Privatisation, liberalisation and performance of divested firms in Spain

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Abstract: In this paper we review the main characteristics of the Spanish privatisation and liberalisation processes and their consequences for the performance of privatised firms. Using conventional pre- versus post-privatisation comparisons, we do not find over a medium term horizon significant improvements in privatised firms' profitability and operating efficiency once the industry effects are considered. But we find significant improvements in divested firms' industry adjusted profitability and efficiency over a long term horizon. Furthermore, the results of the study suggest that the economic environment may play an important role for the success of the privatisation processes, and that profitability and efficiency gains seem to take place in firms operating in competitive markets and in firms that were privatised during periods of macroeconomic growth. The results also support to some degree the influence on firms' performance of restructurings that take place before privatisation.

Key words: privatisation, liberalisation, firms' performance, firms' efficiency

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1. Introduction

In the last decades the privatisation processes have been an important phenomenon around the world. Since their beginning in 1979 in the United Kingdom privatisations have taken place in European countries, like France, Italy or Germany, and in developing countries of South America, Asia and Africa. Spain has not been an exception to this general trend. 131 firms were privatised between 1985 and 2003. Spain's process of economic restructuring has been founded upon liberalisation and deregulation in the financial sector and key product markets. Public sector restructuring and the privatisation of State-Owned Enterprises (SOEs) have been a major part of the economic reform. According to the OCDE (2003), the privatisation program in Spain raised 38,401million US$ between 1990 and 2001, thereby ranking Spain fourth of the fifteen long-standing EU countries in terms of revenues from privatisations. These liberalisation and privatisation processes have resulted in ever-expanding growth standing nowadays Spain as one of the EU countries with the largest increase in GDP.

1985 marked the beginning of the privatisation of Spanish State-Owned Enterprises for three main reasons. Firstly, it was a response to the economic crisis of the late 1970s and early 1980s, when there were high levels of inflation, interest rates and unemployment; secondly, there was an obvious need to adjust the Spanish industry-with its unwieldy, unprofitable public sector- to the new economic environment being ushered in by Spain joining the European Community in 1986. Finally, it was a reaction to the opening-up of international markets. The process, which has been pushed along by Socialist and Conservative governments alike (between 1985-1996 and 1996-2003, respectively), has still not terminated. It has also been accompanied by an increase in competition in key product markets, particularly during the second half of the 1990s and in the wake of the liberalisation plan initiated in 2000. Liberalisation and deregulation have led to a fall in prices, which were actually below the euro-area average in most sectors for 2003 (IMF, 2004).

The economic theory of privatisation is a subset of the large literature on the economics of ownership and the role for government ownership (or regulation) of productive resources (Megginson and Netter, 2001). The motivations and objectives underlying privatisation processes include: financial, political and economic motivations (Cuervo, 1997). The financial motivations refer to the revenues obtained by the States as a

consequence of the sale of the formerly State-Owned Enterprises -SOEs- (Vickers and Yarrow, 1988) and to the benefits associated to the elimination of subsidies to SOEs. The revenues obtained through the privatisation processes have derived in reductions of the public deficit of the economies that initiated these processes. Political arguments for privatising SOEs rely on weaknesses of the State's ownership, on the problems for governments in defining the goals of the firm and on the superior assignment of resources by the markets. Besides, privatisations may promote the entrance of foreign capital and of institutional investors and may help developing capital markets, promoting a "popular capitalism".

Economic motivations for privatisation rely on the superior performance of private over State-Owned Companies. These arguments for privatisation are supported by the results of different studies that suggest that private ownership leads to higher rates of productivity growth, to superior efficiency and firm performance (Cuervo and Maroto, 1983; Ehrlich *et al*., 1994; Argimon *et al*., 1999; Ng and Seabright, 2001; Dewenter and Malatesta, 2001). Different authors also find an increase in the performance of privatised firms (Megginson *et al*., 1994; D´Souza and Megginson, 1999; Wei *et al*., 2003; Boubakri *et al*., 2005; D´Souza *et al.,* 2005), although privatisations do not seem to lead to systematic improvements of allocative efficiency (Pestieau and Tulkens, 1993) or of productive efficiency (Vickers and Yarrow, 1988; González-Páramo, 1995; Martin and Parker, 1997). The results of these papers suggest that the change of public to private ownership may not be the main determinant of the observed increase in the performance of privatised firms. Other factors, such as firms' management and the competitiveness of markets may influence firms' performance after privatisation. For instance, firms' performance improvements could be due to a greater exploitation of monopoly power, which has harmful effects on allocative efficiency, rather than productive efficiency.

Our paper aims to contribute to this literature, firstly, by reviewing the liberalisation and privatisation processes that have taken place over recent decades in Spain, and secondly, by analysing the consequences on the firms' economic performance of one of the largest privatisation processes undertaken by a developed economy. The empirical evidence on the Spanish privatisation process is scarce and leads to non-conclusive conclusions about the possible improvements in the performance of privatised firms (Sanchís, 1996; Melle, 1999; Villalonga, 2000; Romero, 2005). Besides, compared to previous analyses

of the Spanish case, our study presents some differential characteristics. We study not only the possible post-privatisation improvements in profitability and efficiency, but also in output, investment, leverage and employment. All variables are analysed raw and industry adjusted. Besides, the period of time considered in the study (1985-2000) is larger and our sample encompasses all types of privatisations (direct sales and public offerings) and approximately 50% of the firms that were privatised over the period considered, and 45% of the total assets of the divested firms.

The results of the study do not support over a medium term horizon a post-privatisation improvement in firms' profitability and efficiency, once the industry effects are considered. But we do find significant improvements in the firms' industry adjusted profitability and efficiency over a long term horizon. These results point to the necessity to consider larger time horizons when analysing privatisation processes. Moreover, we find that the economic environment may play an important role for the success of privatisations. On one hand, firms that belong to competitive sectors, not to utilities, show higher improvements in performance and efficiency, as suggested by Sheshinski and Lopez-Calva (1999). On the other hand, privatised firms during periods that coincided with expansive economic cycles also show larger performance improvements (Villalonga, 2000). Likewise, pre-privatisation restructurings could also help explaining the results of privatisations (Dewenter and Malatesta, 2001; Bosch and Vergés, 2002).

The rest of the paper is organized as follows. Section 2 briefly describes the formation of the Spanish public sector and the liberalisation and privatisation processes during the 20th century. Two different periods can be distinguished within the Spanish privatisation process: the privatisation program undertaken by the Socialist government (1985-1996) and the program undertaken by the Conservative government (1996-2003)[1]. Section 3 shows the empirical evidence about the Spanish privatisation process. Section 4 refers to the consequences of privatisation processes on firm performance. Section 5 describes the sample selection, methodology and variables used in the study. Finally, the results of the empirical analyses are discussed in section 6 and section 7 presents the main conclusions of the paper.

[1] In March 2004 the Socialist government won the general elections. We therefore consider the conservative's period until the end of 2003, although the conservative party ruled the country also during the first months of 2004.

2. The Spanish privatisation and liberalisation processes

The Spanish privatisation program is one of the most far-reaching programs ever undertaken by a non-Eastern European country. Before it began, in the early 1980s, the Spanish State was actively involved in the economy, mainly as a consequence of the political regime established in the country after the Spanish Civil War (1936-1939). General Franco's victory in 1939 ushered in a period of economic and political isolation, which, when coupled to policies of self-sufficiency and interventionism, spawned a State-led economy. This autarky period was then followed by a period of economic growth (1959-1974), during which the State reduced its interventionism in the economy but nevertheless continued to regulate the economy and subsidise certain industries and production activities. The State also acquired a large number of ailing private companies, thereby acquiring a large public sector made up mainly of companies operating in non-profitable sectors. In the 1970s the international economic recession hit Spain hard. The economic crisis that followed coincided with the end of the Franco regime (General Franco died in 1975) and the transition to democracy. It was a period of high social and political instability, when the democratic governments of the transition period (1974-1983) were loath to start any restructuring of the public sector, preferring, in fact, to use the State Holding (Instituto Nacional de Industria) to maintain employment and provide social stability. The public sector consequently grew even larger. By the beginning of the 1980s it was burdened by overcapacity and severe financial problems (see Figure 1)[2].

[FIGURE 1]

Between 1985, the starting point of the privatisation process, and 2003, 131 State-Owned Companies were privatised in Spain (117 between 1985 and 2000). These companies belonged to almost all industries, including strategic industries such as telecommunications, energy, transport and banking. The privatisation of SOEs took place in stages (partial privatisations), but also through total sales; by means of direct sales and public offerings and both under the Socialist (PSOE) and the Conservative (PP) governments. A considerable number of firms, particularly the largest ones, were privatised in stages. 48 percent were sold off in different phases during the Socialist

[2] Gamir (2003) reviews the process of change of the Spanish State-Owned Enterprises and the main characteristics of the privatisation process.

period, 32 percent were first sold during the Socialist period and continued to be privatised under the Conservatives, and 20 percent were privatised in different phases between 1996 and 2003 (Table 1). Under the Socialist government (1985-1996) the State retained in partial privatisations (after the first stage of privatisation), a mean of 36.84 percent of the shares of the firms, compared with a figure of 49.47 percent under the conservative government (1996-2003). Besides, more than half of the privatisation processes (60.23 percent) took place under the Socialist government's office between 1985 and 1996, especially during the early stage (1985-1992). The equivalent figure for the Conservative government is 39.76 percent, even though there was more privatisation activity per year. The methods of privatisation used were mainly direct sales (79 per cent) and public offerings (18 per cent), although in some cases auctioning was used (3 per cent).

[TABLE 1]

For Spain and other EU countries, the revenues obtained from the privatisation process during the 1990s helped meeting the Maastricht criteria of a fiscal deficit below 3 percent and public debt below 60 percent of the GDP. Actually, according to Vergés (1998), up to 75 percent of the proceeds obtained through the privatisation of State-Owned Companies from 1992 onwards, particularly during the years 1996 and 1997, were devoted to this end.

Besides this large privatisation process, under the Conservative government most regulated industries were liberalised. In the electricity industry, liberalisation had been initiated by the Socialist government with the passing of Law 30/1995, which created an independent regulatory body –The National Electricity Grid Committee (Comisión Nacional del Sistema Eléctrico)– which later merged with the National Energy Committee (Comisión Nacional de la Energia). This was enhanced by Law 54/1997 and Royal Decree 6/1999. Competition was brought to the system firstly by creating a pool of generators and then by gradually allowing a choice of electricity supplier from 1998 onwards. Full liberalisation was accomplished by 1 January 2003. In the gas sector, Royal Decree 1377/1996 lowered the barriers for entry into the industry and inaugurated competition, Law 6/1999 followed, and by 1 January 2003 all consumers could choose their gas supplier. In the oil industry, oil prices were liberalised in 1996, Law 34/1998 culminated the process of deregulation and liberalisation of the oil industry by

eliminating any remaining price limitations and restrictions. Furthermore, Royal Decree 15/1999 brought competition into the retail distribution market.

In the telecommunication sector, the liberalisation process began in 1997 with the approval of a raft of parliamentary laws. Under Law 12/97, Retevisión became the second fixed telephone operator, ending the monopoly of the already partially privatised Telefónica; Law 20/97 established new tariffs and conditions for connection. The Committee for the Telecommunications Market was also created in 1997. The liberalisation process was consolidated one year later by the General Law of Telecommunications, Law 11/98. During this same period deregulation and liberalisation were also applied to the water and postal service industries (the 1999 Water Law and Law 24/1998, respectively), with sea, air and road transport following on in the late 1990s.

A major consequence of these privatisation and liberalisation processes that have taken place in Spain has been their positive effect on the prices and quality of goods and services (Hernández and López de Castro, 2000). In the telecommunication sector, prices for fixed telephony and for long-distance calls fell by about 50 percent and 58 percent respectively between 1998 and 2002 (Arocena, 2003). Electric companies have also reduced their prices. Household tariffs decreased by 13 percent between 1997 and 2002. In contrast, according to the Energy Agency (CNE, 2001), the average natural gas prices in Spain for the industrial sector have been the highest in Europe.

A further hallmark of the Spanish privatisations was the creation of "golden shares", which have provided the Spanish State with at least some level of control. The Spanish State retained a "golden share" in seven companies privatised by public offerings[3]. Law 5/1995, passed in Spain, which opened the door for the creation of golden shares, was called into question in 2000 by Brussels. In 2002 the European Court questioned the use of golden shares by member states (Cases C-367/98, C-483/99 and C-503/99). The Court's decision obliged member states to modify their legislation. In May 2003, the European Court declared golden shares retained by the Spanish State in Repsol, Endesa, Argentaria, Telefónica, Indra Sistemas, and Tabacalera to be illegal, arguing that they impeded capital flows. As a result of this rule, the Spanish State would not be able to exercise its golden shares rights in the four companies where they still existed: Repsol,

[3] Argentaria, Endesa, Iberia, Indra Sistemas, Repsol, Tabacalera and Telefónica.

Endesa, Telefónica and Iberia. Actually, in November of 2005, the Spanish government approved to send to the Parliament a rule that will eliminate the golden shares of privatised companies.

Privatisation by public offerings unquestionably helped create a "popular capitalism" in Spain. Whilst the State participation in the Spanish Stock Market decreased at the end of the last century and the beginning of this one (from 16.64 percent in 1992 to 0.43 percent in 2002), shareholdings held by individuals and families increased considerably (from 24.44 in 1992 to 28.31 percent in 2002, which is an increase of 15.83 percent). This dual effect was particularly remarkable from 1996 to 1998, the years of greater privatisation processes. Public offerings were made with an underpricing of 11.70 percent, which is a larger percentage than the equivalent mean underpricing for private companies subject to public offerings, which stands at 0.57 percent (Alvarez, 2000)[4]. The privatisation process helped enlarge the Spanish Stock Market. The Madrid Stock Exchanges' 1990 capitalisation was 49,679.61 millions euros. In 1995 it rose to 99,689.59 millions euros and in the first semester of 2005 (July) to 430,658.819 millions euros. At the beginning of the year 2005, the stock market capitalisation of companies privatised which belonged to the Ibex-35 Index was 197,088.441 millions euros, 48 percent of the market capitalisation of the firms that made up the Ibex-35 Index, and the privatised companies represented a 42 percent of the market capitalisation of the Madrid Stock Exchange General Index.

These privatised firms present a different ownership structure in comparison to non-privatised firms. Privatised firms in the Ibex-35 Index show a slightly higher level of free-cash flow (68.91 percent compared to 56.49 percent for all companies in the Ibex-35 Index), with non-financial enterprises, banks and saving banks being the largest shareholders (more than 9.5 percent of firms' shares for each of the three groups), followed by mutual and pension funds (7.43 percent) (FEF, 2004). Individuals and families, the second largest shareholders of Ibex-35 companies, do not participate in privatised firms[5]. State participation in Ibex-35 privatised firms averages 4.67 percent. This relatively high percentage is mainly a spin-off of the 28.5 percent share that the State still owned in Red Eléctrica Española (REE), the company that handles Spain's

[4] This underpricing is for the period 1985-1997.
[5] The data refers to June 2003 and includes the privatised companies that merged with other companies.

electricity grid[6]. The ownership structure of these large privatised companies reflects both the governments' will to create stable groups of shareholders so as to keep control in Spanish hands. The large Spanish banks and savings banks participated actively in this process, expanding the interlocking relationship between financial and industrial groups in Spain. All Ibex-35 privatised companies have a large shareholder holding more than five percent of the shares. However, a true reflection of how these companies were privatised can be seen in the fact that banks and savings banks are large shareholders in 65 percent of the firms, mutual and pension funds, have holdings in almost 75 percent of the firms, while non-financial enterprises are present in only 36 percent of the firms. As Arocena (2003) argues, this pattern of ownership has generated a web of common interests that may distort entry and competition.

3. Empirical evidence regarding the Spanish privatisation process

Empirical evidence as regards the implications on firms' efficiency and profitability of the Spanish privatisation process is scarce and inconclusive. Sanchís (1996) analysed a sample of 24 enterprises that were privatised between 1978 and 1990, concluding that not all privatisation processes spawned increases in efficiency. Whereas privatised firms' productivity does not seem to grow, the majority of the firms exhibited increases in efficiency when they were restructured. He concludes that changes in firms' organizational structure and management may be sufficient to turn around the performance of public enterprises. Thus, privatisation may not be needed to achieve an increase in efficiency. Melle (1999) studies a sample of State-Owned Companies that were totally and partially sold by public offerings during the decade of the 1990s. Admittedly her sample of just ten firms is small, but her results do not point to any increase in firms' performance after privatisation, except in the ratio sales to employee. Privatised firms seem to improve their operational efficiency, but not their capital investment.

Nor do the results of the study by Villalonga (2000), using a sample of 24 firms that were privatised between 1985 and 1993, support the enhanced efficiency of privatised firms. However, she explains that organizational and political aspects, i.e., a firm's size, the type of buyer or the economic cycle, may help explain the relationship between privatisation and efficiency. Hernandez de Cos (2004) with a sample of 33 Spanish

[6] In December 2005 the stake of the State in the capital of REE is 20 per cent.

manufacturing firms for the period 1983-1996 show a negative effect of the public ownership on the efficiency, and a positive effect of the degree of competition on firm's performance (relative productivity and profitability). So, his results indicate that although the degree of competition is important for efficiency, it can not be ignored the role played by the public ownership. Romero (2005) for a sample of 40 firms that were privatised between 1985 and 2001 is not able to confirm an improvement in firm's efficiency. She only finds a significant increase in the ratio sales to employee. However, her results denote an improvement in the entrepreneurship activity after privatisation, especially when the change in the ownership is linked to a high level of competence in the sector. Using a small sample of 8 firms privatised between 1996 and 2003 Herrero and Guerrero (2005), once taking into account the industry effects and the time of the privatisation, find an increase in firms' economic efficiency. However, the size of their sample and its composition rest robustness to the results obtained by these authors.

Four case studies relating to the privatisation process in Spain are also worth mentioning. Arcas and Ruiz (1999) report a post-privatisation increase in the operating efficiency of Repsol, although they do not compare this company with its competitors. Similar results are shown by Hernández and López de Castro (2000) for Telefónica, Repsol, Endesa and Gas Natural. These authors also fail to compare the results of these privatised firms with those of their competitors. Bosch and Vergés (2002) analyse the privatisation process of the iron and steel company Aceralia (now part of Arcelor), concluding that significant changes in the firm's profitability and efficiency occurred during its restructuring process, before privatisation. Finally, Arocena (2003) studied the economic efficiency of the electrical company Endesa after its privatisation, comparing it with its competitors. He reports an inferior performance of the privatised firm.

To sum up, longitudinal studies do not uncover significant evidence supporting an increase in the performance of Spanish privatised firms (except in the case of Hernandez de Cos, 2004; Herrero and Guerrero, 2005); nor do results of case studies point to the enhanced efficiency of privatised firms compared to their competitors. In this respect, the empirical evidence for the Spanish case coincides with the empirical evidence of Domberger (1993) and Martin and Parker (1995) for the UK, and contrasts with the empirical evidence of Megginson *et al*. (1994) for developed countries, with

the one reported by Boubkari and Cosset (1998) for developing countries, by La Porta and Lopez de Silanes (1999) for Mexico and by Sun and Tong (2003) for China. The fact that a significant number of firms that were privatised were restructured prior to their privatisation, that in other cases it was the "Crown Jewels" that were up for sale, and that State-Owned industrial privatisations occurred during cycles of economic growth may each go some way towards explaining these results.

4. Theoretical arguments and hypotheses

A firms' ownership structure influences its corporate decisions. The economic theory of privatisation favours the advantages of private ownership of the means of production, pointing to the inefficiency of government ownership and to the problems faced by State-Owned Enterprises when defining their goals. Actually, governments may have many objectives for the SOEs other than profits or shareholders' wealth maximisation (Megginson and Netter, 2001). For example they may pursue political goals that are inconsistent with efficiency and even with maximising social welfare. Besides, even if the government pursues profit maximising as the SOEs goal, public firms will tend to be more risk adverse and less free to adopt decisions because managers will need to justify their strategic decisions to the employees or the State (Frydman *et al*., 2000). Moreover, agency problems may be more severe in public firms due to the double level of agency relations that they present (citizens-government and government-management), the impossibility of citizens to sell the firms' shares, the political objectives of the government, or the firms' reliance on the government for funding and their unlikelihood to face bankruptcy. All these factors may derive in firms' diversification and growth and in a reduction of the firms' profitability and efficiency.

Considering these characteristics of public firms, and given the discipline provided by markets (capital markets, corporate control market and product and service markets), the change from public to private ownership in privatisation processes should derive in increases in profitability and efficiency (Yarrow, 1986; Boycko *et al*., 1993). The expected increase in operating performance of divested firms is supported by different empirical studies that report an increase in the ratios of return on assets and return over sales for privatised firms (Megginson *et al*., 1994; Boubakri and Cosset, 1998; Sun y

Tong, 2002; Antoncic and Hisrich, 2003)[7]. Thus, we propose as first testable hypothesis:

H1: Firms' operating profitability increases after privatisation

Market pressures and the reduction of subsidies by the State will drive privatised firms to employ their human, financial and technological resources more efficiently (Suneti *et al*., 1992; Boycko *et al*., 1993). This expected increase in the firm's efficiency is supported by the different empirical studies (De Alessi, 1980; Vining and Boardman, 1992; D´Souza and Megginson, 1999; Sun and Tong, 2003; D´Souza *et al*., 2005) and is one of the motives more frequently named by governments to justify privatisation processes. Consequently we state the following hypothesis:

H2: Firms' efficiency increases after privatisation

Firms' output may also increase following privatisation. Higher incentives, better financial opportunities and the increase in competence after privatisation could derive in an increase in output as reported by La Porta and Lopez de Silanes (1999) for Mexico, by Boubakri and Cosset (1998) and Boubakri *et al*. (2005) for developing countries' privatisation processes, or by Sun y Tong (2003) and Wei *et al*. (2003) for China. Nevertheless, privatisation may also lead to an output reduction as the government will not incentive managers (via subsidies) anymore to attain inefficient levels of output (Boycko *et al*., 1993). Considering the first argument, we test the following hypothesis:

H3: Firms' output increases after privatisation

The empirical evidence regarding the possible influence of privatisation on firms' investment is not conclusive. While Megginson *et al*. (1994), Boubakri and Cosset (1998) and D´Souza *et al.* (2005) report a post-privatisation increase in investment, D´Souza and Megginson (1999) find no significant changes and Parker (1994) reports an increase in R&D expenses of privatised firms. Theoretically, post-privatisation increases in firms' efficiency should drive firms to an increase in investment expenses, given their access to capital markets funding. Moreover, different studies suggest that

[7] Nevertheless, it is not possible to assure that privatisation is the only cause of the observed increase in performance (Bishop and Kay, 1992; Green and Volggelsang, 1994). Changes in the competence and in the structural environment of the firm may also influence post-privatisation firm performance (Newbery, 1997). Besides, the performance improvements may have taken place before privatisation (Dewenter and Malatesta, 2001).

privatisations may impulse entrepreneurship attitudes in divested firms (Zahra and Hansen, 2000). For instance, Antoncic y Hisrich (2003) report a negative relation between firms' innovation and the stake retained by the State in the firms' capital after privatisation. Thus, we propose:

H4: Firms' investment expenses increase after privatisation

Privatisation may also influence firms' leverage. Former SOEs will not be able to use anymore the State guarantee in debt contracts, to rely on the government for funding, and will have to face the risk of bankruptcy as supported by the studies of Megginson *et al.* (1994), Boubakri and Cosset (1998), Bortolotti *et al.* (2001), or Annuati-Nero *et al*. (2003). Consequently, post-privatisation a reduction in firms' leverage should be expected:

H5: Firms' leverage decreases after privatisation

Privatisation and liberalisation processes have important consequences on divested firms' human resources. SOEs usually are dominated by syndicates or respond to the interest of the State to protect economically and socially distressed regions or areas[8]. Consequently, post-privatisation, divested firms will tend to reduce their work force. Empirical studies analysing this issue are not conclusive and vary depending on the country of the study. For example, for the Chilean case, Meller (1993) reports an increase in employment after privatisation, and so do Boubakri and Cosset (1998) for a sample of firms belonging to developing countries, or Sun y Tong (2003) for China. On the contrary, the study of Sakita (1989) about the privatisation of the Japanese train company suggests a significant decrease in its work force after privatisation. Similar results are shown by Ramamurti (1997) or Harper (2002). Nevertheless, according to the theoretical arguments we have referred to, we propose:

H6: Firms' employment decreases after privatisation

5. Sample, methodology and variables

5.1. Sample selection

[8] Another cause of the high work force rates of public firms may be the opportunistic behaviour of the management team that would benefit from "building empires" (Jensen, 1986).

The initial database used for the analysis comprises the sample of companies privatised in Spain during the period 1985-2000, 117 firms. We got economical and financial information about the privatised firms for a period of up to eleven years encompassing five years before through five years after the last stage or block of privatisation.

To the initial database the following filters were applied:

a) Firms for which we were not able to obtain data for a period of up to seven years encompassing three years before through three years after the last stage of the privatisation process were excluded: those were firms for which there was a lack of accounting data, firms that began their activity in the two years prior to the privatisation and firms that closed their businesses around the time of the privatisation.

b) Financial firms were excluded due to their particular characteristics.

c) Firms for which we were not able to estimate their mean industry ratio were also excluded from the sample.

Once these filters were applied the final sample comes to 58 (see Table 2).

[TABLE 2]

Table 3 shows the industry and annual distribution of the sample firms, as well as privatisation method employed. The firms belong mainly to the transport equipment industry (15.67% -SIC code 37), to the steel and iron industry and to the water, electricity and gas industry (11.11% -SIC Code 33 and 49, respectively)-Panel A, Table 3-. The privatisation processes took place mainly in year 1997 (18.05%), in year 1999 (12.5%) and in year 1989 (9.72%) (Panel B, Table 3), being direct sales the main method of privatisation employed (75%). For the final sample, the privatisation processes under the socialist government (PSOE) accounted to 42 (33 through direct sales and 9 through public offerings), whereas 30 firms were privatised under the conservative government (PP) (21 through direct sales and 9 through public offerings).

[TABLE 3]

The information about the privatised firms was obtained from different data sources: the State Corporation of Industrial Shares (Sociedad Estatal de Participaciones Industriales-SEPI), samples used by previous studies (Gamir, 1999; Vergés, 1999; Villalonga, 2000b) and the reports of Consultative Privatisation Committee (Consejo Consultivo de Privatizaciones -CCP-). The accounting information for the pre-privatisation years was obtained from the annual reports of the formerly SOEs storaged in the library of the SEPI and different ministries (Economy and Industry). For the post-privatisation years, the accounting information was obtained from the files of the Spanish Supervisory Agency (CNMV) and the Madrid Stock Exchange, the firms' offerings prospectus, from the databases SABI (Sistema de Análisis de Balances Ibéricos) and Informasa, and from the companies financial reports. This information has been completed with that provided by the Dicodi and the Dun's & Bradstreet directories. In addition, the aggregate data for the industries comes from the information provided by the Spanish Central Bank (Central de Balances del Banco de España).

5.2. Methodology and variables

Following the proposed hypotheses, our paper aims to study whether the privatisation of SOEs lead to an increase in the firms' profitability, efficiency, output and investment and to a decrease in the firms' employment and leverage. For that purpose, similarly to Megginson *et al.* (1994), Boubakri and Cosset (1998) and D'Souza and Megginson (1999), we use a matched pairs (pre vs. post-privatisation) methodology. Empirical proxies for each variable and each company are computed both for a period of up to eleven years encompassing five years before through five years after the last stage or block of privatisation. Thus, for each company, we estimate its performance, investment, employment and leverage, from the five years of public ownership through the five years as a privatised entity (both for the first stage of the privatisation -1S- and the last stage of the privatisation – 2S). These measures are estimated raw for each firm and after adjusting for its industry. The mean and median of each variable for each firm over the pre- and post-privatisation windows (pre-privatisation: years -5 to -1 and years -3 to -1 and post-privatisation years: +1 to +5 and years +1 to +3) are then calculated. For all firms, the year of privatisation is named year 0. It includes both the public and private ownership phases of the enterprise and is therefore excluded from the calculations. Having computed pre- and post- privatisation mean and median values, we

use the t de student test and the Wilcoxon signed- rank to test for significant changes in the variables.

Table 4 shows the variables used in the study and the predicted relationships. We measure profitability using three ratios: return on assets (ROA), return on equity (ROE) and return on sales (ROS). We test for changes in operating efficiency by analysing four ratios: real sales-to-employees (SALES/EMP), net profit-to-employees (NP/EMP), operating profit-to-employees (OP/EMP) and added value-to-employees (AV/EMP). Besides, we use real sales -in million euros- (sales deflated by the index of retail prices, SALES) as a proxy for output[9]. Investment is defined as the increase of the firm's fixed assets each year (INV). Finally, as proxies of the firms' capital structure we use the ratio of total leverage (LEV) and the ratio of long-term leverage (LLEV) and to measure the changes in employment we use the number of the firms' employees at the end of each year (EMP).

[TABLE 4]

6. Results

6.1. Privatisation and firms' performance

Tables 5 shows the means and medians raw differences in the performance of the firms after their privatisation over the window (-3+3) [10]. We find a significant increase in the mean and median values for all the proxies of efficiency and for the ratio of profitability, return on assets (ROA), and a significant decrease for the ratio of total leverage (LEV). These results seem apparently to support to some extent hypotheses 1, 2 and 5 that stated an increase in firms' profitability and efficiency and a decrease in firms' leverage after privatisation. Nevertheless, once the industry effects are considered the results vary. Although post-privatisation the majority of the median profitability and efficiency ratios[11] seem to be larger (except the ratios sales-to-employees and operating profit-to-employees), the observed differences are not statistically significant. Neither are statistically significant the variations in the proxies of output, investment, leverage and employment (Table 6). Over window (-3+3), we just observe a statistically

[9] Sales have been deflated to year 1980.
[10] We eliminated extreme values of the ratios to avoid possible biased.
[11] We consider median values because we rejected the normality hypothesis though Kolmogorv -Smirnov test.

significant increase for the proxy of the firms' profitability ROS (return on sales) and, just when considering the last stage of the privatisation process, and a significant decrease for the proxies of firms' efficiency, sales-to-employee and net profit-to-employee, for the second and first stage of the privatisation processes, respectively.

[TABLE 5]

[TABLE 6]

One possible explanation for the observed results could be the temporal horizon of the analyses. Firms could need more than three years to be restructured and to improve their performance after privatisation, to be more competitive than their industry counterparts. If this is the case, the consequences of the organizational and structural changes of divested firms' should be studied over larger time horizons. Actually, as shown in Table 7, significant improvements in the firms' raw profitability and efficiency ratios seem to take place over window (-5+5). But even when the industry effects are considered the results denote significant improvements in the ratios return on assets, return on sales and the ratios used as proxies of firms' efficiency, net profit-to-employee and operating profit-to-employee, as well as in the firms' level of investment (Table 8).

[TABLE 7]

[TABLE 8]

Similarly to the results reported by Megginson *et al.* (1994), Boubakri and Cosset (1998) and D´Souza and Megginson (1999), these results seem to support the arguments behind hypotheses 1 and 2. The change from public to private ownership, over a long time horizon, seems to derive in increases, not only in the firms' profitability and efficiency per se, but also in significant increases when compared to their competitors in divested firms' profitability and efficiency. In this sense, although over a relatively short time, an horizon (-3+3), our results seem to differ from those reported by Boubakri and Cosset (1998) for a sample of firms' privatised in developing countries, by D´Souza and Megginson (1999) for a sample of firms' privatised in industrialized countries, or by Lopez de Silanes (1999) for Mexico, they do tend to confirm the conclusions reported by prior studies about the Spanish privatisation process that did not consider the possible influence of industry effects. For example, Sanchís (1996) report that not all the privatisation processes led to an improvement in the productivity,

Melle (1999) and Romero (2005) only find an increase in the ratio sales-to-employee, and Villalonga (2000) points to the necessity of considering factors like firm's size, the economic cycle and the type of the buyer when studying Spanish privatisations. However, over a larger time horizon (-5+5) privatisations seem to derive in improvements in the performance of the divested firms even when the industry effects are considered.

6.2. Factors that may influence the success of privatisation processes

Privatisation per se may not explain solely the change in divested firms' performance (Bishop and Kay, 1992; Domberger, 1993; Green and Vogelsang, 1994). In this sense, previous studies argue that other factors may influence the success of the privatisation processes. Among these factors, are the competitive, political and economic environment (Harper, 2002), the stake retained in the firms' capital by the State after privatisation (Megginson *et al.*, 1994; Boubakri and Cosset, 1998; Wei *et al*., 2003), the identity of the new owner (Sader, 1993; Frydman *et al*., 1999; Boubakri *et al*., 2005) or the restructuring of privatised firms prior to their privatisation (Dewenter and Malatesta, 2001).

Next, we analyse whether the moment of privatisation, the industry's competitiveness and the firms' prior restructuring have influenced the results of the Spanish privatisation process. The economic cycle or the moment of the privatisation could influence the success of privatisations. Restructurings are more plausible during expansive cycles and consequently the impact of privatisations should be larger for firms privatised during expansive economic cycles, that is, post-privatisation, firms' performance may be influenced by the country' macroeconomic evolution (Villalonga, 2000; Alexandre and Charreaux, 2004). In order to test this prediction we analyse differences in divested firms' performance ratios over the period (-5+5) dividing the sample in two different sub-samples: the one composed of the firms that were privatised during periods of economic growth and the one formed by firms that were privatised during recession periods. For that purpose we define a period of economic growth as one during which one year's country's GDP is larger than the country's GDP over the year before. Although not shown, we find significant increases in the raw profitability ratios (ROA and ROS), and in the raw efficiency ratios (sales-to-employee, net profit-to-employee and operating profit-to-employee), as well as in the level of investment for firms that

were privatised during expansive economic cycles. Contrariwise, firms that were privatised during recessive cycles only show a significant increase in the efficiency ratio net profit-to-employee, and a significant decrease in the level of employment. Once the industry effects are considered, significant (at a 1 per cent level) improvements in the majority of the ratios of profitability and in the ratio operating profit-to-employee (at a 5 per cent level) are observed for firms that were privatised during expansive economic cycles, but no improvements are observed for firms that were divested during recessive cycles. Thus, as shown in Graph 1 the economic cycle seems to influence the raw and industry adjusted performance of divested firms, showing firms that were privatised during expansive cycles more possibilities to improve per se and in comparison to their competitors their profitability and efficiency. These results are in line to those reported previously by Villalonga (2000) for Spain and by Alexandre and Charreaux (2004) for France and suggest that the observed improvements in firms' profitability and efficiency are partially due to the country's economic situation. Besides, we must say that the majority of the privatisation by means of public offerings corresponded to the so called "Crown Jewels" and took place during periods of economic growth. This may also help explain the observed results.

[GRAPH 1]

Another factor that influences the firms' economic environment is the existence of competitive markets. In the lack of a competitive environment, a firms' efficiency will depend mostly on regulation (Yarrow, 1986; Vickers and Yarrow, 1988). Thus, competitiveness could also be a main determinant of the improvement on divested firms' performance (Newbery and Pollitt, 1997; Ramamurti, 1997; Djankov and Murell, 2002; Chirwat, 2004). To test this prediction over the period we divided the sample in two groups: that formed by firms belonging to regulated industries (utilities) and that formed by divested firms operating in competitive markets. We find that firms belonging to competitive industries show a significant increase at a 1 per cent level in the raw ratios ROA and ROS and a significant increase in all the ratios of firms' efficiency. Regulated firms also a show significant increase in the raw ratio ROA, although only at a 5 per cent level, and not in all the ratios used as proxies of firms' efficiency. These results suggest a larger improvement in profitability and efficiency for non regulated firms. When the industry effects are taken into account, once again,

significant improvements are found for the proxies of profitability and efficiency for non-regulated firms, while regulated firms only show a significant improvement, and at a 5 per cent level, in the ratios ROA and ROS. Moreover, non regulated firms also show significant increases in the level of investment and significant reductions in the ratio of long term leverage.

These results seem to suggest that market competitiveness not only lead to improvements in firms' profitability and efficiency per se, but also to improvements in the performance of privatised firms when compared to their industry peers. Furthermore, under the market pressure divested non-regulated firms seem to reduce their level of long term leverage and to increase their level of investment in comparison to their competitors. Privatisation seems to incentive firms to improve their performance given that they must compete with the rest of the private companies in order to survive without the financial support of the State that guaranteed their existence even in case of bad performance. Consequently, as suggested by previous studies (Bishop and Kay, 1992; Megginson *et al*., 1994; Martin and Parker, 1995; Bortolotti *et al.*, 2001; Saal and Parker, 2003) privatisation processes in order to be successful should be accompanied with structural reforms and liberalisation processes.

Finally, we consider whether firms' post-privatisation performance may be explained, totally, or at least, partially, by their restructuring prior to their sale (Dewenter and Malatesta, 2001; Fraquelli, 2001; Alexandre and Charreaux, 2004). Governments may restructure public firms prior to their privatisation in order to obtain higher incomes, but also managers would be willing to restructure public firms before their privatisation as the risk to their job will be higher when the firms are under the discipline of the market. When we divide the sample in two sub-samples: the one formed by firms that improve their performance after privatisation and one formed by firms that do not, we find that firms that do not improve their performance after privatisation are those that showed, prior to privatisation, larger raw profitability ratios (ROE), larger levels of sales and investment and lower levels of leverage[12]. When industry effects are considered the results also support this behaviour. Divested firms that do not show improvements, post-privatisation, in their performance are those showing pre-privatisation larger levels of profitability (ROE) and lower levels of leverage.

[12] We only consider the first stage of privatisation because in our analysis the pre-privatisation period is the same in both stages (the first and the last).

Summing up, our results seem to suggest an improvement in divested firms' performance over a long time horizon and that different factors such as the economic cycle, competitiveness, or prior restructurings can help explain the observed changes in the performance of privatised firms.

7. Conclusions

Privatisation processes have been an important phenomenon in many countries, particularly during the last two decades. They are seen as a mean to modernise a country's economy and to reduce political and government interference in economic activity. Besides, in a significant part of these countries, e.g., Spain and other EU, countries, privatisation processes have significantly contributed to reduce the countries' public deficit. The Spanish privatisation process has been preceded and accompanied by a restructuring of the public sector, and a deregulation and liberalisation in key product markets (petrochemicals, telecommunications, energy, gas and transport). This large-scale privatisation process has triggered a sharp decline in the participation of the public sector in the Spanish GDP (0.1 in 2001) and in the Spanish Stock Market.

Although the empirical evidence supports the superior performance of private firms, and some studies suggest a post-privatisation improvement in firms' performance, for Spain, the studies of Cuervo (1989), Azofra *et a*l. (1991) and Argimon *et al*. (1999) support the superior performance of private firms, but prior studies regarding the possible improvements in performance of Spanish privatised firms are not conclusive (Melle, 1999; Villalonga, 2000; Romero, 2005). What really seems to be true is that the revenues from privatisation helped Spain to comply with the Maastricht Treaty. Between 1996 and 1998, the Spanish State raised 21,991.80 million euros, of which up to 75 percent was used to reduce the country's fiscal deficit (Vergés, 1998). The evidence also suggests that prices in Spain have dropped due to liberalisation (IMF, 2004) and that, as result of this intense privatisation and liberalisation processes, the country has experienced significant growth. In 2003 Spain boasted the second highest growth in GDP among EU countries, 2.9 percent (OCDE, 2003b). Besides, as privatisation by public offerings of large State companies proceeded, so also did the participation of individuals and families increase significantly during the 1990s, reaching 28.31 percent ownership of the Spanish companies quoted on the stock market in 2002. Privatisation does indeed seem to have spawned some degree of "popular

capitalism" in Spain. Nevertheless, groups of stable shareholders have also been created as large shareholders of privatised firms.

Using a broad database we analyse whether the Spanish privatisation process has led to improvements in firms' profitability and efficiency, to larger firms' investment rates and to a decrease in firms' leverage. We find no evidence of a significant post-privatisation improvement in firms' profitability and efficiency once the industry effects are considered over a medium term horizon, up to three years after privatisation. But we do find evidence that suggests significant improvements in divested firms' profitability and efficiency over a long term horizon, up to five years after privatisation. These results suggest that divested firms may need long time periods to overcome the performance of their industry peers. Nevertheless, we can not confirm an increase in investment, a decrease in leverage or employment after correcting for industry effects. We also find that factors such as the economic environment (the economic cycle and the competitiveness of the industry), and the firms' prior restructurings may help explain the results of privatisation processes.

References

Alexandre, H. and G. Charreaux, 2004, Efficiency of French privatisations: a dynamic vision, Journal of Corporate Finance, 10, 467-494.

Álvarez Otero, S, 2000, Las privatizaciones españolas mediante oferta pública inicial, Actualidad Financiera, Abril, 17-31.

Annuati-Nero, F.; Barossi-Filho, A.; Gledson de Carvalho and R. Macedo, 2003, Benefits and costs of privatization: evidence from Brasil, Research Network Working paper, no. 145, Banco Inter-Americano de Desarrollo, red de centro de investigación.

Antoncic, B. and D. Hisrich, 2003), Privatization, corporate entrepreneurship and performance: testing normative model, Journal of Developmental Entrepreneurship, 8, no. 3, 197-218.

Arcas, M.J. and F.J. Ruiz, 1999, Los efectos de la privatización de empresas sobre su comportamiento económico y financiero: el caso de Repsol, Hacienda Pública Española, 38, 21-53.

Argimon, I.; Artola, C. and J. González-Páramo, 1999), Empresa pública y privada: titularidad y eficiencia relativa, Moneda y Crédito, 209, 45-93.

Arocena, P, 2003, The privatisation programme of the public enterprise sector in Spain, Paper presented for discussion for the CESifo/Warwuck University joint conference "Privatisation Experiences in the UE", Germany.

Azofra, V.; Fernández, A.I.; Hernangómez, J. and A. De Miguel, 1991, Análisis sectorial del comportamiento financiero de las empresas públicas y privadas en España, Anales de Estudios Económicos y Empresariales, 6, Valladolid.

Benfratello, L, 2001, Determinanti ed effetti delle fusioni ed acquisizioni: un´analisi sulla base delle notifiche alle autoritá antitrust, L´Indsutria, 3.

Bishop, M. and J. Kay, 1992, El impacto de la privatización en la eficiencia del sector público en RU, Información Comercial Española, 707, 22-34.

Bortolotti, B.; D´Souza, J.; Fantini, M. and W. Megginson, 2001, Sources of performance improvement in privatised firms: a clinical study of the global telecommunications industry, Foundazione Eni Enrico Mattei. Working paper, no. 26.

Bosch, T. and J. Vergés, 2002, Privatización y eficiencia productiva: análisis del caso de Ensidesa- CSI-Aceralia, XI Congreso Nacional de la Asociación Europea de Economía y Dirección de Empresa (AEDEM), 269-281, Alicante.

Boubakri, N. and J. Cosset, 1998, The financial and operating performance of newly privatized firms: evidence from developing countries, Journal of Finance, 53, vol. 3, 1081-1110.

Boubakri, N., Cosset, J. and O. Guedhami, 2005, Liberalization, corporate governance and the performance of privatized firms in developing countries, Journal of Corporate Finance, 11, vol. 5, 767-790.

Boycko, M.; Sheilfer, A. and R. Visnhy, 1993, Privatisating Russia". Brookings papers on economic activity, 2, 81-139.

CNE, 2001, Información básica de los sectores de la energía. Madrid: Comisión Nacional de Energía.

Chirwat, E, 2004, Industry and firm effects of privatisation in Malawian oligopolistic manufacturing, The Journal of Industrial Economics, vol. 52, 277-290.

Cuervo, A. and J. Maroto, 1983, Análisis económico-financiero comparativo entre grandes empresas industriales públicas y privadas. Años 1979-80 y 1980-81". *Economía Industrial*, 231.

Cuervo, A, 1989, Situación económica y financiera de la empresa, evolución y perspectiva" in JL García Delgado, eds., España, Economía (Espasa-Calpe, Madrid) 601-635.

Cuervo, A, 1997, La privatización de la empresa pública (Ediciones Encuentro, Madrid).

De Alessi, L, 1980, The economics of property rights: a review of the evidence, Research in Law and Economics, 2, 1-47.

Dewenter, K. and P. Malatesta, 2001, State-Owned and privately-owned firms: an empirical analysis of profitability, leverage and labour intensity, American Economic Review, 91, 320-334.

Djankov, S. and P. Murell, 2002, Enterprise restructuring in transition: a quantitative survey, Journal of Economic Literature, 40, no. 3, 739-792.

Domberger, S, 1993, Privatization: what does the British experience reveal?, Economic Papers, 12, vol. 2, 58-68.

D´Souza, J. and W. Megginson, 1999, The financial and operating performance of privatized firms during the 1990s, The Journal of Finance, 54, vol. 4, 1397-1437.

D´Souza, J.; Megginson, W. and R. Nash, 2005, Effect of institutional and firm specific characteristic on post-privatization performance: evidence from developed countries, Journal of Corporate Finance, 11, vol. 5, 747-766.

Ehrlich, I.; Gallais-Hamonno, G.; Zhiqiang L. and R. Lutter, 1994, Productivity Growth and Firm Ownership: an empirical investigation, Journal of Political Economics, 102, 1006-1038.

Fraquelli, G, 2001, L´attesa della privatizzazione: una minaccia credibile per ill manager?, Sinergie, 55, May-August, 211-233.

Frydman, R; Pistor, K. and A. Rapaczynski, 1999, Investing in insider-dominated firms: as study of Russian Voucher Privatization Funds in Frydman, Gray y Rapaczynski, eds., Corporate Governance in Central Europe and Russia (Central European University Press, Budapest).

Frydman, R.; Cheryl, W.; Hessel, M. and A. Rapaczynski, 2000, The limits of discipline: ownership and hard budget constrains in the transition economies, C.V. Starr Centre for Applied Economics working paper, NYU, New York.

Fundación de Estudios Financieros (FEF), 2004, Observatorio de Gobierno Corporativo de las grandes sociedades cotizadas en el mercado de valores español (IBEX 35), 2003. Papeles de la fundación, no. 7.

Gamir, L, 1999, Privatización, eficiencia y transparencia, Información Comercial Española, 772, 27-44.

Gamir, L, 2003, El proceso de transformación de la empresa pública, Información Comercial Española, 811, 221-234.

González-Páramo, J.M, 1995, Privatización y eficiencia. ¿Es irrelevante la titularidad?, Economistas, 63, 32-43.

Green, R. and I. Vogelsang, 1994, British airways: a turnaround anticipating privatization in M. Bishop, J. Kay, and C. Mayer, eds., Privatization and economic performance (Oxford University Press, Oxford) 89-111

Harper, J, 2002, The performance of privatized firms in the Czech Republic, Journal of Banking and Finance, 26, 621-649.

Hernández-Castilla, N. and L. López de Castro, 2000, Privatizaciones, Liberalización y Bienestar. (Comares, Granada).

Hernández de Cos, P.; Argimon, I. and J. González-Páramo, 2004, Public ownership and business performance in the Spanish manufacturing sector, 1983-1996, Public Finance Review, 32, no. 2, 148-182.

Herrero, I. and J. Guerrero, 2005, ¿Mejora la eficiencia individual de las empresas tras su privatización?, Artículo presentado en el VX Congreso Nacional de la Asociación Científica de Economía y Dirección de Empresa, Tenerife.

International Monetary Fund Country report (2004). No. 04/89. March.

Jensen, M, 1986, Agency costs of free cash flow, corporate finance and takeover, American Economic Review, 76, 323-329.

La Porta, R. and S. López de Silanes, 1999, The benefits of privatisation: evidence from Mexico, Quarterly Journal of Economics, November, 1193-1242.

Martin, S. and D. Parker, 1997, The impact of privatization. Ownership and corporate performance in the UK (Routledge, Londres).

Megginson, W; Nash, R. and M. Van Randerborgh, 1994, The financial and operating performance of newly privatized firms: an international analysis, Journal of Finance, 49, 403-452.

Megginson, W. and J. Netter, 2001, From the State to market: a survey of empirical studies on privatization, Journal of Economic Literature, 39, 321-389.

Melle, M, 1999, Algunos resultados efectivos de las privatizaciones en España: una primera aproximación, Economía Industrial, 330, 141-158.

Meller, P, 1993, A review of Chilean privatization experience, Quarterly Review of Economics & Finance, 33, 95-112.

Newbery, D, 1997, Privatization and liberalisation of network utilities, European Economic Review, 41, 357-383.

Newberry, D. an M. Pollit, 1997, The restructuring and privatization of Britain's CEGB-Was it worth it?, Journal of Industrial Economics, 45, no.3, 269-303.

Ng, C. and P. Seabright, 2001, Competition, privatisation and productive efficiency: evidence from the airlines industry, Economic Journal, 591-629.

OCDE, 2003, Privatising state-owned enterprises. An overview of policies and practices in OECD countries, OCDE online bookshop, code 262003011 P1.

OCDE, (2003b), Economic Outlook, 74, November, p. 50, and earlier issues.

Parker, D, 1994, A decade of privatisation: the effect of ownership change and competition on British Telecom, British Review of Economics Issues, vol. 16 (October), 87-113.

Pestieau, P. and H. Tulkens, 1993, Assessing and explaining the performance of public enterprises, Finanzarchiv, 50. 293-323.

Ramamurti, R, 1997, Testing the limits of privatization: Argentine Railroads, World Developmet, 25. 1973-1993.

Romero, A.M, 2005, Cambios en la iniciativa emprendedora de las empresas privatizadas en España, Tesis Doctoral.

Sader, F, 1993, Privatization and foreign investment in developing world, World Bank Research, Working paper 1202.

Sakita, M, 1989, Restructuring of the Japanese national railways: Review and analysis, Transportation Quarterly, 43, 29- 45.

Sanchís, J, 1996, Privatización y eficiencia en el sector público español, Revista de Economía Aplicada, 10, vol. 4, 65-92.

Sheshinski, E. and L. Lopez Calva, 1999, Privatisation and its benefits: theory and evidence, HIID Development discussion paper 698, Harvard University, Cambridge, MA.

Sun, Q. and W. Tong, 2002, Malaysia privatization: a comprehensive study, Financial Management, winter, 79-105

Sun, Q. and W. Tong, 2003, China share issue privatization: the extent of its success, Journal of Financial Economics, 70, 183-222.

Suneti, K.; Nelly, J. and M. Shirley, 1992, Privatization: the lessons of experience, The World Bank, Washington, D. C.

Vergés, J, 1998, Efectos de las privatizaciones españolas sobre los presupuestos generales del Estado, Hacienda Pública Española, 147, 15-231.

Vergés, J, 1999, Balance de las políticas de privatización de empresas públicas en España (1985-1999), Economía Industrial, 330, 121-139.

Vickers, J. and G. Yarrow, 1988, Privatization. An economic analysis (The MIT Press, Cambridge, Mass).

Villalonga, B, 2000, Privatization and efficiency: differentiating ownership effects from political, organizational and dynamics effects, Journal of Economic Behaviour & Organization, 42, 43-74.

Villalonga, B, 2000b, Privatización y eficiencia en España: un análisis empírico y un modelo teórico a nivel de empresa, Tesis Doctoral.

Vining, A. and A. Boardam, 1992, Ownership versus competition: efficiency in public enterprise, Public Choice, 73, 205-239.

Wei, Z.; Varela, O.; D´Souza, J. and H. Kabir, 2003, The financial and operating performance of China´s newly privatized firms, *Financial Management*, summer, 107-126.

Yarrow, G, 1986, Privatization in theory and practice". Economic Policy, 2, 324-377.

Zahra, S. and C. Hansen, 2000, Privatization, entrepreneurship and global competitiveness in the 21 st century, Competitiveness Review, 10, 83-13

FIGURE 1: Spanish privatisation path

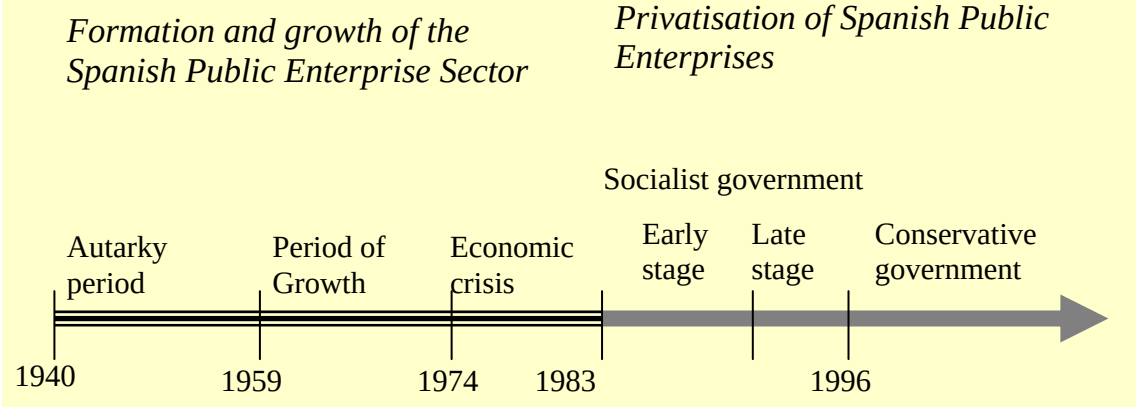

TABLE 1: Spanish privatisation process (1985-2003)

	Government			Total
	PSOE	**PP**	**PSOE/PP**	
Privatisation processes	103 (60.23%)	68 (39.76%)		171
Partial privatisation processes	12 (48% of p.p.)	5 (20% of p.p)	8 (32% of p.p.)	25 (15% of t.p.)
Percentage of shares retained by the State after the first stage in partial privatisations	36.84 %	49.47%		39.82 %
Methods of privatisation:				
Direct Sales	88 (85%)	47 (69%)		135 (79%)
Public Offerings	15 (1) (15%)	16 (23%)		31 (18%)
Auctioning		5 (8%)		5 (3%)

(1) Including an issuance of convertible bonds.

p.p. partial privatisations processes; t.p. total privatisations processes

Source: Own elaboration

TABLE 2: Sample

Privatisation year [1]	Privatised firm	Activity	Method of privatisation
1986	Amper	Electronics	PO
1986	Entursa	Tourism	Direct Sale
1986	Frigsa	Food	Direct Sale
1986	Gesa	Energy	PO
1986	Remetal [2]	Aluminium	Direct Sale
1986/90	Seat	Car industry	Direct Sale
1987	Acesa	Highways	PO
1987	Alumalsa	Aluminium	Direct Sale
1987	Gas Madrid	Energy	PO
1987	Litofan	Aluminium	Direct Sale
1987	Purolator	Car industry	Direct Sale
1988/95	Ence	Paper	PO
1988/98	Endesa	Energy	PO
1989	Astican	Shipbuilding	Direct Sale
1989/92	Ateinsa	Capital goods	Direct Sale
1989	Enfersa [3]	Fertilizers	Direct Sale
1989/92	MTM	Capital goods	Direct Sale
1989	Oesa	Food	Direct Sale
1989	Pesa	Electronics	Direct Sale
1989/97	Repsol	Energy	PO
1990	Hytasa	Textiles	Direct Sale
1990	Salinas de Torrelavieja	Salt	Direct Sale
1991/92	Geasa	Porcelain	Direct Sale
1991	Jobac [4]	Wholesale	Direct Sale
1992	Campsa	Petrochemical	Direct Sale
1992	Icuatro	Health	Direct Sale
1993	FSC	Capital goods	Direct Sale
1993/94	Palco	Aluminium	Direct Sale
1994	Artespaña	Craftsmanship	Direct Sale
1994	CTE	Shipping	Direct Sale
1994/97	Enagas	Gas	Direct Sale
1995	Lesa	Food	Direct Sale
1995	Refinalsa	Aluminium	Direct Sale
1995	Sidenor	Iron and steel	Direct Sale
1995/99	Telefonica	Telecommunications	PO
1995/99	Indra	High technology	Direct Sale / PO
1996	Gas Natural	Gas	PO
1996	Sefanitro	Fertilizers	Direct Sale
1997 (SEP/OCT)	Aldeasa	Wholesale	Direct Sale / PO
1997	Almagrera	Mining	Direct Sale
1997 (JUL/DEC)	CSI-Aceralia	Iron and steel	Direct Sales/ PO
1997	Elcano	Sea transport	Direct Sale
1997	Ferroperfil	Aluminium	Direct Sale
1997	H.J. Barreras	Shipbuilding	Direct Sale
1997	Iongraf	Aluminium	Direct Sale
1997	Retevision [5]	Telecommunications	Direct Sale
1997	Surgiclinic Plus	Pharmaceuticals	Direct Sale
1998	Inespal	Aluminium	Direct Sale
1998	Inima	Environment	Direct Sale
1998	Productos tubulares	Iron and steel	Direct Sale
1998	Tabacalera	Food (tobacco)	PO
1999	Astander	Shipbuilding	Direct Sale
1999	Aya	Aerospace	Direct Sale
1999	Enatcar	Road transport	Direct Sale
1999	Icsa	Aerospace	Direct Sale
1999	LM Composites	Capital goods	Direct Sale
1999	REE	Energy	PO
2000	CASA	Aerospace	Direct Sale

(1) First and last year of the privatisation process (privatisation in stages or blocks).
(2) Although in 1990 0.5% of the firm was privatised, due to lack of information, we just consider the first stage of the privatisation process.
(3) Although in 1991 20% of the firm was privatised, due to lack of information, we just consider the first stage of the privatisation process.
(4) Although in 1995 30% of the firm was privatised, due to lack of information, we just consider the first stage of the privatisation process.
(5) Although in 1999 30% of the firm was privatised, due to lack of information, we just consider the first stage of the privatisation process.
(6) The industry classification corresponds to the one denoted by the SEPI reports (not SIC codes).
PO denotes Public Offerings
Source: Own elaboration

TABLE 3: Sample's industry and annual distribution, classification according to privatisation method

The sample consists of 58 companies privatised in Spain during the period 1985-2000. The number of privatisation processes amounts to 72.

Panel A: Sample's industry classification

Industry (SIC Codes)	*Number of observations*	*Percentage of observations*
10	1	1.39%
14	1	1.39%
20	3	4.17%
21	1	1.39%
22	1	1.39%
26	3	4.17%
28	3	4.17%
29	3	4.17%
30	1	1.39%
32	2	2.78%
33	8	11.11%
34	4	5.55%
35	2	2.78%
36	2	2.78%
37	12	15.67%
41	1	1.39%
44	2	2.78%
47	1	1.39%
48	4	5.55%
49	8	11.11%
50	2	2.78%
54	1	1.39%
55	2	2.78%
70	1	1.39%
73	3	4.17%
Total	72	100%

Panel B: Sample's annual distribution

Year	*Number of observations*	*Percentage of observations*
1986	6	8.33%
1987	5	6.94%
1988	2	2.78%
1989	7	9.72%
1990	3	4.17%
1991	2	2.78%
1992	5	6.94%
1993	2	2.78%
1994	4	5.55%
1995	6	8.33%
1996	2	2.78%
1997	13	18.05%
1998	5	6.94%
1999	9	12.5%
2000	1	1.39%
Total	72	100.00%

Panel C: Method of privatisation

Number of public offerings	18	25%
Number of direct sales	54	75%
Privatisation processes	72	100%

TABLE 4: Variables of the study

Variables	Description	Predicted relationship
Profitability		
Return on assets (ROA)	Operating profits divided by total assets	$ROA_A > ROA_B$
Return on equity (ROE)	Net profit divided by total equity	$ROE_A > ROE_B$
Return on sales (ROS)	Operating profits divided by sales	$ROS_A > ROS_B$ (H1)
Operating efficiency		
SALES/EMP	Real Sales divided by the number of employees	$SALES/EMP_A > SALES/EMP_B$
NP/EMP	Net profit divided by the number of employees	$NP/EMP_A > NP/EMP_B$
OP/EMP	Operating profits divided by the number of employees	$OP/EMP_A > OP/EMP_B$
AV/EMP	Added value divided by the number of employees	$AV/EMP_A > AV/EMP_B$ (H2)
Output		
Real sales (SALES)	Nominal sales/ index of retail prices	$SALES_A > SALES_B$ (H3)
Investment (INV)	Increase of fixed assets	$INV_A > INV_B$ (H4)
Leverage		
Total leverage (LEV)	Liabilities / assets	$LEV_A < LEV_B$
Long term Leverage (LLEV)	Liabilities LR / assets	$LLEV_A < LLEV_B$ (H5)
Employment (EMP)	Number of employees	$EMP_A < EMP_B$ (H6)

A and B denote after and before privatisation

TABLE 5: Raw mean and median differences (-3+3)

Variable	Pre- privatisation		Post- privatisation		Difference		Z	
	Mean	***Median***	***Mean***	***Median***	***Means***	***Medians***	***t-student***	***Wilcoxon***
PROFITABILITY								
ROA -3+3 (1S) N=38	1.380	2.525	3.073	4.899	1.693	2.374	-1.242	-1.675 *
ROA -3+3 (2S) N=38	1.380	2.525	2.804	4.899	1.424	2.374	-1.138	-1.080
ROE -3+3 (1S) N=41	3.161	8.363	8.097	9.943	4.936	1.58	-0.485	-1.160
ROE -3+3 (2S) N=41	3.161	8.363	7.793	9.779	4.632	1.416	-0.441	-0.862
ROS -3+3 (1S) N=37	1.466	2.616	5.012	5.097	3.546	2.481	-1.620	-1.531
ROS -3+3 (2S) N=37	1.911	2.616	2.946	5.097	1.035	2.481	-0.476	-0.837
EFFICIENCY								
SALES/EMP -3+3 (1S) N=48	0.055	0.036	0.068	0.040	0.013	0.004	-2.845 ***	-3.477 ***
SALES/EMP -3+3 (2S) N=48	0.053	0.036	0.063	0.045	0.01	0.009	-1.723 *	-2.900 ***
NP/EMP -3+3 (1S) N=36	-0.002	-0.003	0.012	0.004	0.014	0.043	-3.501 ***	-3.519 ***
NP/EMP-3+3 (2S) N=36	-0.002	-0.003	0.009	0.003	0.011	0.006	-2.839 ***	-2.671 ***
OP/EMP -3+3 (1S) N=34	0.005	0.001	0.012	0.005	0.007	0.004	-2.097 **	-2.624 ***
OP/EMP -3+3 (2S) N=34	0.006	0.002	0.018	5.746-03	0.012	3.746-03	-2.613 **	-2.801 ***
AV/EMP -3+3 (1S) N=22	0.097	0.067	0.100	0.085	0.003	0.018	-0.830	-1.899 *
AV/EMP -3+3 (2S) N=22	0.097	0.067	0.099	0.085	0.002	0.018	-0.219	-1.899 *
OUTPUT								
SALES -3+3 (1S) N=54	91.995	14.319	109.272	17.516	12.277	3.197	-0.363	-1.502
SALES -3+3 (2S) N=53	80.384	13.803	102.284	14.583	11.9	0.78	-0.983	-1.138
INVESSMENT								
INV -3+3 (1S) N=31	10.293	6.978	9.646	1.953	-0.647	-5.025	0.130	-0.063
INV -3+3 (2S) N=31	11.039	7.298	9.099	2.875	-1.94	-4.423	0.420	-0.072
LEVERAGE								
LEV -3+3 (1S) N=40	67.641	63.389	59.160	60.841	-8.581	-2.548	2.538 **	-2.204 **
LEV -3+3 (2S) N=41	68.174	63.812	53.849	57.266	-14.325	-6.546	3.461 ***	-2.974 ***
LLEV -3+3 (1S) N=39	14.634	13.295	15.634	11.659	1	-1.636	-0.441	-0.196
LLEV -3+3 (2S) N=39	15.191	13.295	15.702	12.256	0.511	-1.039	-0.228	-0.022
EMPLOYMENT								
EMP -3+3 (1S) N=51	2200.92	576	2635.019	379.66	434.099	-196.34	-1.331	-0.811
EMP -3+3 (2S) N= 51	2200.92	576	3325.464	379.66	1124.544	-196.34	-1.839 *	-0.444

* Statistically significant at a 10%
** Statistically significant at a 5%
*** Statistically significant at a 1%
1S denotes the first stage of the privatisation
2S denotes the last stage of the privatisation

TABLE 6: Industry adjusted mean and median differences (-3+3)

Variable	Pre- privatisation		Post- privatisation		Difference		Z	
	Mean	***Median***	***Mean***	***Median***	***Means***	***Medians***	***t-student***	***Wilcoxon***
PROFITABILITY								
ROA -3+3 (1S) N=39	-3.533	-1.070	-3.016	-2.102	0.517	-1.032	-0.344	-1.005
ROA -3+3 (2S) N=39	-3.533	-1.070	-1.611	-0.376	5.144	0.694	-1.329	-1.270
ROE -3+3 (1S) N=39	-21.421	0.855	3.667	4.845	25.088	3.99	0.478	-0.391
ROE -3+3 (2S) N=39	8.847	1.485	-3.678	2.911	-12.525	1.426	1.161	-1.312
ROS -3+3 (1S) N=36	-4.547	-3.524	-0.648	-0.798	3.899	2.726	-1.752 *	-1.995 **
ROS -3+3 (2S) N=37	-5.729	-3.938	-4.228	-1.349	1.501	2.589	-0.834	-0.696
EFFICIENCY								
SALES/EMP -3+3 (1S) N=47	0.002	-0.006	2.09-04	-4.20-03	-1.79-03	1.8-03	0.259	-0.529
SALES/EMP -3+3 (2S) N=47	-0.007	-0.007	-0.024	-0.012	-0.017	-0.005	1.225	-1.852 *
NP/EMP -3+3 (1S) N=38	-0.003	-1.477-04	0.003	6.269-04	0.003	7.74-04	-1.698 *	-1.791 *
NP/EMP -3+3 (2S) N=39	-0.004	-6.248-04	-0.002	-6.482-03	0.002	-5.85-03	-0.199	-0.112
OP/EMP -3+3 (1S) N=37	-0.005	-1.339-03	0.011	-0.002	0.016	-6.61-04	-1.723 *	-1.003
OP/EMP -3+3 (2S) N=37	-0.005	-1.339-03	-0.262	-0.006	-0.257	-0.001	0.964	-0.551
AV/EMP -3+3 (1S) N=22	0.040	0.017	0.031	0.023	-0.012	0.007	0.830	-0.243
AV/EMP -3+3 (2S) N=22	0.040	0.017	0.023	0.022	-0.017	0.005	-1.842 *	-1.1477
OUTPUT								
SALES -3+3 (1S) N=54	54.978	0.650	64.434	2.336	9.456	1.686	-0.428	-1.038
SALES -3+3 (2S) N=53	44.143	0.580	59.041	2.248	14.898	1.668	-0.618	-0.766
INVESTMENT								
INV -3+3 (1S) N=30	2.772	-2.157	8.176	7.223	5.404	9.38	-0.887	-1.224
INV -3+3 (2S) N=30	3.239	-1.227	6.539	6.727	3.3	7.954	-0.590	-0.915
LEVERAGE								
LEV -3+3 (1S) N= 41	9.619	2.305	7.452	-0.857	-2.167	-3.165	-0.483	-0.665
LEV -3+3 (2S) N=40	9.084	1.786	7.193	-1.106	-1.891	-2.892	0.412	-0.659
LLEV -3+3 (1S) N=36	-5.633	-5.640	-3.727	-5.380	1.906	0.26	-0.837	-0.424
LLEV -3+3 (2S) N=36	-5.633	-5.640	-4.139	-5.380	1.494	0.26	-0.646	-0.330
EMPLOYMENT								
EMP -3+3 (1S) N=51	1417.355	42.505	1887.555	109.010	470.195	66.505	-1.440	-0.291
EMP -3+3 (2S) N= 51	1417.355	42.505	2626.32	109.01	1218.965	66.505	-1.956 *	-1.322

* Statistically significant at a 10%
** Statistically significant at a 5%
*** Statistically significant at a 1%
1S denotes the first stage of the privatisation
2S denotes the last stage of the privatisation

TABLE 7: Raw mean and median differences (-5+5)

Variable	Pre- privatisation		Post- privatisation		Difference		Z	
	Mean	***Median***	***Mean***	***Median***	***Means***	***Medians***	***t-student***	***Wilcoxon***
PROFITABILITY								
ROA -5+5 (1S) N=18	-0.519	2.240	4.860	5.442	5.379	3.202	-3.939 ***	-3.593 ***
ROA -5+5 (2S) N=18	-0.519	2.240	4.319	5.377	4.838	3.137	-3.582 ***	-3.549 ***
ROE -5+5 (1S) N=24	1.743	7.780	-0.279	8.837	-2.022	1.057	0.186	-0.143
ROE -5+5 (2S) N=24	1.743	7.780	1.368	9.659	-0.375	1.879	0.034	-0.343
ROS -5+5 (1S) N=17	0.259	1.764	10.195	7. 095	9.936	5.331	-3.011 ***	-2.911 ***
ROS -5+5 (2S) N=17	1.665	1.764	5.865	7.095	4.200	5.331	-1.562	-1.870 *
EFFICIENCY								
SALES/EMP -5+5 (1S) N=24	0.056	0.036	0.071	0.055	0.015	0.019	-1.901 *	-2.512 **
SALES/EMP-5+5 (2S) N=24	0.056	0.036	0.071	0.055	0.015	0.019	-1.901*	-2.514**
NP/EMP -5+5 (1S) N=22	-3.59-04	-1.17-04	2.69-02	5.55-03	0.027	0.005	-0.179	-2.873 ***
NP/EMP-5+5 (2S) N=22	-5.17-03	-2.96-03	0.019	0.007	0.024	0.009	-3.395 ***	-4.110 ***
OP/EMP -5+5 (1S) N=18	0.010	0.002	0.037	0.015	0.027	0.013	-3.363 ***	-3.419 ***
OP/EMP -5+5 (2S) N=17	0.007	0.001	0.028	0.012	0.021	0.011	-3.898 ***	-3.290 ***
AV/EMP -5+5 (1S) N=8	0.090	0.088	0.101	0.093	0.011	0.005	-0.474	-0.420
AV/EMP -3+3 (2S) N=8	0.090	0.088	0.101	0.093	0.011	0.005	-0.474	-0.420
OUTPUT								
SALES -5+5 (1S) N=28	101.105	19.987	161.156	21.442	60.051	1.455	-1.560	-0.888
SALES -5+5 (2S) N=27	85.024	14.763	132.943	18.445	47.919	3.682	-1.322	-0.961
INVESTMENT (1)								
INV -4+4 (1S) N=21	9.308	5.571	8.935	7.536	-0.373	1.965	0.083	-0.365
INV -4+4 (2S) N=21	10.522	8.884	7.654	4.336	-2.868	-4.548	0.531	-0.156
LEVERAGE								
LEV -3+3 (1S) N=22	64.980	62.948	60.464	63.620	-4.516	0.672	0.950	-0.568
LEV -3+3 (2S) N=22	64.980	62.948	60.881	63.425	-4.099	0.477	0.838	-0.503
LLEV -5+5 (1S) N=20	16.178	14.157	13.292	7.004	-2.886	-7.153	1.013	-1.046
LLEV -5+5 (2S) N=21	17.540	15.098	14.133	6.789	-3.407	-8.308	1.196	-1.232
EMPLOYMENT								
EMP -5+5 (1S) N=26	2090.146	704.200	2708.833	444.300	618.692	-259.900	-1.314	-0.673
EMP -5+5 (2S) N= 26	2090.146	704.200	3478.494	411.323	1388.348	-292.877	-1.346	-0.698

(1) The maximum horizon that we can consider for the investment measure is nine years encompassing four years before and four years after the year of privatisation.

* Statistically significant at a 10%
** Statistically significant at a 5%
*** Statistically significant at a 1%
1S denotes the first stage of the privatisation
2S denotes the last stage of the privatisation

TABLE 8: Industry adjusted mean and median differences (-5+5)

Variable	Pre- privatisation		Post- privatisation		Difference		Z	
	Mean	***Median***	***Mean***	***Median***	***Means***	***Medians***	***t-student***	***Wilcoxon***
PROFITABILITY								
ROA -5+5 (1S) N=18	-5.611	-2.278	0.439	1.433	2.463	3.711	-4.511 ***	-3.680 ***
ROA -5+5 (2S) N=18	-1.965	-1.561	1.611	1.433	3.965	3.687	-2.258 **	-2.896 ***
ROE -5+5 (1S) N=23	9.394	3.786	-0.336	3.287	-9.73	-0.499	0.871	-0.639
ROE -5+5 (2S) N=24	7.799	3.116	-12.951	2.072	-20.75	-1.044	1.649	-1.600
ROS -5+5 (1S) N=18	-10.347	-7.291	2.775	1.850	13.122	9.141	-3.078 ***	-2.940 ***
ROS -5+5 (2S) N=17	-8.079	-7.517	1.479	1.777	9.558	9.294	-2.236**	-2.533**
EFFICIENCY								
SALES/EMP -5+5 (1S) N=25	0.018	5.87-04	-0.549	-0.015	-0.0567	-0.015	2.112*	-1.444
SALES/EMP -5+5 (2S) N=24	0.020	8.37-04	-0.115	-0.014	-0.135	-0.0148	1.092	-0.943
NP/EMP -5+5 (1S) N=21	-3.46-03	-3.55-03	2.36-02	-2.83-04	0.058	3.26-03	-2.235 **	-1.964 **
NP/EMP -5+5 (2S) N=22	-0.004	-0.004	0.002	-5.78-04	0.006	3.42-03	-1.165	-1.542
OP/EMP -5+5 (1S) N=16	-0.008	-0.007	0.010	0.001	0.018	0.008	-2.702 **	-2.741 ***
OP/EMP -5+5 (2S) N=17	-0.007	-0.005	0.004	-0.003	0.011	0.002	-2.019 *	-1.965 **
AV/EMP -5+5 (1S) N=8	0.059	0.053	-0.329	0.018	-0.380	-0.035	1.255	-1.960*
AV/EMP -5+5 (2S) N=8	0.059	0.053	0.062	0.032	0.003	-0.021	-0.061	-0.840
SALES								
SALES -5+5 (1S) N=28	72.676	10.977	123.871	1.150	51.195	-9.827	-1.178	-0.023
SALES -5+5 (2S) N=28	72.676	10.997	241.430	1.150	168.754	-9.847	-1.268	-0.091
INVESTMENT (1)								
INV -4+4 (1S) N=21	-0.228	-2.984	8.258	9.568	8.486	12.552	-1.964 *	-2.068 **
INV -4+4 (2S) N=20	0.181	-1.939	4.479	5.902	4.298	7.841	-0.843	-1.195
LEVERAGE								
LEV -5+5 (1S) N= 21	4.929	5.746	4.043	2.847	-0.886	-2.899	0.204	-0.191
LEV -5+5 (2S) N= 22	7.255	6.046	4.161	4.277	-3.094	-1.769	-0.542	-0.568
LLEV -5+5 (1S) N=21	-0.650	-4.059	-3.382	-4.440	-2.732	-0.381	0.985	-1.616
LLEV -5+5 (2S) N=22	-1.629	-4.117	-2.664	-2.637	-1.035	1.48	0.322	-0.503
EMPLOYMENT								
EMP -5+5 (1S) N=26	1661.491	104.831	2414.159	76.547	752.668	-28.284	-1.314	-0.038
EMP -5+5 (2S) N= 26	1661.491	104.831	2480.287	92.82	818.793	-12.011	-1.334	-0.013

(1) The maximum horizon that we can consider for the investment measure is nine years encompassing four years before and four years after the year of privatisation.

* Statistically significant at a 10%
** Statistically significant at a 5%
*** Statistically significant at a 1%
1S denotes the first stage of the privatisation
2S denotes the last stage of the privatisation

GRAPH 1: Privatised firms' raw and industry adjusted ROA (1S) (economic cycle)