

The Strategy of the French Entrepreneurial State in the Nationalization and Privatization Processes: a comprehensive financial evaluation

Abstract

This paper addresses the important issue of computing net value of nationalizations and privatizations and their effect on the State's patrimony. The evolution of the State's patrimony evolution between 1978 and 2010 is characterized by a drastic fall in its assets and a rise of financial liabilities. In order to capture the State's strategy, which we consider to be that of an entrepreneur, we define its entrepreneurial patrimony as the sum of its listed and unlisted shares. We show that two episodes of increase in the entrepreneurial patrimony, during 1999 and 2007, are due to share market phenomena. We compare these trends with those of Germany, Italy and Spain, underlying that France accumulated the highest amount in terms of value among the four countries and used very often the stock market for its transactions. We complete our study by performing a financial analysis of the major stocks entering the State's portfolio. According to our calculations, the nationalizations-privatizations strategy led by the French State leads to a financial loss of 13 305 billion Euros (capitalized in 2010) equal to 7 years of GDP (2010).

Keywords: Nationalization, Privatization, Stock Market, Financial Analysis

JEL Codes: L33, N20, G11.

1. Introduction

Many economic motives have guided governments in the implementation of nationalizations that have experienced a wide expansion around the world. Nationalizations can be seen as an antitrust policy, a potential correction to market failures or a way to restructure the productive system (Stoffaes, 1983; Bös, 1991; Willner, 2001). Additionally, nationalizations can overhaul the financing of the economy and they can be an instrument of social change. Privatizations eventually improve firms' performance, allowing the development of savings' investment in capital for firms. Finally, privatization can be a substitute for debt since it provides new financial resources to the State.

This work is motivated by the role the public sector plays, in a cyclical manner and perhaps temporarily, to counter the effects of the financial and economic crisis. We analyze the case of France, where three nationalization waves can be identified:

- The first, 1936-1937, was limited to some weaponry industries in which the State took a majority stake and the creation of the SNCF (Société nationale des chemins de fer français), joint venture, which in 1982, at the end of the Convention 1937, became an industrial and commercial public establishment;
- The second wave, 1944-1946, was much larger. It concerned coal production and distribution of electricity and gas, maritime and air transport, some construction companies, aerospace and automotive industries, but also Bank of France, the four largest commercial banks and major insurance companies;
- The third wave in 1982 was the largest, since it is estimated that it doubled the percentage of commercial public sector employees compared to all salaried employees (excluding agriculture): 25% compared to 12 to 13% previously. It concerned the industrial, commercial and banking sectors.¹

The majority of the nationalized firms have then entered into different phases of privatization that can be seen as a continuous and dynamic process. If two years, 1986 and 1993, appear as symbolic dates in the French privatization process, substantial revenue by selling shares of public companies is recorded in other periods.

The nationalization of enterprises, their presence in the public sector for several years, then their privatization, have led to the movement of substantial funds, that should be identified before making any assessment. Beyond the particular periods of nationalization and

¹ In the first wave, among the firms nationalized there were: (i) five of the largest French industrial companies that were still under private ownership: Rhone-Poulenc, Pechiney-Ugine-Kuhlmann (PUK), Compagnie de Saint-Gobain, Compagnie Générale d'Electricité (CGE), Thomson-Brandt. These are all pure holding companies - with the exception of Thomson-Brandt, who also has an industrial activity - not managing any public service and exposed to internal competition and especially international, that have been entirely nationalized; (ii) Three companies with strong foreign participation, CIL-Honeywell Bull, France ITT and Roussel-Uclaf, for which agreements have been signed with foreign partners; (iii) two steel companies, Usinor and Sacilor, already well advanced on the path of nationalization; (iv) Matra and Dassault-Breguet including the partial nationalization was the result of agreements with the previous leaders. In the banking sector the nationalization concerned: (i) thirty-nine banks, adding to the previous, that had their headquarters in France, and held at January 2, 1981, 1 billion francs in the form of deposits or liquid investments or short-term Swiss franc and foreign currencies on behalf of residents. Applying these criteria, has escaped nationalization: the SICOMI, the discount houses, banks with a majority of the capital that belonged to individuals not residing in France or legal persons domiciled outside headquarters banks whose deposits or liquid investments were less than one billion francs; (ii) both financial firms Paribas and Suez, while in 1945 no investment bank had been nationalized.

privatization, one should also consider the amount of money - often very important - injected into these companies during their passage through the public sector, as well as income generated by the State in its entrepreneurial role and the allocation of the expenses of privatization. These expenses are the reduction of public debt, the recapitalization of public companies or finance targeted expenditures (the employment policy in the 1990s, academic development recently with the sale of EDF shares).

This work contributes to the evaluation of the strategies of what might be called the French "Entrepreneurial State". We adopt this denomination in order to take into account the complexity of the State's strategy at stake here. An entrepreneurial behavior is characterized by the existence of a prior strategy, which aims at generating profits, taking into account risks. This seems to be the case for the nationalizations-privatizations strategy led by the French State. Indeed, the State's role goes beyond the one of a shareholder for several reasons. The main objective of a shareholder is profitability, whereas for the State, other objectives, such as redistribution, can take over profitability. Therefore, nationalization or privatization are part of public policy together with many other instruments.

We account for all financial flows generated by firms entering in the State's property (the amount and terms of compensation for nationalization, amortization cost of debt) until their exit from the public sector (privatization proceeds and allocation of revenues). We also retrace all financial flows of firms under public management (dividends transferred to the State, recapitalization of businesses, grants and various subsidies).

We complete the inventory of burdens borne, directly or indirectly, by the State, by answering the following simple questions: at what price did the State buy the nationalized companies? What was the price they were sold for? Between these two dates, what were the revenues and expenses related to the State's ownership of these companies? To this end, we retrace the French State's patrimony and analyze the determinants of its evolution.

To our knowledge, there were two attempts to make an assessment of the State's strategy as a shareholder. Both of them differ from our approach. The Court of Auditors studied the back and forth movements of nationalized then privatized companies between 1982 and 1986 and drew a balance sheet of these financial operations. They used a sample of nine companies that entered and exited State's ownership simultaneously: three industrial holdings (Saint Gobain, Compagnie générale d'électricité, Matra), four bank holdings (Paribas, Suez, Crédit commercial de France, Société générale) and two independent banks (Banque du bâtiment et

des travaux publics, Banque industrielle et mobilière privée). Their results are presented by financial group and are mostly negative for the State's accounts. Dumontier and Laurin (2003) also analyze the Government's strategy of nationalizations and privatizations between 1982 and 1986 and its impact on firms' performance. They make an assessment of this particular episode on nationalizations/privatization and conclude that the sample companies benefited from this strategy (their performance was dramatically increased), while the French Government, and French citizens respectively, had registered a financial loss. In other words, the added value created by these operations was paid by the French citizens to the private owners of the nationalized (and then privatized) firms.

Our analysis highlights the rapid and almost linear decline in the State's patrimony over the last decades. One would expect the entrepreneurial patrimony to decline during privatization periods, but this is not what we observe for the whole period. Two increases are recorded, during 1999 and 2007. To understand the reason of such sudden peaks, we investigate the link between the entrepreneurial patrimony and the stock market. We compute the correlation between the stock market index and the State's entrepreneurial patrimony to catch the relationship between the value of the holdings in the State's portfolio and the trend in the stock markets. Moreover, we measure the correlation between the patrimony of the State and the one of households to complete the previous result. Given that in both cases correlations turn out to be quite high, we can affirm that the change in the price of listed holdings had major impact on the patrimony of the French State. Therefore we analyze more in detail the State's portfolio as it was made up of different stocks. Within our panel of stocks, the financial and the energy sectors are the most recurring sectors among the State's investments in listed shares. Moreover, we observe daily returns for the whole portfolio and, comparing its rolling volatility to the one of the index, we observe that the first one is slightly lower.

We also calculate the rolling correlation with the stock index and we notice that this correlation increased over time. This can explain the reason why, looking at the evolution of the price of both the portfolio and the index, the market seems to reward companies participated by the French State once they are privatized.² Then, we use stock market data to measure the impact of a privatization on the price of its listed shares via abnormal returns but we do not find any evidence of this influence.

² Notice that we used only State's direct holdings, we did not consider the investments of Caisse des dépôts et consignations in companies of small and medium capitalization.

Finally, we compare three European countries, Germany, Italy and Spain, to France to find out if the French case presented some interesting anomalies in terms of stock market trend or with regard to revenues from privatizations and to the methods used by the States for these transactions. In fact, we show that there is no difference between the course of the French stock index and the other indexes. However, France accumulated the highest amount in terms of value among the four countries and it used more often the stock market for its transactions compared with the others. Furthermore, we show that when the State decided to sell its whole participation in one block, it often sold through a private sale. Our analysis also unveils that the French government pooled its largest privatizations after the other European countries we analyzed. Comparing these figures with the stock market cycle, we find that France made important privatization during the financial crisis in 2008. We also address the same comparison using the yearly number of privatizations for each country. Finally, we try to detect the possible impact of privatizations on the stock markets using a ratio that takes into account the value of the privatizations and the market capitalization. However, we do not find any noticeable evidence on that influence.

We complete our analysis by presenting a balance sheet of the State's nationalizations and privatizations. We computed the net present value in 2010 of the cash flows associated with the entrepreneurial activity of the State for different companies. We find out that these investments displayed a negative net present value because the State has never made up for the actual cost of nationalization. In fact, regarding nationalization and privatization process, the French State was not able to make profitable investments from a mere financial point of view. Our results show that between 1978 and 2009, State's patrimony declined drastically and its nationalization-privatization strategy incurred in a high cost, which we estimate to be around 13 thousand billion Euros (capitalized in 2010).²

² From the relevant transactions that we took into account for the whole panel, we excluded the nationalization of Banque de France. Banque de France (BdF) was not included because it is supposed to remain a state owned regulatory authority. On the other hand, we reckoned the massive recapitalizations on behalf of Société Nationale des Chemins de fer (SNCF) because, on a theoretical basis, it allows for the possibility of a privatization. However, it is worth to be notice that SNCF has been by far the institution that benefitted the most from State's expenditures. Hereafter, we display the total amount of flow capitalized in 2010 in millions of euros as reckoned using three different panels:

14 807 501	All available data
13 305 304	BdF not included
945 839	BdF and SNCF not included

Eventually, we calculate the internal rate of return for each of the companies within our panel and, with some mathematical caveats that we will discuss further on, we find that on average these investments had a negative internal rate of return, meaning that the investment is likely, a priori, to lose money and should be ruled out.

All in all, we perform a comprehensive and innovative analysis of the French State's patrimony and entrepreneurial strategies, over the last 40 years, by using both a macro and a micro perspective.

The paper is organized as follows. After discussing the existing literature on the subject in the Section 2, we present State's patrimony, its level and its composition, as well as its evolution over the years in Section 3. We refine the analysis with a succinct presentation of the financial patrimony, which rises significantly between 1978 and 2009, and then we focus on the entrepreneurial patrimony, which we defined as the sum of listed and non-listed shares held by the State in Section 4. We then use stock market data as a source of complementary information along with data related to privatizations and figures about State's and households' patrimony in Section 5. We briefly conclude in Section 6.

2. Literature review

Adopting an upstream view of the State's patrimony, Bortolotti, Fantini and Siniscalco (2001) study the determinants of privatization decisions and conclude that privatizations are mainly influenced by political factors and the Government's budgetary constraints – Governments facing hard budget constraints privatize more. They also show that privatization receipts depend on demand issues that can't be tackled by the State, at least not on the short term, such as financial market development. The issue of the impact of privatizations on the public budget arises and Nestor and Mahboobi (2000) show that, for the OECD countries, no evident effect arises since the shares were replaced by liquidities. Nevertheless, they pinpoint a heterogeneous situation among countries illustrated by the Italian case, where privatization receipts explicitly used to reduce public debt. Privatizations can increase State's fiscal revenues through another mechanism as well: since public firms often benefit of lower taxation or even tax exemptions, their privatization increases the State's tax base. In a study on privatizations in Great Britain, Nera (1996) finds that, in the last decade, the additional revenue caused by the higher fiscal receipts due to privatizations is estimated to be between 3.5 and 5.8 billion pounds. Privatizations can also affect well-being, especially when they concern public utilities. Studies on the matter generally find positive effects, especially for poor (MacKenzie and Mookherjee, 2003; Fischer, Serra and Gutierrez, 2004).

In a study on 25 transition countries, Zinnes, Eilat and Sachs (2001) show that a successful privatization program has to be accompanied by institutional reforms and, if it's not the case, privatization can have a negative effect of economic performances. For instance, Brown,

Earle and Telegdy (2006) find that privatizations significantly increased productivity in Hungary and Romania, but had no impact in Ukraine and a negative one in Russia. Furthermore, Megginson and Netter (2001) and Megginson (2010) show that privatization programs increased significantly the stock market capitalization and the volume of the stock exchange and thus, countries that led important privatization programs witnessed a development of their financial markets.

In a study on Italy, Megginson (2006) finds that privatizations had a significant positive effect on the economic and financial system, but they did not led to the expected benefits for consumers, nor did it increase firms' competitiveness. The conclusions are even more pessimistic for the Spanish privatization program (Arocena, 2004). Not only privatizations had no effect on firms' performance, but the State's effort in creating and restructuring solid industrial holdings led to their selling off once they were competitive and profitable. Arocena (2004) also underlines that, for the privatized public utilities, their pre-privatization recapitalization allowed their international expansion, whereas the companies showing a lost were kept in the State property. He concludes that the only objective achieved was the getting short-term liquidity.

Research on French privatizations is quite vast, but still incomplete. A detailed account of French nationalizations and privatizations is given by André (2006), with an interesting historical view. Berne and Pogorel (2004) briefly describe privatizations in France and illustrate the opportunities and the problems faced by privatized companies using the example of France Telecom and EDF. With a more sociological point of view, Macclean (2008) shows that privatizations enforce the links within the French elite.

Dumontier and Laurin (2003) study the value that was created (or destroyed) for the firms nationalized in 1982 and privatized between 1986 and 1997. Their results indicate that the nationalization-privatization strategy was not value-destroying. Nevertheless, neither the Government, nor the French tax-payers, registered a gain from this strategy and it is due to the significant bonuses paid to former share-holders of nationalized companies and to under-priced shares at the privatization time. On a similar research line, comparing private and privatized firms, Obeid (2011) finds a higher stock market performance for the latter.

Our research takes a different perspective. The cost of nationalization is not limited to paid compensations to former owners of nationalized companies. Some public enterprises, especially those managing a public service, have always needed public funds to operate. In

the lineage, others pay, regularly or sporadically, dividends to their shareholder, the State, and these payments should also be taken into account. The financial situation of public enterprises, old or new, is very diverse and their sources of funding are not exclusively public. Moreover, the nationalization of enterprises, their presence in the public sector for several years, then privatization, have led to State movement of substantial funds, that should be identified before making any assessment. Our methodology adds to the previous literature by making such an assessment. Moreover, we complement this macro evaluation of the State's patrimony by analyzing in detail the links between such a patrimony and the stock market, finding that in the last decade the creation of value in the public sector also comes from the performance of public firms in the financial market. We thus carefully evaluate the dynamic performance of what we call the entrepreneurial patrimony as it is driven by stock market investments.

Finally, we accurately inventory all financial movements that have involved the State. One might think that the most important data concern the nationalization – as the amount of compensation and the privatization – as the sale proceeds. But that would minimize the importance of flows that took place between two dates; for some companies, these flows have represented significant amounts, which would significantly alter the State's financial results concerning the nationalization / privatization process. In the process of privatization of companies, the State collected the proceeds of this sale. Yet, it has not received all of the gross receipts resulting from privatization. To this end, in our financial assessment, the amount of commissions paid to financial intermediaries that have guaranteed the sale transactions and, in some cases, the amount of major financial transactions undertaken simultaneously, increases of capital or restructuring, have been subtracted.

3. State's patrimony

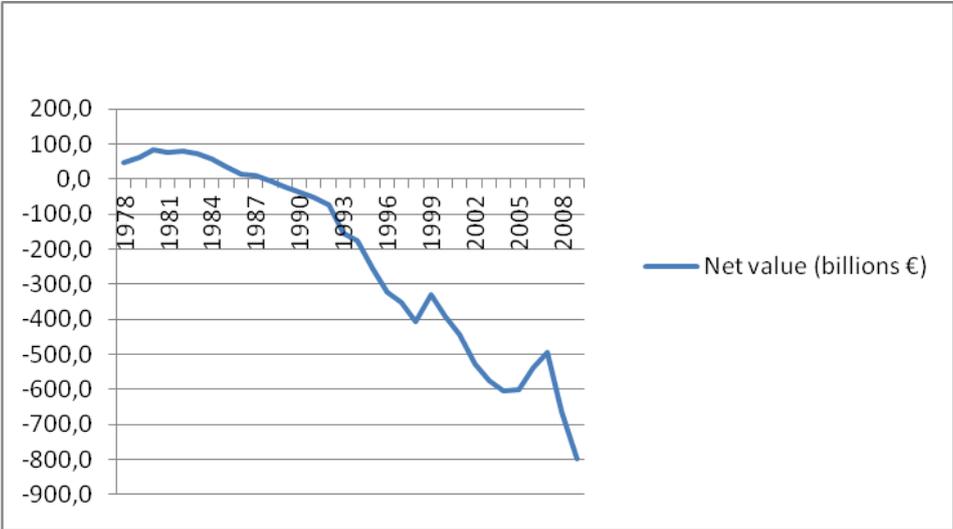
The first step in our analysis is the reconstruction of the State's net total patrimony. We computed it as the difference between total assets and financial liabilities.³ All the values are in current prices and they are computed using perpetual inventory method. A model of capital accumulation operates the prices of a year, to compare and combine the flows that have

³ The data use for the computations comes from the national accounts published by Banque de France between 1978 and 2009. Compared to the available INSEE information, the database from Banque de France is structured accordingly detailed level we need.

occurred on different dates. That is why the data streams are first used at constant prices, to obtain an evaluation by accumulation of gross capital and net capital at constant prices. In a second step, the results are measured in constant prices using an index of price changes in the flow of each asset, which provides data at current prices. The financial patrimony concerns all the financial assets possessed by the State.

Since the State did not own any UCITS (Undertakings for Collective Investment in Transferable Securities) before 2006, State’s entrepreneurial patrimony is computed as a sum of quoted and unquoted shares.

Figure 1. State’s patrimony



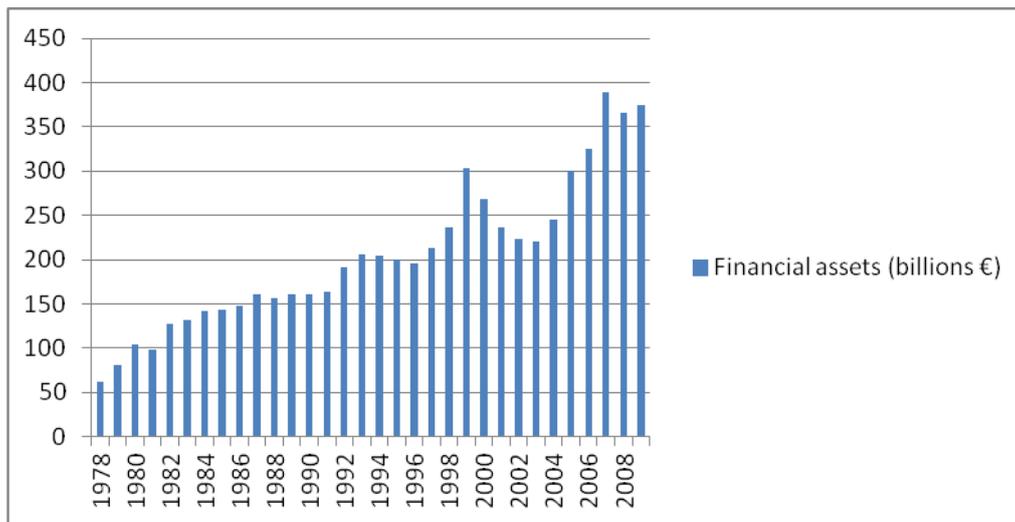
Source: Author’s elaboration using Banque de France data.

As figure 1 shows, since 1982, the State witnessed an almost constant decline of its patrimony, the only exceptions being 1999 and 2007. In 2009, State’s patrimony amounted to -797.1 billion Euros, representing 41.8 percent of the GDP in absolute value.

In order to better understand this evolution, we studied the different components of the total patrimony, and, in particular, the financial patrimony, that concerns all the financial assets possessed by the State.⁴

⁴ For a detailed account of the financial assets held by the State, see Figure A1 of the Annex

Figure 2. State's Financial patrimony



Source: Author's elaboration using Banque de France data.

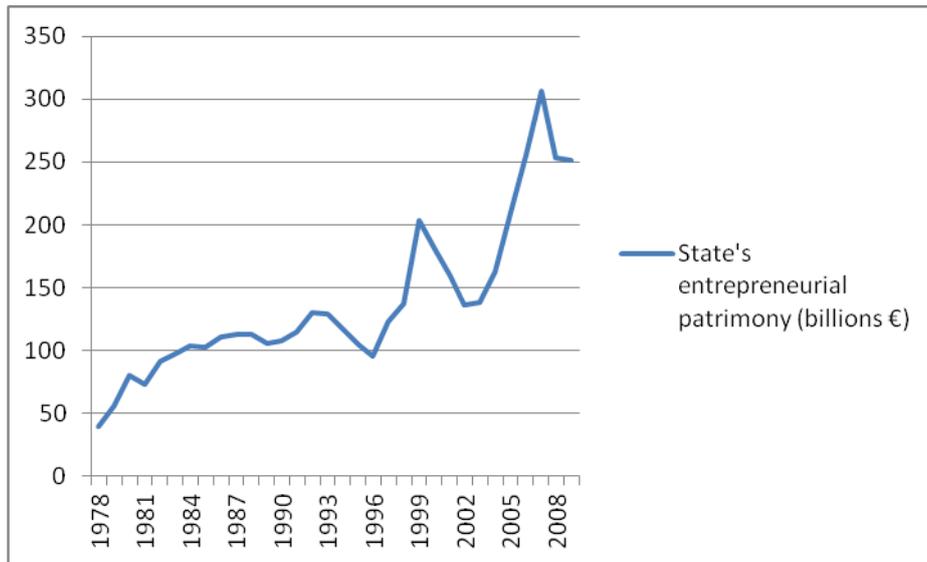
The peaks correspond to the increases observed for the total patrimony, confirming thus our intuition, that the total patrimony's trend was heavily determined by the financial patrimony. In other words, we have, on the one hand, the Government's will to reduce the State's presence in the economy, put into action by massive sales of State's assets and an increase of its financial liabilities (see Source: Authors' computations

Figure in the Annex). On the other hand, the financial assets of the State are rising and, in 1999 and 2007, pull the entire patrimony upwards.

The next logical step is thus to have a detailed look at the financial patrimony and, more specifically, at the entrepreneurial patrimony.⁵

⁵ Computed as a sum of quoted and unquoted shares. The UCITS (Undertakings for Collective Investment in Transferable Securities) are not significant – they only appear since 2006 and represent between 0.02% to 0.04% of the total.

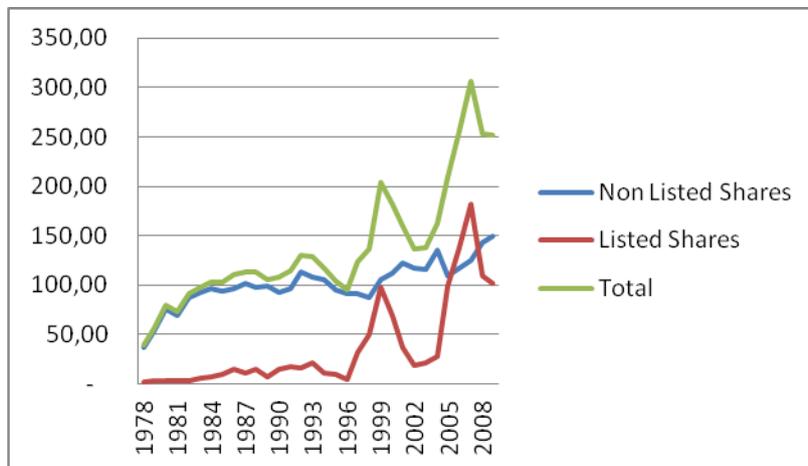
Figure 3. State's entrepreneurial patrimony



Source: Author's elaboration using Banque de France data.

When observing the evolution of the State's entrepreneurial patrimony, one would expect to be able to identify the different waves of privatizations. In other words, for the years when the French government led the privatizations, the State's entrepreneurial patrimony should take a downward turn. While this is the case for the first waves of privatization, 1986-1988 and 1993-1996, the situation is different for the privatizations of the late 1990s. Instead of observing a fall in the State's entrepreneurial patrimony, we witness a rise. In order to understand this evolution, we disaggregated the composed patrimony between listed and unlisted shares and analyzed their separate evolutions.

Figure 4. State's disaggregated entrepreneurial patrimony (billions €)



Source: Author's elaboration using Banque de France data.

Figure 4 shows that the total entrepreneurial patrimony’s evolution is mostly due to the listed share’s evolution, indicating thus a price effect linked to the stock market. We argue that the positive price effect was significantly larger than the negative volume effect (caused by the sales of shares in the privatization process), resulting thus in an increase of entrepreneurial patrimony. We further investigate this hypothesis by analyzing the links between the State’s entrepreneurial patrimony and the stock market.

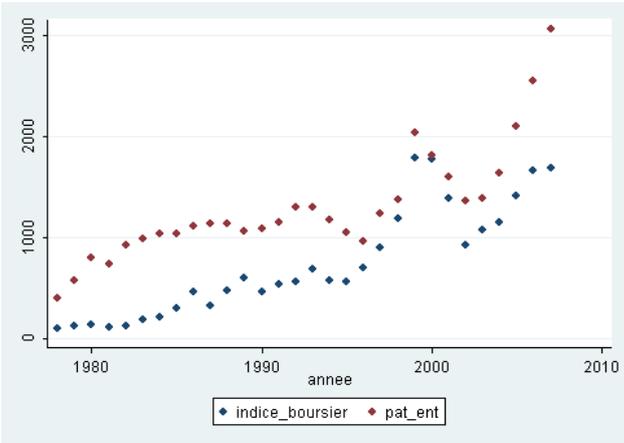
4. Entrepreneurial patrimony

We observed the stock markets to understand how the values we looked at, such as privatization revenues for the State, the State’s entrepreneurial patrimony and the State’s portfolio, evolved in a wider context of equity markets. In doing so we got some hints on the macroeconomic cycle for France and other countries with an international comparison analysis; we examined how the State’s patrimony is correlated with the stock index; we analyzed with more detail a representative portfolio made up of companies where the State held its share. These approaches are described in the following three paragraphs.

4.1 . State’s entrepreneurial patrimony - Correlations

We computed the correlation between a stock market index provided by INSEE and the State’s entrepreneurial patrimony. The results indicate a significant correlation coefficient of 0.8818, as illustrated graphically by figure 5.

Figure 5. Correlation between market index and State’s entrepreneurial patrimony

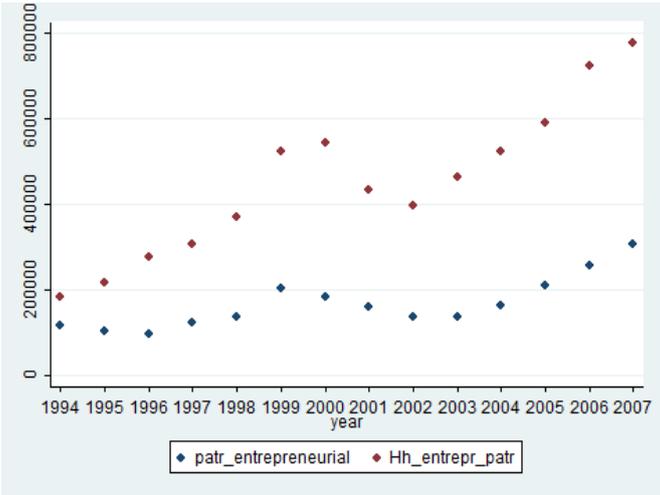


Source: Author’s elaboration using Banque de France data and INSEE stock market index

Furthermore, we used a Granger test to determine whether the correlation might hide a causality relation between the stock market index and the State’s entrepreneurial patrimony. The results show that the stock market index does not Granger-cause the evolutions of the State’s entrepreneurial patrimony. The test was realized using up to 4 lags. Nevertheless, the limited size of the time-series(1978-2010) might significantly influence the test’s results.

We then tried comparing the evolution of the State’s entrepreneurial patrimony with the evolution of a private institution’s entrepreneurial patrimony. Data on the household’s patrimony, computed using the same method as for the State’s patrimony, served for comparison. Again, the correlation coefficient is highly significant: 0.9420 and from figure 6 we can see that both patrimonies have a similar evolution, indicating thus a price effect.

Figure 6. Correlation between State’s entrepreneurial patrimony and households’ entrepreneurial patrimony



Source: Author’s elaboration using Banque de France data.

4.2 State’s entrepreneurial patrimony – Composition

To have a better understanding of the State’s portfolio and to understand whether the price effect is correlated with the development of the stock market, we looked at the price movements of its stocks traded at the Paris stock exchange. Reuters and Datastream provided us with price series of 22 companies held in the State’s portfolio between 1987 and 2009. We chose 1987 as the starting date because of our need to compare daily price data with daily values of the main index in France, CAC40, that was created in that year.

We excluded those companies, such as Compagnie de Saint-Gobain and Société Générale, which were privatized in one occasion at 100% before our observation period, so that they did not belong anymore to the State.

Finally we obtained a list of 19 companies: Alstom, Areva, BNP Paribas, Bull, CIC, CNP, Credit Lyonnais Dassault Systemes, EDF, Eramet, France Telecom, GDF Suez, Havas, Icade, Pages Jaunes, Renault, Safran, Technicolor and Total.

These companies are active mainly in the following 10 sectors: Airline industry, Finance, Energy, Services, Mining, Information Technology, Telecom, Real Estate, Automotive industry, Defence.

In our attempt of estimating a virtual part of the State's entrepreneurial portfolio made up of listed shares, we dealt with two main problems. The first one was the unknown weights associated with each stock. The second issue was about the increasing number of privatized companies through ongoing public offers in the stock market over the period, which made the bulk of the data available only over the last ten years of the period. Actually, the number of stocks, for which we have the price series, increases from 5 in 1987 to 20 in 2010.

We coped with the first issue assigning equal weights to the different stocks within the portfolio. In fact, our aim was to evaluate the movements in the price of companies held by the State rather than replicate the exact portfolio. In other words, we want to compare the changes in the price of this group of companies compared to a wider group represented by the stock index.⁶

The second problem was associated with a growing bias towards a lower volatility of the portfolio given by the diversification effect among an increasing number of stocks over time. In fact, each time we introduced a new listed company within the portfolio, which was reckoned as the average price of its constituents, the value of its standard deviation peaked. To avoid these fluctuations, we calculated a synthetic return for the portfolio as an equal weighted sum of the stocks' returns. Then, we gave the portfolio a value of 100 basis points at the beginning of the period we considered.

Being the financial and energy sectors the most recurring in our panel, their weighty presence explains why the historical volatility of our portfolio is not so different from the one related to the index, 23% and 25% respectively since the year 2000 when there were 17 listed stocks

⁶ We collected price data using Reuters and Datastream databases.

among the State's holdings. If we look at the daily value at risk⁷ of the portfolio and the index since 2000 with a confidence level of 95% the figures are -2.4% and -2.6% respectively. In other words, on historical basis, there is a 5% probability that the State's portfolio could fall by more than 2.4% over a one-day period.

Actually, one could expect that the State's portfolio should be even less volatile because it is usually made up of utilities, i.e. public infrastructures, which historically display a lower standard deviation than other sectors. We tested this assumption measuring the risk of the individual stocks within the portfolio and we finally did not find evidence on this. In the chart below we ordered the list of companies from the less volatile to the highest. The common assumption seems not reasonable here because of several price fluctuations given by corporate governance evolutions and other idiosyncratic price sensitive factors more than a market risk component, i.e. external elements influencing the price of the single stock. In fact, as the chart displays, the standard deviation decreases for most of the stocks considered in the last ten years while the risk of the market augmented.

Table 1. Single stocks standard deviation

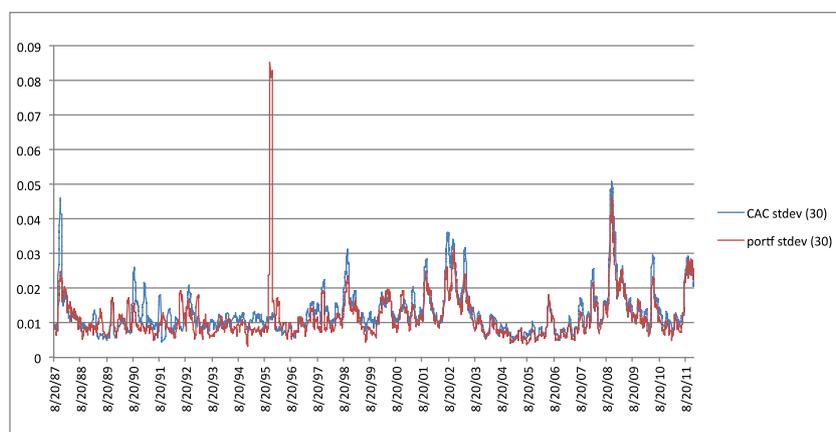
name	sector	std dev since 1987	std dev since 2000	difference	VaR daily (since 1987)	VaR daily (since 2000)
CAC40		1.43%	1.59%	0.16%	-2.36%	-2.62%
1 CIC	Finance	1.44%	1.43%	-0.01%	-2.37%	-2.35%
Portfolio		1.54%	1.44%	-0.10%	-2.54%	-2.38%
2 credit lyonnais	Finance	1.62%	1.63%	0.01%	-2.67%	-2.69%
3 Total	Energy	1.79%	1.77%	-0.02%	-2.95%	-2.92%
4 CNP	Finance	1.93%	1.92%	-0.01%	-3.18%	-3.16%
5 EDF	Energy	2.04%	2.04%	0.00%	-3.36%	-3.36%
6 PagesJaunes	Services	2.09%	2.09%	0.00%	-3.43%	-3.43%
7 gdf suiez	Energy	2.11%	2.11%	0.00%	-3.48%	-3.48%
8 Safran	Defence	2.29%	2.76%	0.47%	-3.77%	-4.54%
9 BNP Paribas	Finance	2.51%	2.59%	0.08%	-4.12%	-4.25%
10 Havas	Services	2.56%	2.94%	0.38%	-4.21%	-4.84%
11 Areva	Energy	2.65%	2.87%	0.22%	-4.35%	-4.72%
12 Renault	Automotive industry	2.66%	2.66%	0.01%	-4.37%	-4.38%
13 France telecom	Telecom	2.68%	2.69%	0.01%	-4.42%	-4.43%
14 Dassault Systemes SA	Information Technology	2.74%	2.70%	-0.04%	-4.51%	-4.44%
15 Eramet	Mining	2.82%	3.06%	0.24%	-4.64%	-5.04%
16 ICADE	Real Estate	2.88%	2.56%	-0.32%	-4.74%	-4.22%
17 Alstom	Energy	3.68%	3.76%	0.07%	-6.06%	-6.18%
18 Technicolor	Services	3.75%	3.72%	-0.03%	-6.17%	-6.13%
19 Bull	Information Technology	7.14%	3.87%	-3.27%	-11.74%	-6.36%

Source: Reuters and Datastream

⁷ Value at Risk : for a given portfolio, profitability and time horizon, VaR is defined as a threshold value such that the probability that the mark-to-market loss on the portfolio over the given time horizon exceeds this value (assuming normal markets and no trading in the portfolio) is the given probability level. Jorion, Philippe (2006). *Value at Risk: The New Benchmark for Managing Financial Risk* (3rd ed.). McGraw-Hill.

The graph below displays the rolling daily standard deviation over a period of 30 days for the CAC40 and the portfolio. The spike in October 1995 was triggered by a major change in the price of Bull.⁸

Figure 7. Rolling standard deviation



Source: Reuters and Datastream

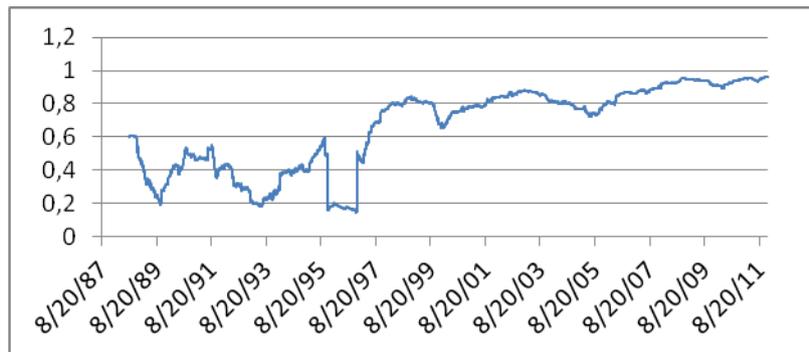
Looking at the volatility of the two values based on daily returns, the index and the State's portfolio, we notice that the performances of the latter reveal their defensive feature particularly in periods of stress such as the Asian crisis in 1997, the internet bubble in 2000 and the financial crisis in 2007/2008 if compared with the whole French stock index. In fact, the portfolio made up companies held by the State, displays a slightly lower standard deviation in all these periods.

In the whole period we considered, i.e. since 1987, the correlation between the returns of the portfolio and the French index was 0.69 whereas it was 0.89 if we look at the last 10 years only. In fact, as it can be seen from the graph below, the rolling correlation, reckoned on 252 days, has grown over time and it has been more stable in the last 10 years. This change can be seen as an increase in the reliability of our representative portfolio that moves more and more similarly to the stock index as the number of privatized companies that compose it grows.

⁸ Les Echos n° 17008 du 20 Octobre 1995, page 14.

In the process of further privatization, at the end of the subscription period for the employees, the company announced a huge loss that shook its financial stability and the stock sank.

Figure 8. Correlation between State's portfolio and CAC40



Source: Reuters and Datastream

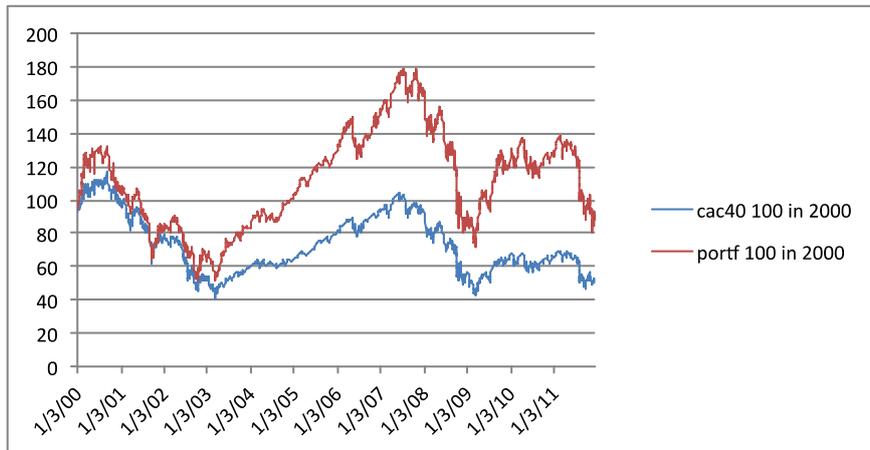
The graph below presents the historical values of the portfolio we built with the returns of the 20 privatized firms with a starting value of 100 basis points. It clearly displays an outperformance of the State's holdings both if we calculate it since the inception of the CAC40 in 1987 or since 2000. Finally, the market seems to reward companies that are participated by the French State once they are privatized.

Figure 9. CAC 40 vs State's portfolio since 1987 (base 100)



Source: Reuters and Datastream

Figure 10. CAC 40 vs State's portfolio since 2000 (base 100)

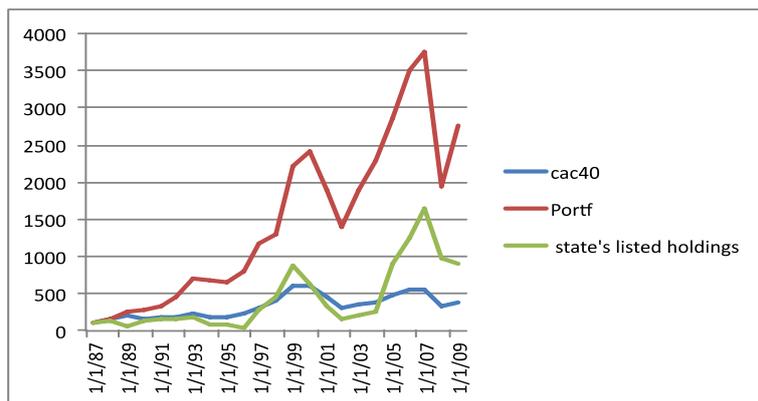


Source: Reuters and Datastream

We have a more complete measure for the value of the State's listed shares portfolio with annual frequency as provided by Banque de France. These data take into account the exact composition of the portfolio with the right weights for the whole stocks held by the State.

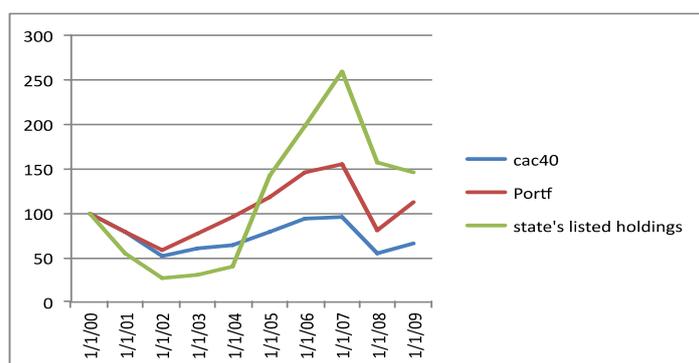
Our selection of stocks (red line in the figure 11) outperforms the real portfolio (green line) for an investment initiated in 1987 while it underperforms the actual sample if we set the year 2000 as the starting date. In both cases the two portfolios produce a higher return than the index.

Figure 11. Stock market comparison since 1987 (base 100)



Source: DataStream, Reuters and Banque de France since 1987

Figure 12. Stock market comparison since 2000 (base 100)



Source: DataStream, Reuters and Banque de France since 2000

In a study on the stock market performance of privatized firms, Obeid and Bhatti (2011) use abnormal returns in order to compare former State-owned enterprises (SOEs) to private firms. We used part of this methodology as a mean to understand the relationship between privatized firms and the stock market. According to our hypothesis, the market value of the SOEs' shares is affected by the privatization process.⁹ Abnormal returns, computed as the difference between the stock returns and the return of the stock market index, indicate under- or over-performance of firms. We used daily price data, as it was previously described, but information was available for only 10 firms. Given that the scope of our analysis is only to provide an illustration and not to make a statement on the stock market performance and its impact on the SOEs, we do not consider that the limited size of this sample might be a problem.

For most of the firms¹⁰, abnormal returns were positive, suggesting an over-performance of SOEs. Once we computed the abnormal returns, our approach consisted in comparing the average abnormal returns over a month before and after the privatization. For robustness reasons, we also use a longer time frame of six months. The following table summarizes the results. A positive difference indicates that the abnormal returns were, on average, higher in the month (or during the 6 months) preceding the privatization.

⁹ The interactions between the SOE's market value and the stock market's evolution are very intricate. The question is whether the State choses the right time to privatize the firms, with the "right time" meaning a positive trend of the stock market, or was the evolution of the stock market determined by the investors' anticipation concerning the upcoming privatization wave. Due to its complexity, this issue will not be tackled here, but it will make the object of future research.

¹⁰ The exceptions being Alstom, Areva and ICADE.

Table 2. Summary of Student's test on abnormal returns' averages

	Significant Student test 1 month	Significant Student test 6 months
Alstom	Yes – positive difference	Yes – positive difference
Areva	No	Yes – positive difference
Bull	No	No
Dassault	Yes – negative difference	No
EDF	No	Yes – negative difference
Eramet	Yes – positive difference	No
ICADE	Yes – positive difference	Yes – negative difference
Safran	Yes – negative difference	No
Total	No	No

If the aggregate level shows an over-performance of the State's portfolio, which can also account for the unexpected rise of the State's patrimony, the effect dissipates at a firm level. Indeed, the heterogeneous situation illustrated in the table above indicates a sort of shadow-value that only concerns State-owned shares.

4.3 International comparisons

In order to set up a general assessment of the subject of this study, privatizations and nationalizations in France, we should consider it from an international perspective too.

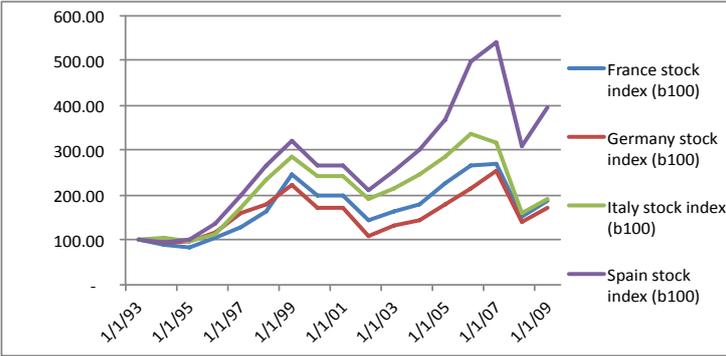
With this aim, we made two kinds of comparison. On the one hand we looked at international stock markets, on the other, we juxtaposed data on privatizations for different countries provided by the website Privatization Barometer.

We used the stock markets from a macro perspective as a major indicator of the economical environment where the State runs its investment and disinvestment strategies as a player that, we assume, could act as any other private investor.

We compared stock market indices for France, Germany, Spain and Italy using yearly data since 1985 provided by OECD 2011.

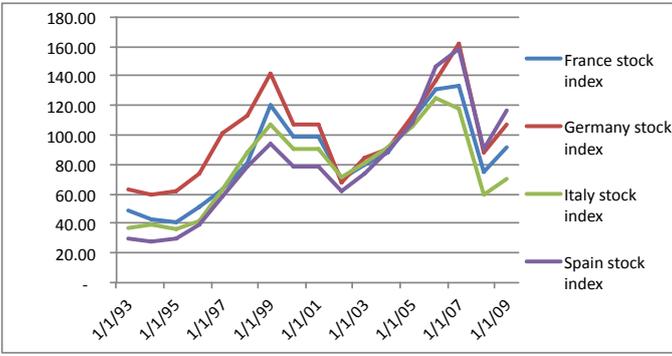
In the graph below, the values in the base year 1985 are normalized to 100. The curves describe two peaks for the four markets. The first spike occurs in 2000 when the upward trend driven by the speculative investments in the dot-com era began to decline before the bubble burst. The second peak is in 2007 when the first symptoms of the financial crisis started to show up after a four-year rally triggered mainly by expansionary monetary policy in the US.

Figure 13. International stock indices values (base 100)



Source: OECD 2011

Figure 14. International stock indices values



Source: OECD 2011

The Spanish market rallies more than the others because at the base date it had a lower value compared to the other markets as shown by the graph on the right.

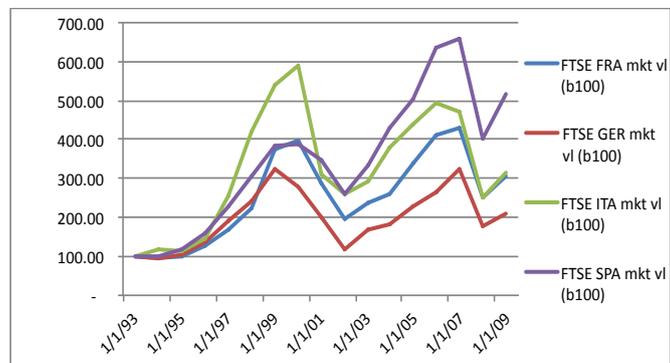
The four yearly returns related to these markets are highly correlated as displayed in table 3.

Table 3. Indices correlations

	France	Germany	Italy	Spain
France	1,00			
Germany	0,88	1,00		
Italy	0,86	0,83	1,00	
Spain	0,79	0,68	0,87	1,00

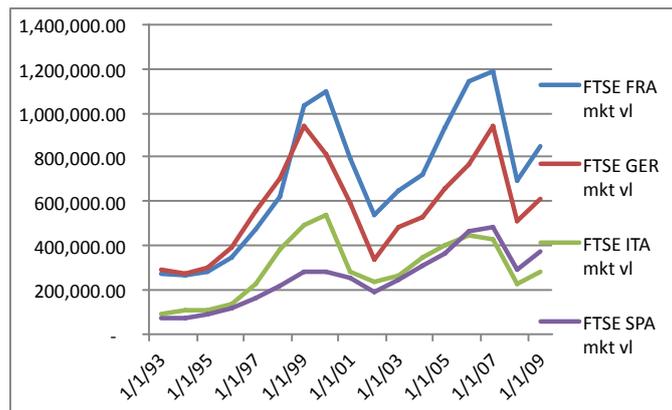
Datastream provided us with figures about total capitalization for the four markets as showed below. To have a measure that is consistent among different markets, avoiding dissimilar calculations caused by different index definitions, we used the figures reckoned by FTSE using its own indexes.¹¹

Figure 15. International stock indices capitalizations (base 100)



Source: Datastream

Figure 16. International stock indices capitalizations



Source: Datastream

¹¹ The FTSE indices are free float market capitalization weighted indices. They include constituents of the Large and Mid capitalization universe.

The Spanish market displays again the highest level of growth, whereas, the absolute values on the right exhibit a greater capitalization for France and Germany.

For each country, Privatization Barometer provided us with information such as date of the privatization, related sector, percentage sold by the State, value of the transaction in millions US\$, the method used for the sale in terms of public offer or private sale.

The chart below displays for each country the number and the value in millions of Euros of privatizations. The figures are split between the two methods, i.e. public offer or “PO” and private sale or “PS”, and the data relate to the period between 1985 and 2010.

Table 4. Number and value of privatizations

	France	Germany	Italy	Spain
TOT N PO	76	26	64	32
TOT N PS	101	170	144	77
TOT N	177	196	208	109
TOT VALUE PO	107318	58355	102103	31784
TOT VALUE PS	64110	59929	51514	16201
TOT VALUE	171429	118283	153618	47985
AVG PO	1412	2244	1595	993
AVG PS	635	353	358	210
AVG VALUE	969	603	739	440
AVG% SOLD (PO)	32%	24%	28%	26%
AVG% SOLD (PS)	75%	83%	60%	74%

Source: Author’s elaboration on Privatization Barometer

Notice that these figures are associated with each individual transaction. It means that the total number of privatizations in France as shown in the chart above, i.e. 177, takes into account each partial operation related to a company over the period. In other words, some company could be privatized in several steps and our calculation computes each one of these steps.

According to the chart, during the period considered, the Italian government displays the greatest number of total privatizations with 208 deals, while the French government piled up the highest amount in terms of value with 171 billion euros. Despite a great part of the literature about privatizations in Europe deals with the Spanish market, the total number of privatizations made by the Spanish government is approximately the 50% of the average total number for the three other countries. In fact, Spanish privatizations gathered momentum only

in 1997 and in 1998, when they attained the highest value in terms of revenues and the highest number of transactions. Shortly after, from 1999 onwards the process started to decline.¹²

The three rows on the top of the Table 4 reveal that the French government turned more often to the stock markets for its transactions compared with the other countries. In fact, France sold its shares to the market 4 times out of 10; Germany, 1 out of 10; 30% of the transactions in Italy and Spain was made on the markets.

In terms of value, or revenues for the government, the two countries that gathered more capital through privatizations are France and Italy. Again, Spain has the lowest figure when we look at the total values as well. Germany displays higher total revenues secured via private sales essentially because the number of operations of this kind is almost 7 times the number of the public offers.

The average value of a privatization realized through a sale in the markets is always higher than the value associated with private sales. France reveals the highest average value making it the major privatizing country among the four considered. Interestingly, the average value for PO in Germany, 2.2 billions euro, is much higher than the average value of private sales. While the German figure could be explained by the high fixed cost for an initial public offer, France and Italy display similar figures, respectively at 1.4 and 1.6 billions euro.

Furthermore, the average share of the holding sold through private deals is larger than the one sold on the markets in every country. Actually the median in the case of private sale is 100%. It means that when the State decides to sell its entire position, it will often do it via private deals instead of putting it on the markets.

Finally, according to these figures, the higher the value of the privatization, the more convenient is to carry it out as a public offer.

Graphs 17 to 20 show the evolution of privatizations in terms of million of euros in the four countries over time. The green lines represent the stock indexes provided by OECD 2011.¹³

From a historical point of view, it clearly appears that France did not operate at the same time of its European fellows. In fact, for Germany, Italy and Spain, the bulk of the sales are concentrated around the first market spike, the one that occurred in the late 90s. At that time,

¹² Some examples of Spanish studies in the literature are : Garcia, Anson (2006) ; Ortega-Almón, Sánchez-Domínguez (2001); Villalonga (1999); Arocena (2003); Fernández, Martínez and Inchausti (2004).

¹³ OECD 2011

these three countries recorded the highest revenues from privatizations, mainly through the markets instead of private sale transactions. In particular, Italy and Spain proved to be timed investors selling their holding just before the market collapse in 2000. Germany began its “big” selling a little bit before the others, in 1996 when markets were still rallying but its most important year in terms of revenues for privatizations was 2000.

The French government put together the largest privatizations around 2004 and 2005 when markets were rallying but it prolonged big part of the selling during the financial crisis in 2008.

Another interesting feature that stems from these graphs is that private sales have been growing in particular over the last few years when the volatility in the markets increased. It seems that governments were influenced in their choices both by the level of the markets and by the risk within the market itself.

Figure 17. Privatizations in France (mln €)

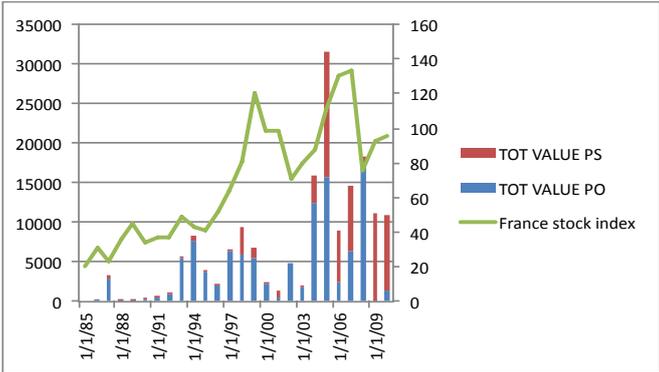


Figure 18. Privatizations in Germany (mln €)

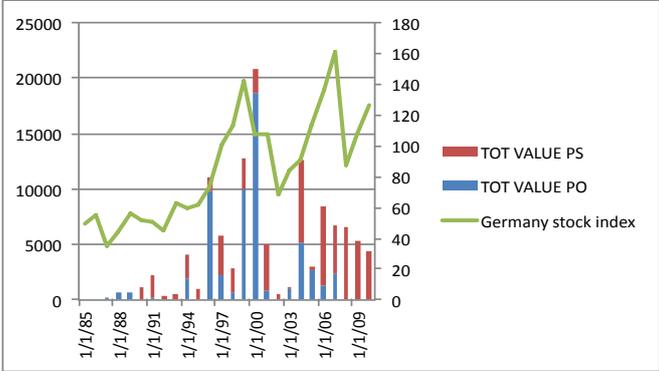


Figure 19. Privatizations in Italy (mln €)

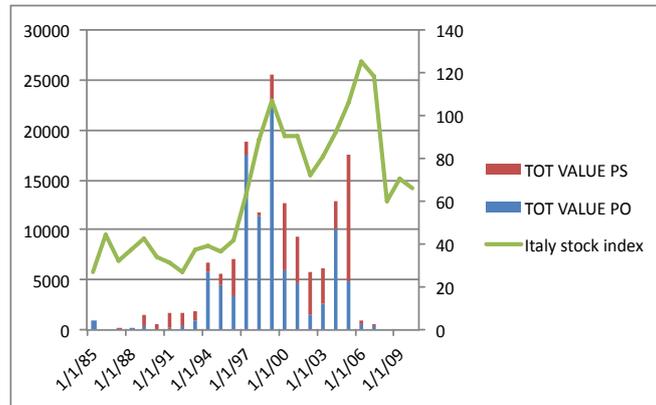
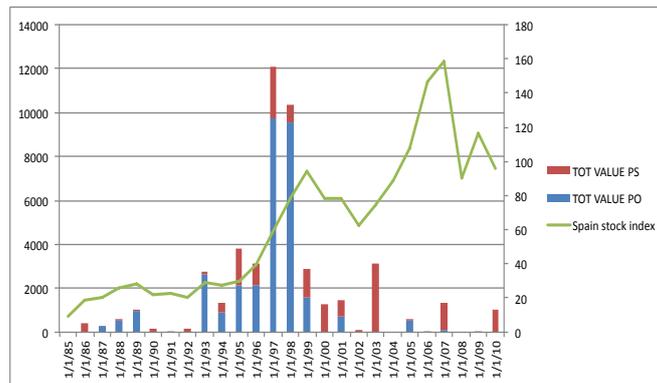


Figure 20. Privatizations in Spain (mln €)



Source. Privatization Barometer and OECD 2011

From the perspective of the quantity of privatizations, Germany is the only country that employed essentially only private sales during the whole period. While Italy and Spain concentrated most of their privatizations around the year 2000 and 1997 respectively, France displays a greater number of operations all along the period. It is the only country that has privatized through public offers every year since 1986.

Figure 21. Privatizations in France (quantity)

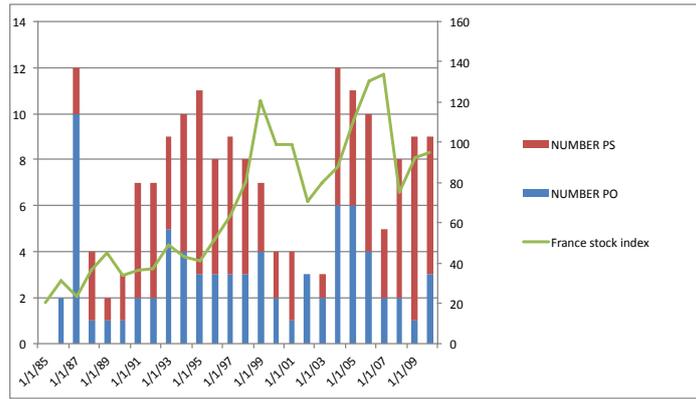


Figure 22. Privatizations in Germany (quantity)

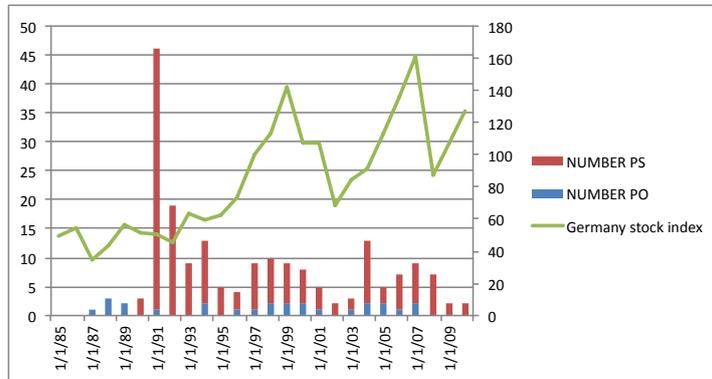


Figure 23. Privatizations in Italy (quantity)

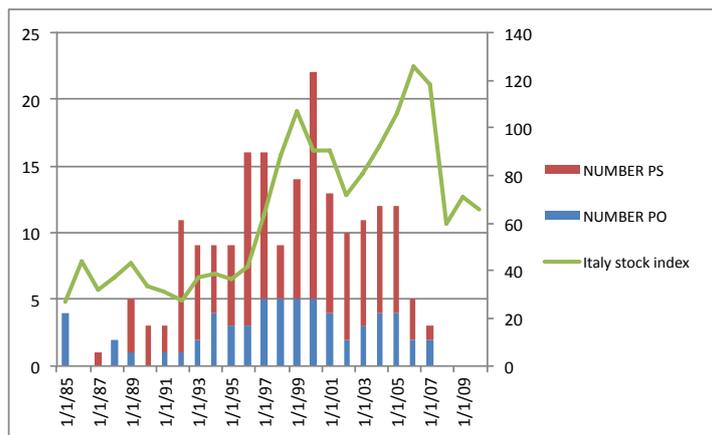
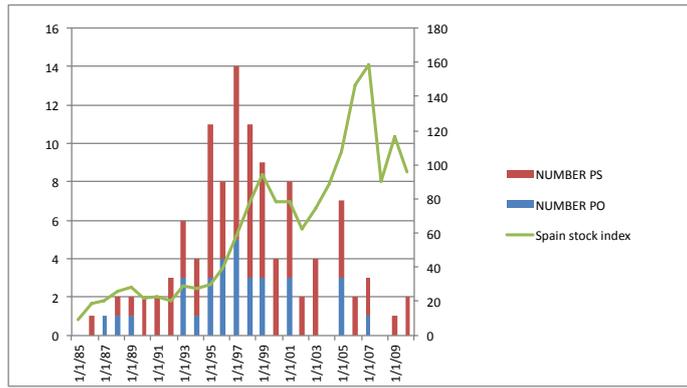


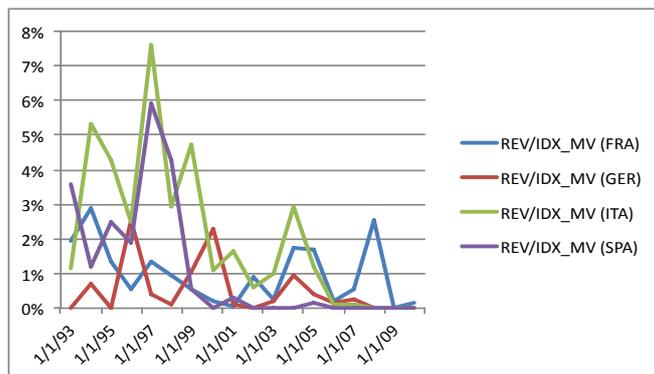
Figure 24. Privatizations in Spain (quantity)



Source: Privatization Barometer and OECD 2011

The graph below displays the evolution of a ratio calculated as the total privatization’s value coming from public offers for each year over the market capitalization for each country. This measure is a measure for the level of the State’s intervention in the markets. Apart from a peak of the value in the ratios of Germany and Spain in 1997, the overall figures are too small to trigger change in the market on an annual basis. The considered period begins in 1993 because it is the first year available for index capitalization provided by FTSE.

Figure 25. Privatizations’ impact in each market



Source: Privatization Barometer and Datastream

5. Financial assessment of nationalizations and privatizations

As mentioned before, there were very few attempts to draw a balance sheet of the State's nationalizations and privatizations and they were concentrated on the 1982-1986 period. In this paper we will try to make a cost-benefit analysis of the entire period concerned with nationalizations and privatizations, from 1936 up to 2009. Given that there are no reports that retrace all the financial flows between the State and the nationalized/privatized companies, we had to create a database that gathers most of the information.

The data was computed from different sources such as reports and research papers.¹⁴ Although privatization revenues could have been retraced from these various sources, we preferred using data from Privatization Barometer. Indeed, the advantage was a lower risk of missing any data since Privatization Barometer records every privatization transaction. It concerns the costs incurred by the State in order to become the owner of the companies and also the costs inherent to its position as a shareholder: capital endowments, grants, subsidies, recapitalizations, rescue aid, conventional contributions, treatment of financial losses, increases in capital, investment subsidies and other forms of financial assistance from the State. In this database, we also retraced the receipts earned by the State: received dividends, proceeds of partial sales and privatization net revenues.

According to our approach, we can distinguish three relevant phases:

1. **Nationalization.** The State has organized the 1982 the transfer of ownership from private to public with a set of enterprises. The shareholders of these were then compensated. In exchange for their shares, they received debt securities issued by two agencies specially created by the State: the National Fund for Banks (Caisse Nationale des Banques- C.N.B.) and the National Fund for Industries (Caisse Nationale de l'Industrie – C.N.I.). The purchase price of the nationalized industries thus corresponds to the value of compensation for the shareholder-value of securities issued even if the compensation has not resulted in an immediate disbursement.
2. **Between nationalization and privatization.** The State, once it became a unique or majority shareholder, received profits and assumed expenses. The profits consisted of: dividends, that companies paid to their shareholders, directly or indirectly; partial assignments that the State has made before privatization expenses incurred by the

¹⁴ A detailed list of the various sources can be found in the Annex.

State have also resulted from his position as a shareholder, thus some companies have indeed benefited from capital contributions and specific financial contributions.

3. **Privatization.** In the process of privatization of companies, the State collected the proceeds of this sale. Yet, it has not received all of the gross receipts resulting from privatization. The amount of commissions paid to financial intermediaries that have guaranteed the sale transactions and, in some cases, the amount of major financial transactions undertaken simultaneously, increases of capital or restructuring, have been subtracted.

The database is arranged in order to have the details by company.¹⁵ This type of “inventory” revealed that the only missing data concerns small independent banks and assurance companies. The reports and other documents at our disposal did not contain any information about how much money their privatization brought the State, nor other flow except their nationalization cost. Furthermore, no information was available concerning the benefits paid to the small shareholders or to the independent owners of aeronautics and aerospace companies such as SNECMA. The same issue concerns the mining company Charbonnages de France. Further investigations would be necessary in order to try to retrieve all the missing data, but this kind of work might prove to be extremely time-consuming, as well as unsuccessful due to the age of the data and the complexity of the bureaucracy surrounding public data. Another problem that arose was that data is often aggregated and there is no way of knowing what it contains or what was the methodology used in order to obtain the result. Whenever we stumbled upon such issues, which generally concern the State’s expenses, we preferred not to take into account the information in order to avoid the eventual overlapping with already existing detailed data. Thus, if there is a bias in the results, it is more likely to be towards underestimating the costs incurred by the State.¹⁶

Using the newly constructed database, we use the following computation, extrapolated from an accounting cost-benefit analysis, in order to assess the financial performance of the nationalization/privatization strategies :

¹⁵ Initially, the data was organized by type of flow, in four categories: cost of nationalization, expenses incurred by the State in performing its role of shareholder, dividends received and privatization receipts. Nevertheless, this approach did not allow a broader view of the missing information.

¹⁶ The amounts were transformed into constant currency in 2009 base using an online converter (http://www.france-inflation.com/calculateur_inflation.php).

Financial performance of privatization
=
Privatization receipts net (after deduction of the remuneration of intermediaries)
+
Dividends and other income received during the public sector status
-
Capital injections, debt write-subsidies paid by other public bodies and cost of special pension schemes of some enterprises
-
Cost of nationalization (purchase price + cost of financing)

5.1. Total cost of the nationalization-privatization process

We analyzed the time series of cash flows associated with each company that was the object of a privatization in France to understand if the investment made by the State was successful or not from a mere financial point of view. As described above, cash flows were represented by costs such as nationalization expenditure and recapitalizations, and benefits, like dividend payment and privatization revenue.

The period under consideration starts in 1946, with the nationalization of Renault, and ends in 2009 with partial privatizations of BNP Paribas and Société Générale. As mentioned above, Privatization Barometer provided us with the data related to the State's gains derived from privatizations with values in US dollars, thus we had to convert the currency. For data related to the years before the introduction of the euro, we used a synthetic exchange rate available on Datastream. Once we converted the prices in euro, taking into account inflation effects for the different kind of flows, we capitalized all these values to the year 2010 using yearly long-term government bond yields, with maturity longer than 10 years, provided year by year by OECD 2011.¹⁷ In other words, we assumed those rates as the opportunity cost of capital for all companies.

¹⁷ We used the OECD 2011 database.

We observed two panels of firms. Within the first one we took into account all the companies and all the data we found. We used it to calculate the actualized amount of total costs and benefits for the State during the whole period. As mentioned before, this panel underestimates the total costs coming from nationalizations expenses.

The second set of data gathers only the companies for which we had data since the beginning of the process, nationalization, to the end of it, privatization. It is made up of 14 companies: BNP Paribas, Banque Herve, Compagnie générale d'électricité, Crédit commercial de France, Crédit Lyonnais, Matra, Pechiney, Renault, Rhône Poulenc , Societe Generale, Usinor Sacilor, Compagnie de Saint-Gobain, Thomson, Bull.

Even if the amount of years with a positive net cash flow (31) is greater than the ones that have a net outflow (24), the net present value (NPV) for the whole panel, i.e, the first one, is -13 billion euros, while the value for the restricted panel is -500,936 billion euros. That's because the total cost of nationalization and recapitalizations is much bigger than the gains from dividends and privatizations. Finally, the State's total investment turns out to have a negative net present value for both total estimates.

This result implies that, from a financial point of view, the French State wasn't able to make a profitable investment as a whole. In other words, it sold its shares at a price that was lower than the one equal to the intrinsic value of the firms. At this stage, the entire process over the considered lapse of time seems to correspond to a wealth transfer from taxpayers, the citizens, to the shareholders of the privatized companies who earned a premium by purchasing shares at a value that was lower than the fair one.

We also calculated the current values of the investment for each company. The chart below displays the net present value in 2010 for each investment included in the restricted panel, i.e., the one where we grouped the companies that presented data for the whole cycle from nationalization to privatization. All the 14 investments returned a negative NPV. It means that none of them paid back the cost of nationalization.

Furthermore, we calculated the internal rate of return (IRR) for each of the 14 investments as displayed in the chart below. The IRR provides the discount rate at which an investment has a zero net present value (in $t=0$). The higher a project's internal rate of return, the more desirable it is to undertake the investment. Given that the formula to reckon the IRR does not allow for negative cash flows after the initial investment, i.e. the nationalization cost, we had

to exclude negative values associated with recapitalizations and other outflows for the following companies: Renault, Compagnie financière Hervet, Crédit Lyonnais, Usinor Sacilor, Compagnie des Machines Bull. According to our calculation, taking into account only positive cash flows, only 6 out of 14 investment projects display a positive IRR. This result indicates that the positive cash flows discounted at the IRR, are equal to the cost of the nationalization and, a priori, the investment should have been profitable for the State at least for for BNP Paribas and Société Générale that do not display negative cash flows according to our data sources.¹⁸

Notice that the negative values of the NPVs for these 6 companies are reliant on the capitalization rate that we used. For this reason, we assumed that the IRR could be a complementary measure for the profitability of the investments since it does not rely on hypothesis about the opportunity cost of capital. Furthermore, it is important to notice that the NPV is very sensitive to the rate used in th calculation.¹⁹

Finally, the average IRR for the 14 investments is -8% and this result is consistent with the general negative NPV of the State's investments of our panel.

It is important to observe that calculating a net present value on such a long period of time, 64 years for Renault and 28 years for the other companies, requires the implicit hypothesis that the investor who bore the initial cost of the project remain the same for all the period considered for the investment. Our investor here is the State that, of course, changed over time as the governments succeed one another. Thus, the margin for error given by different policies and ideologies, which we did not took into account, should be quite important.

For comparison purposes, we calculated the NPV using long-term rates that we kept constant for ten years, starting from the year of the nationalization, before changing them with the current rate each ten years up until 2010. As displayed in table 5, the net present values in 2010 are highly sensitive to the rate used for the capitalization.

¹⁸ The calculation of a Modified IRR (MIRR) that can reckon with negative cash flows following the first investment requires data such as the external cost of capital and the external reinvestment rate for which the did not have the sources.

¹⁹ Sensitivity analysis in the annex.

Table 5. Net Present Value and Internal Rate of Return (millions €)

COMPANY	2010 NPV	2010 modified NPV	IRR (positive flows only)
Renault	-392254	-376483	-0.5%
BNP PARIBAS	-3644	-16308	7.7%
Compagnie de Saint-Gobain SA	-13691	-25412	-35.5%
Compagnie financière Hervet	-750	-1589	7.6%
Compagnie générale d'électricité (CGE)	-5529	-10441	-20.4%
Crédit commercial de France (CCF)	-3959	-7387	-31.9%
Crédit Lyonnais	-5915	-10075	11.3%
Matra	-1331	-2518	-19.9%
Péchiney Ugine Kuhlman	-5854	-11929	-2.3%
Rhône Poulenc	-2334	-7234	6.7%
Societe Generale	-6171	-13105	1.9%
Thomson-Brandt	-4337	-8057	-28.1%
Usinor Sacilor	-47760	-92017	-3.8%
Compagnie des Machines Bull	-4747	-5698	0.3%

Source: Author's elaboration on different public sources.

6. Conclusion

A lesser role for the State, a move towards liberalization or simply an extra source of revenue for the State – all these aspects of privatizations have been studied extensively in the economic and political literature. However, privatizations are only the final stage of a long process of financial transactions concluded by the State and scholars often overlook this angle. With one of the most important economic, financial and social crisis burdening the economic outlook of both developed and developing countries, the role of the State is entering the debates once more nowadays. On the one hand, supporters of a stronger State advocate for banks' nationalization. On the other hand, countries that were hit the hardest by the crisis are forced to liberalize and, thus privatize, important shares of their economy in order to save their budgets. The effects of such measures are quite diverse and hard to anticipate. It is thus crucial to better apprehend all the implications of the nationalization-privatization process and past experiences offer the best means to answer the questions asked today.

This paper addresses the important issue of net value of nationalizations and privatizations and their effect on the State's patrimony. Using both a micro and macro- level analysis, we show that, besides to a serious decline in the State's patrimony over the years, the nationalizations-privatizations strategy led by the French State leads to a financial loss of 13 305 billion Euros (capitalized in 2010).

We analyze the State's patrimony evolution and underline its decline between 1978 and 2010, resulting from a drastic fall in its assets and a rise of financial liabilities. In order to capture the State's strategy, which we consider to be that of an entrepreneur, we define its entrepreneurial patrimony as the sum of its listed and unlisted shares. We show that two episodes of increase in the entrepreneurial patrimony, during 1999 and 2007, are due to share market phenomena since there is a strong correlation between the State's entrepreneurial patrimony and the share market index, but no evidence of causality.

Given the importance of the listed shares in the State's portfolio we analyze the price series of a set of companies held by the State. We show that the volatility of this portfolio is slightly lower than the volatility of the stock index. This is particularly evident during periods of stress within the market. The outperformance of the State's portfolio compared to the stock market prove that investors, on average, reward companies that are participated by the French State once they are privatized. We also reckon abnormal returns for some of these companies and prove that there is no evidence of outperformance around privatization transactions.

Comparing the data about privatizations from Germany, Spain and Italy and France, we show that this latter presents the highest total amount of sales for the period considered. Furthermore, France turned more often to the stock markets for its transactions compared with the other countries that used relatively more private sales. We observe that France did not operate at the same time of the other countries; it was a latecomer selling big part of its shares during the financial crisis in 2008. We also notice that when the State sold its holdings entirely in one transaction only, it often did it via private deals instead of putting it on the markets. Moreover, the higher the value of the privatization, the more convenient is to carry it out as a public offer.

Finally, we try to retrace the entire process of nationalizations and privatizations led by the French state, taking into account recapitalizations and dividends. We use the financial flows caused by these operations and using a simple accounting formula, we determine where the French State registered a benefit or a loss by adopting this strategy.

We are aware that there are several limits to our study. From a technical point of view, a more detailed analysis of the entrepreneurial patrimony is required in order to assess the State's strategy, whether it chose the right moment to privatize or not, but no such data is available. We encountered a similar problem when computing the net gain or loss from the nationalization-privatization strategy since data on the values nationalizations and

capitalization was very hard to find and we believe it to be incomplete. Nevertheless, even if we had all the data, we argue that result wouldn't change radically; it would only worsen the amount of the loss suffered by the State (the same is true for the pension and other benefits that we did not include in our analysis). From an ideological point of view, there are several weaknesses as well, mainly because we cannot consider the State as a normal entrepreneur. The successions of governments with different political stances alter the notion of a "sole" investor and we must not forget that the State's aim is not that of an investor, i.e. profitability.

In future research, we aim to deepen the analysis of nationalizations and privatizations, namely by adopting the firm's perspective in terms of performance and prices.

References

Albouy M. and Obeid H., 2007, "L'impact des privatisations sur la performance des entreprises françaises", *Finance Contrôle Stratégie*, vol. 10, issue 1, pp. 6-37.

Alexandre H. and Charreaux G., 2004, "Efficiency of French privatizations: a dynamic vision", *Journal of Corporate Finance*, vol. 10, issue 3.

Anastassopoulos J.-P., 1980, "La stratégie des entreprises publiques en France", Ed. Dalloz.

APE, 2004, "L'État actionnaire. Rapport 2004".

APE, 2005, "L'État actionnaire. Rapport 2005".

APE, 2006, "L'État actionnaire. Rapport 2006".

APE, 2007, "L'État actionnaire. Rapport 2007".

APE, 2008, "L'État actionnaire. Rapport 2008".

APE, 2009, "L'État actionnaire. Rapport 2009".

Arocena P., 2004, "Privatisation policy in Spain: stuck between liberalization and the protection of nationals' interests", CESifo Working Paper No. 1187.

Bauchet P., 1984, "L'évolution à long terme de la nationalisation en France", *Vingtième Siècle, Revue d'histoire*, issue 4, pp. 19-22.

Bel G. and Foote J., 2007, "Comparison of Recent Toll Road Concession Transactions in the United States and France", XREAP Working Paper No. 2007-11.

Bel G., Fageda X. and Warner M., 2010, "Is Private Production of Public Services Cheaper than Public Production? A meta-regression analysis of solid waste and water services", *Journal of Policy Analysis and Management*, vol. 29, issue 3, pp. 553-577.

Beltran A., 1992, "Gaz de France et le secteur gazier depuis 1940", *Flux* n°8, pp. 29-38.

Berne M. and Pogorel G., 2005, "Privatisation Experiences in France", CESifo DICE Report, vol. 3, issue 1, pp. 33-40.

Bizaguet A., 1983, "L'importance des entreprises publiques dans l'économie française et européenne après les nationalisations de 1982", *Revue économique*, vol. 34, issue 3, pp. 434-465.

Bizet B., 2004, "Public Property Privatization in France", ESSEC Working Papers, No DR 04009.

Bopp K., 1946, "Nationalization of the Bank of England and the Bank of France", *The Journal of Politics*, vol. 8, issue 3, pp. 308-318.

Bortolotti B., Fantini M. and Siniscalco D., 2003, "Privatisation around the world: evidence from panel data", *Journal of Public Economics*, 88, 335-366.

Bös D., 1991, "Privatization: A Theoretical Treatment", Clarendon Press, Oxford.

Brown J. D., Earle J. S. and Telegdy A., 2006, "The Productivity Effects of Privatization: Longitudinal Estimates from Hungary, Romania, Russia, and Ukraine", *Journal of Political Economy*, 114(1), pp. 61-99.

Bureau D., 1997, "La gestion des entreprises publiques", Document de travail, Ministère de l'Économie, N° 97- 5.

Carayon B., 2009, "Rapport fait au nom de la commission des finances, de l'économie générale et du plan sur la proposition de résolution sur le renforcement de la régulation financière (n° 1512) adoptée par la commission chargée des affaires européennes", Assemblée Nationale.

Catelin C. and Chatelin C., 2001, "Privatisation, gouvernement d'entreprise et processus décisionnel: une interprétation de la dynamique organisationnelle à travers le cas France Télécom", *Revue Finance Contrôle Stratégie*, vol. 4, issue 2, pp. 63-90.

Chambat P., 1990, "Service public et néolibéralisme", *Annales, Économies, Sociétés, Civilisations*, 45e année, N. 3, pp. 615-647.

Clarke J., 1977, "The Nationalization of War Industries in France, 1936-1937: A Case Study", *The Journal of Modern History*, vol. 49, issue 3, pp. 411-430.

Commission bancaire, 2002, "L'évolution du système bancaire français depuis la fin des années 1960" ; Étude du Rapport annuel de la Commission bancaire.

Cotta A., 1983, "Investissement industriel et croissance de l'économie française", *Revue économique*, vol. 34, issue 4, pp. 691-731.

Couleaud N. and Delamarre F., 2009, "Le patrimoine économique national de 1978 à 2007", *Insee Première n° 1229*,. Insee et Banque de France.

Cour des comptes, 1990, "Rapport au Président de la République", Direction des journaux officiels.

Delion A., 2007, "De l'État tuteur à l'État actionnaire", *Revue française d'administration publique*, vol. 4, issue 124, pp. 537-572.

Delion A. and Durupty M., 2009, "Chronique du secteur public économique", *Revue française d'administration publique*, 2009/1 - n° 129.

Derhy A., 1995, "Les fusions et acquisitions en France de 1959 à 1992 : évolution et caractéristiques", *Revue d'économie industrielle*, vol. 73, pp. 19-44.

Dollé M., 1978, "Forces et faiblesses des entreprises nationales", *Economie et statistique*, vol. 103, issue 1, pp 3-21.

Dore M., Kushner J. and Zumer K., 2004, "Privatization of water in the UK and France--What can we learn?", *Utilities Policy*, vol. 12, issue 1, pp. 41-50.

Douste Blazy P., 2003, "Rapport fait au nom de la commission d'enquête sur la gestion des entreprises publiques afin d'améliorer le système de prise de décision", Assemblée Nationale.

Dumontier P. and Laurin C., 2003, "The Financial Impact of the French Government's Nationalization/Privatization Strategy", EFMA 2003 Helsinki Meetings.

Du Pont P., 1961, "L'État industriel", Ed. Sirey.

Dutailly J.-C., 1984, "Aides aux entreprises: 134 milliards de francs en 1982", *Économie et Statistique*, vol. 169, issue 1, pp. 3-12.

Encaoua D. and Santini J.-J., 1989, "Les privatisations en France : éléments d'analyse et bilan", *L'Actualité économique*, vol. 65, issue 1, pp. 21-52.

Federbusch S., 1988, "Les privatisations dans l'impasse", *Revue d'économie industrielle*, vol. 44, pp. 47-65.

Fischer R., Gutierrez R. and Serra P., 2003, "The effects of privatization on firms and on social welfare: The Chilean case", Research Network Working Paper N° 456, IADB, May.

Frankenstein R., 1980, "Intervention étatique et réarmement en France 1935-1939", *Revue économique*, vol 31, issue 4, pp. 743-781.

Goldstein A., 1996, "Privatisations et contrôle des entreprises en France", *Revue économique*, vol. 47, issue 6, pp. 1309-1332.

Jenkinson T. and Mayer C., 1988, "The Privatisation Process In France And The U.K.", *European Economic Review*, vol. 32.

Jorion P., 2006, "Value at Risk: The New Benchmark for Managing Financial Risk", McGraw-Hill.

Julliot de la Morandiere L. et Bye M., 1948, "Les nationalisations en France et a l'étranger", Ed. Sirey.

Karas A., Schoors K. and Weill L., 2010, "Are private banks more efficient than public banks? Evidence from Russia" *Economics of Transition*, vol. 18, issue 1, pp. 209-244.

Keyder C., 1985, "State and Industry in France, 1750-1914", *American Economic Review*, vol. 75, issue 2, pp. 308-14.

Langohr H. and Wallet C., 1982, "Nationalisation, indemnisation et transfert de patrimoine: une etude économétrique de l'expérience française", *The academic Journal of AFFI*, vol. 3.

Langohr H. and Wallet C., 1986, "Compensation And Wealth Transfers In The French Nationalizations 1981-1982", *Journal of Financial Economics*, vol. 17, pp. 273-312.

Le Bourva J., 1979, "Les établissements de crédit en France", *Revue économique*, Vol. 30, issue 1, pp. 88-120.

Maclean M., 2008, "New rules – old games? Social capital and privatisation in France, 1986–1998", *Business History*, vol. 50, issue 6, pp. 795–810.

McKenzie D. and Mookherjee D., 2003, "Distributive Impact of Privatization in Latin America: An Overview of Evidence from Four Countries", *Economia*, vol. 3, issue 2, pp. 161-218.

McKenzie G. A., 1998, "The Macroeconomic Impact of Privatization", *IMF Staff Papers*, 45, 363-73.

Meggison W., 2010, "Privatization and finance", *Annual Review of Financial Economics* 2, 6.1-6.30.

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

Meggison W. and Scannapieco D., 2006, "The Financial and Economic Lessons of Italy's Privatization Program," *Journal of Applied Corporate Finance*, 18, pp. 56-65.

Meggison W., Nash R., Netter J. and Poulsen A., 2004, "The Choice of Private Versus Public Capital Markets: Evidence from Privatizations", *The Journal Of Finance*, vol. 6.

Meggison W., Nash R. and Van Randenborgh M., 1994, "The Financial and Operating Performance of Newly Privatized Firms: An International Empirical Analysis", *The Journal of Finance*, vol. 49, issue 2, pp. 403-452.

Morin F., 1996, "Privatisation et dévolution des pouvoirs : le modèle français du gouvernement d'entreprise", *Revue économique*, vol. 47, issue 6, pp. 1253-1268.

Myers M. G., 1949, "The Nationalization of Banks in France", *Political Science Quarterly*, vol. 64, issue 2, pp. 189-210.

National Economic Research Associates (NERA), 1996, "The Performance of Privatised Industries", A Report by NERA for the Centre for Policy Studies, Volume 2: Finance.

Naville P., Bardou J.-P., Brachet P. and Levy C., 1971, "L'Etat entrepreneur: le cas de la régie Renault", Ed. Athropos.

Nestor S. and Mahboobi L., 1999, "Privatisation of utilities and infrastructure: the OECD Experience", *Privatisation, Competition and Regulation*, OECD, Paris.

Obeid H., 2011, "La performance boursiere des entreprises françaises privatisées", CERAG (UMR CNRS 5820).

Pinkney D., 1974, "Nationalization of Key Industries and Credit in France After the Liberation", *Political Science Quarterly*, vol. 62, issue 3, pp. 368-380.

Rama S., 1989, "Distributional issues in privatization", *Federal Reserve Bank of New York*, vol. 14, issue 2, pp. 29-43.

Rivier J., 1969, "La place des entreprises publiques dans l'économie française", *Economie et statistique*, N°6, pp. 33-44.

Robson W., 1950, "Nationalised Industries in Britain and France", *The American Political Science Review*, vol. 44, issue 2, pp. 299-322.

Rosa J.-J. and Perard E., 2010, "When to privatize? When to nationalize? A competition for ownership approach", *Kyklos*, vol. 63, issue 1, pp. 110–132.

Samuel-Lajeunesse D., 2005, "L'agence des participations de l'Etat- L'Etat actionnaire", *La Revue du Trésor*, issue 7.

Stoffaes C., 1983, "Objectifs économiques et critères de gestion du secteur public industriel", *Revue Économique*, vol. 34, issue 3, pp. 577-611.

Stoffaes C. and Victorri J., 1977, "Nationalisations", Ed. Flammarion.

Sturmthal A., 1952, "The Structure of Nationalized Enterprises in France", *Political Science Quarterly*, vol. 67, issue 3, pp. 357-377.

Sturmthal A., 1953, "Nationalization and Workers' Control in Britain and France", *The Journal of Political Economy*, vol. 61, issue 1, pp. 43-79.

Torre A., 1988, "Le rôle du secteur public industriel dans le système productif français : une étude en termes d'influence productive", *Revue d'économie industrielle*, vol. 46, pp. 34-54.

Vaucher P., 1942, "The National Revolution in France", *Political Science Quarterly*, vol. 57, issue 1, pp. 7-27.

Ventenat M., 1948, "L'expérience des nationalisations. Premier bilan", Editions Politiques, Economiques et Sociales.

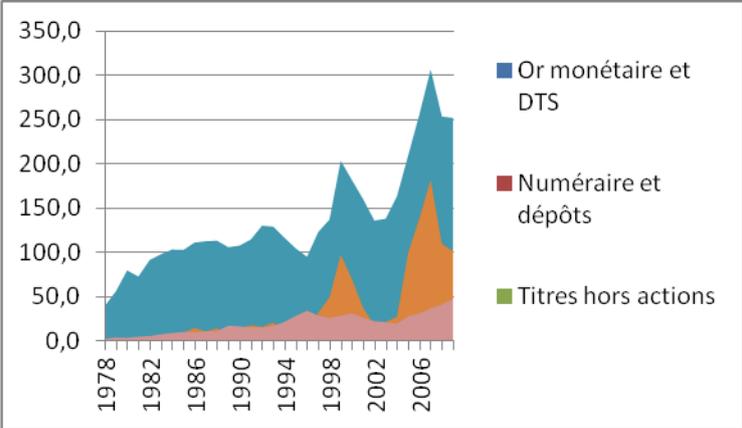
Vessilier E., 1983, "Aspects financiers des nationalisations", *Revue économique*, vol. 34, issue 3, pp. 466-495.

Willner J., 2001, "Ownership, Efficiency, and Political Interference", *European Journal of Political Economy*, vol. 17, issue 4, pp. 723-748.

Zinnes C., Eilat Y. and Sachs J., 2001, "The gains from privatization in transition economies: is "change of ownership" enough?", *International Monetary Fund Staff Papers*, 48 (Special Issue), pp. 146-170.

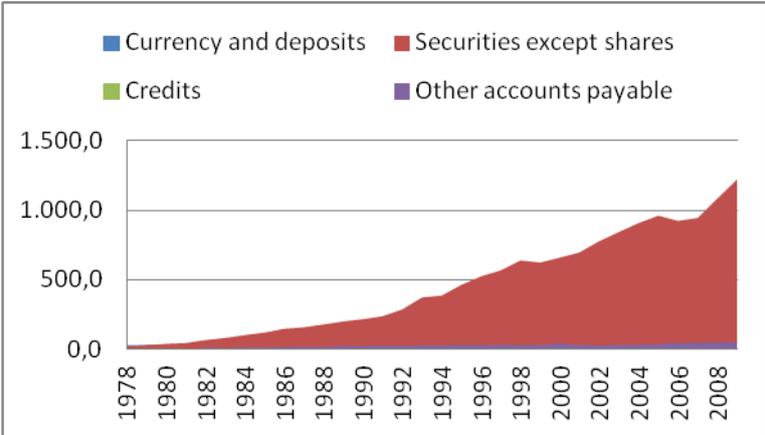
Appendix

Figure A1. Composition of financial assets owned by the State



Source: Authors' computations

Figure A2. Financial liabilities



Source: Authors' computations