful to characterize the behavior of the Spanish economy in the second half of the twentieth century, both in the long term and in the short term.

In the long term, the profit rate shows a long wave formed by a downward and an upward phase, though it does not recover its initial levels. The fall in the profit rate seems to be caused by technological progress, that is, by the increment in the requirements of capital per unit of labor. These two phases correspond to the phases of rapid growth and stagnation of the Spanish economy, as can be observed in Figure 11.

In the short run, the evolution of income distribution shapes the cyclical fluctuation of the profit rate. Except for the first long period of higher rates of growth of real wages over productivity, alternate periods of higher growth of each variable are caused by the dynamics of the unemployment rate.

In conclusion, the empirical evidence on the dynamics of the profit rate in Spain during the period 1954–2001 seems to be coherent with the behavior predicted by the labor theory of value, both in the long and short terms. Besides, these dynamics permit us to briefly delimit the essential elements of the evolution of the Spanish economy over this period. Of course, the characterization of the Spanish economy from the standpoint of the



profit rate and its components is, in many respects, insufficient; it is necessary to broaden this investigation with the incorporation of new variables of great relevance.<sup>27</sup> Nonetheless, I am in a good position to assert that I have provided an adequate analytical framework in which to conduct future research.

## Appendix

The effective profit rate is defined as the ratio between the mass of profits and the capital invested in production. Given that data of invested capital are only available in constant prices, I carry out my estimations using this valuation.<sup>28</sup>

### I. Mass of Profits

#### 1.1 Data Sources

The national accounts statistics of the *Instituto Nacional de Estadística (INE)* are my main data source, essentially the data from its latest version, the *Contabilidad Nacional de España de 1995 (CNE-95)*. To obtain homogeneous series for the entire period, I use the linked series of the previous version of the national accounts—the *CNE-86*—prepared by Uriel, Moltó, and Cucarella (2000) [CNEe-86] and published by *Fundación BBVA*. For some estimations related to fixed capital consumption, I had to combine this source with data from my capital invested source, which is described below. For the estimation of imputed rentals, I use data from the *Encuesta Anual de Servicios (EAS)* of the *INE* and the estimation carried out by Guerrero (1989). For the estimation of noncapitalist market production, wage-laborers (*WL*), and real wage (*RW*), data from the *CNE* are complemented with data from the *Encuesta de Población Activa (EPA)* of the *INE* and estimations of Guerrero (1989) about the active population.

#### 1.2 Definitions

I use four different measures of the mass of profits: gross, net of taxes, net of interest, and net (of taxes and interests):

$$P_1 = \text{Surplus value} \tag{1}$$

$$P_2 = \text{Surplus value} - \text{taxes} \tag{2}$$

$$P_3 = \text{Surplus value} - \text{interest} \tag{3}$$

$$P_4 = \text{Surplus value} - \text{interest} - \text{taxes} \tag{4}$$

Surplus value is defined as the difference between new value (*NV*) and variable capital (*v*):

$$\text{Surplus value} = \text{New value} - \text{Variable capital} \tag{5}$$

New value (*NV*) is defined as value created in the capitalist sphere during a year. For its calculation, I depart from the GDP of orthodox national accounts and, additionally, I subtract four different items:

Private productive fixed capital consumption (*FCC<sub>pp</sub>*), as it is part of constant capital and it must be included in the total value of commodities, but not in the new value.

27. A reviewer of this article warned me about the evident “supply-side” focus of this article. I agree with him as I put forward the need for further research that would include the role of demand and finance in economic fluctuations in Spain. However, I feel confident the conclusions drawn in this article about the long-term relevance of profitability in the Spanish economy can be fairly supported.

28. The alternative would have been to convert the series of invested capital into current prices. However, this method does not seem to provide reliable data in the Spanish case.

Net value added of nonmarket services ( $NVA_{NMS}$ ), as it is noncapitalist production.

Imputed rentals of owner-occupied dwellings ( $IR$ ), because it is a fictitious activity and does not imply either labor performance or value creation.

New value of noncapitalist market production ( $NV_{NCMP}$ ), as it is simple market production, but not capitalist.

$$NV = GDP - FCC_{PP} - NVA_{NMS} - IR - NV_{MNCP} \quad (6)$$

Private productive fixed capital consumption ( $FCC_{PP}$ ) is calculated by deducting fixed capital consumption of nonmarket services ( $FCC_{NMS}$ ) and residential fixed capital consumption ( $FCC_{RES}$ ) from total fixed capital consumption ( $FCC$ ):

$$FCC_{PP} = FCC - FCC_{NMS} - FCC_{RES} \quad (7)$$

Net value added of nonmarket services ( $NVA_{NMS}$ ) is calculated by subtracting fixed capital consumption of nonmarket services ( $FCC_{NMS}$ ) from the gross value added of nonmarket services ( $GVA_{NMS}$ ):

$$NVA_{NMS} = GVA_{SNM} - FCC_{NMS} \quad (8)$$

Imputed rentals of owner-occupied dwellings ( $IR$ ) is calculated as a deduction of the net value added of the “real estate” sector of the *EAS* (where no imputation is made) from the same value of the national accounts. I also use as proxies the household production for own final use (*CNE*) and the imputed rentals estimation carried out by Guerrero (1989).

To calculate the new value of noncapitalist market production ( $NV_{NCMP}$ ), I assign an average income to independent workers. Absolute values of this average income are calculated as an approximation to the average real wage of private wage-laborers. Average income is shaped with the fluctuations of the new value:

$$NVA_{NCMP} = \text{Independent workers} * \text{Average income} \quad (9)$$

Variable capital is defined as capital advanced in the payment of the labor force in capitalist spheres. I depart from the compensation of employees (*CE*) of the whole economy from orthodox accounts and deduct the compensation of employees of noncapitalist spheres, that is to say, the net value added of nonmarket services:

$$v = CE - NVA_{NMS} \quad (10)$$

“Taxes” comprises all taxes included in the category operating surplus of the *CNE-95*, namely, net taxes on products (mostly VAT) and other taxes on production. “Interest” is calculated as the opportunity cost of capital in the short run.

## 2. Capital Invested in Production: Definition and Data Sources

Capital invested in production ( $K$ ) is defined as the sum of value advanced in the whole productive process; therefore it comprises productive capital, commodity-capital, and money-capital. To this extent, this definition differs from the orthodox definition of capital stock, which only includes fixed material assets.<sup>29</sup> That is why my estimation of capital invested in production only takes into consideration these assets. My departure point is the stock of the private productive capital published by *Fundación BBVA* (Más, Pérez, and Uriel 2000). Therefore, I exclude both public and residential capital stocks. Then, I proceed with three operations to arrive at my estimation of capital invested in production:

As data are offered in constant prices of 1986 and 1990, I need to convert them into constant prices of 1995.

29. The new *European System of Accounts of 1995*, *ESA-95*, also includes some immaterial assets, such as software and copyrights. Nonetheless, my main data source employs the previous definition.

The data source comprises the period 1964–1998, so it is necessary to extend the series backward and onward to cover the whole period of analysis.

Last, I need to split the productive private capital stock between capital employed in the capitalist sphere and capital employed in noncapitalist market production.

The first operation requires the use of the implicit deflator of private productive investment of the original data source. The conversion is carried out by multiplying the capital stock valued at prices of the year  $n$  in the year  $t$  ( $SK_t^n$ ) by the ratio of the price index of 1995 ( $P^{1995}$ ) between the price index of the year  $n$  ( $P^n$ ):

$$SK_t^{1995} = SK_t^n \cdot \frac{P^{1995}}{P^n} \quad (11)$$

The second operation demands the elaboration of the series of private productive gross fixed capital formation and fixed capital consumption for the years not covered by the original source. The series of gross fixed private productive capital formation for the years 1955–1963 is obtained from the data given by *Fundación BBVA* in a previous version of their capital stock estimation (Más, Pérez, and Uriel 1995). For the 1995–2001 period, I employ *INE*'s data from the *CNE-95*. On the other hand, the series of fixed capital consumption for the last part of the period is obtained from the average life of private productive capital implicit in the elaboration of the original series. For the period 1954–63, I assume that the evolution of the proportion of total fixed capital consumption to the private productive part of it keeps the trend of the following years.

Last, the third operation needs two additional assumptions about the relationship between the grade of mechanization of both spheres of production, namely:

The capitalist sphere is more capital-intensive than the noncapitalist one. Concretely, the degree of mechanization is between 1.1 and 1.5 greater in the capitalist sector than in the noncapitalist one over the period.

The mechanization process is more dynamic in the capitalist sector. Concretely, the capitalist sector accumulates an average of 13.4 percent of the income created in this sector, while this figure goes down to 9.8 percent for the noncapitalist sphere.

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