

# State Ownership, Political Risk, and Asset Prices\*

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## Abstract

We study the long run performance of companies privatized in 15 European countries for the 1995-2005 period and find – as theory predicts - that the portfolio based on fully privatized companies significantly outperform portfolios formed by stocks with higher government’s residual stakes. The difference in annualized average returns ranges from 5.9 to 3.8 percent. Then we use the portfolio of fully privatized companies to capture sensitivity to political risk in multifactor asset pricing model and find some evidence supportive of the notion that political risk beta is useful to explain average returns in European countries with a long tradition of State intervention in the economy, even though political risk is somewhat incorporated in standard value and size factors.

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## 1. Introduction

The government plays a fundamental economic role in most countries. Acting on behalf the citizens of democratic societies, it can legitimately tax, spend, and regulate economic activity. The size and scope of government varies around the world and over time, and in many economies it accounts for a sizable fraction of GDP (Persson and Tabellini, 2003). Yet the broad discretionary powers enjoyed by the State create non-diversifiable sources of risk when incumbent governments raise taxes, revise legislation to cater specific constituencies, renege contracts, or exert their powers to interfere in the operating activity of firms.

The effects of the economic activity of the state are not only widespread, affecting the wealth of economic agents as single individuals (e.g. as consumers or entrepreneurs hit by an increase in income or corporate taxation) and as stakeholders in firms (e.g. as workers, shareholders, bondholders, customers) but also quite unpredictable over time.<sup>1</sup> Indeed, preferences over economic policies may change for at least two reasons. First, the incumbent government must dynamically adjust policy making to business cycles, which may require a different stance in fiscal policy and/or a more stringent regulations. Second, elections may bring new governments in office, and political shifts may generate backlash against previous policy choices and cause policy reversals. Many of these discretionary changes may take individuals and firms by surprise, being impossible to predict on the basis of a fixed structural model of the economy. This is what economists and political scientists usually define *political risk*.<sup>2</sup>

Political risk has been predominantly analyzed in emerging markets. Several studies have shown that political risk is a priced factor affecting expected returns and international market integration (Erb, Harvey, Viskanta, 1996a, 1996b; Diamonte, Liew, and Stevens, 1996; Bekaert, 1995). An important line of research has established a link between the evolution of political risk in

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<sup>1</sup> In general, government policies targeting single individuals may also affect indirectly the same individual as a stakeholder. For example, an increase in income taxation may hurt the same individual also as a worker, as a shareholder and as a customer.

<sup>2</sup> The political risk that we study is only indirectly related to the credit risk affecting sovereign bond spreads. Indeed, countries where risk of political interference is high may have a low risk of default.

developing countries and the progress of privatization programs. Perotti and van Oijen (2001) and Huibers and Perotti (1998) have shown that the actual implementation of privatization programs has contributed to building investor confidence about political commitment to market oriented reforms. The resolution of political risk obtained through sustained privatization had affected excess returns and domestic financial development.

Is political risk also potentially relevant in developed economies with mature financial markets? We claim that it is, even though in developed economies it takes more subtle forms than in emerging countries, rendering its measurement more difficult.

The typical political risk ratings reported by agencies such as Political Risk Services refer to restrictions on repatriation of profits, exchange controls or other extreme events which are rare occurrences in developed economies. The International Country Guide reports some ratings related to the risk of expropriation and contract repudiation by governments. However, in established democracies these measures do not display any significant variability across countries or over time and as such they become useless tools for empirical analysis. As Solnik (1991) notes, while this risk may appear negligible in major markets, the associate potential loss may be large.

In European markets, a significant source of political risk is associated with regulation and mergers and acquisition activity. At the heart of both factors lies the fragmentation of the European economy. While often regarded as a large geographical block comparable to the US or China, Europe is in fact a union of politically separated countries. Regulations are thus often heterogeneous and sometimes changed in an uncoordinated fashion. Cross border European M&A may quickly become controversial, and raise high profile political battles between member states.

The case triggered by the bid for Suez, the large French multiutility, by Enel, the Italian electricity company, provides an interesting example of the relevance of both political risk and regulation risk in European stock markets. At the end of February 2006, rumors spread that Enel was ready to make an hostile bid for the Suez Group. This news prompted an immediate reaction by

the French government who announced a merger plan between Suez and Gaz de France (GdF), the government controlled gas utility. The proposed deal raised the concerns of European regulators for its antitrust implications in the Belgian gas market (where Suez owned the two operators Distrigaz and Fluxys) and its effects on capital flows in the European Union. Italian government also criticized the plan for being an unfair attempt to thwart Enel's interest towards a privately owned firm. Reporting to the European Commission, the French government plainly admitted that it encouraged the two companies to accelerate merger talks.

The announced plan ignited political reactions in France. The GdF-Suez merger – de facto a re-nationalization of Suez - required the government to overcome a major legal hurdle and to engage in a long parliamentary battle to get the controversial bill amendment pass.<sup>3</sup> To gauge the support of fiercely opposed lawmakers, the French government argued its intervention helped Suez to avoid an unsolicited bid from a foreign company, while the socialist opposition party immediately announced it would have blocked the deal if it had won the presidential elections in the Spring of 2007. In July 16, immediately after the victory of the right wing candidate Sarkozy, Gaz de France SA and Suez SA shareholders approved merging the two companies, paving the way for the creation of the world's second-largest utility almost 2 1/2 years after the plan was announced. This example – and many others which can be purposely taken from the recent financial press – suggests that political interference may affect the risk and return properties of companies traded in the stock market also of developed economies.

If indeed there is a risk premium component associated with political risk, the issue becomes *how* we can measure it. We claim that a suitable proxy for political risk can be found by looking at companies which have been privatized to some degree. Our central hypothesis is that privatized companies are particularly sensitive to systematic political risk factors. First, there are historical reasons why certain firms used to be under public control and governments may try to regain political influence in these companies after privatization. Indeed, SOEs are typically large

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<sup>3</sup> GdF was partly privatized in mid-2005 under a law of 2004 requiring the government to retain at least 70 percent of the company share capital.

firms with a broad clientele, they often provide services of general interest and manage strategic infrastructures with high sunk costs. As such, they are severely exposed to political interference in the form of expropriation of quasi-rents. Furthermore, privatized firms can also be used as tools in domestic or foreign policy in order to raise fiscal revenues, to absorb unemployment, to please consumers with affordable tariffs and universal service, and to preserve national security in strategic supplies. Importantly, the pricing of the shares of privatized companies can also be designed to achieve key political objectives, notably re-election (Biais and Perotti, 2002, Jones et al., 1999). A typical channel through which governments may affect the operating activity of the firms is regulation which can be easily captured especially when regulators are not fully independent from the executive (Lyon and Mayo, 2005).

The extent to which privatized companies are exposed to systematic political risk depends broadly on the degree of political accountability and commitment provided by one country's institutional setting. However, idiosyncratic factors such as the level of residual state ownership in the firm should also matter. Perotti (1995) has shown theoretically that residual ownership in a privatized firm can serve as a commitment device to mitigate political risk. In a game with incomplete information about government's preferences, by keeping a stake a market-oriented government can credibly signal its willingness not to interfere in the operating activity in the firm because it would suffer a loss. A populist government will instead sell all its capital upfront exposing immediately the company to the risk of political interference. Then fully privatized firms should be more risky than companies where governments keep a residual stake, and as such they should yield a higher expected return.<sup>4</sup>

Some recent papers have buttressed the empirical validity of this model. Bortolotti and Faccio (2004) have showed that partly privatized companies are more valuable than fully privatized firms and interpreted the valuation differential in terms of the probability of bailout and insolvency risk. An alternative interpretation consistent with Perotti's model is that political risk is more

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<sup>4</sup> This theoretical result is consistent with concept of share ownership as a mean to mitigate agency cost initially developed by Jensen and Meckling (1976).

heavily discounted in the market value of fully privatized firms requiring a higher expected return. Jones et al. (2001) and Choi, Lee and Megginson (2006) have documented that privatization IPOs are strongly underpriced even if not significantly affected by the typical information asymmetries on company future cash flows.<sup>5</sup> Indeed, underpricing appears to be sensitive to government political orientation and underlying political risk (Dewenter and Malatesta, 1997).

In this paper, we try to test precisely the effect of residual state ownership and control on the expected returns of privatized companies. We track the evolution of government control rights in firms privatized in EU15, and study the long run performance of several portfolios built on different quartiles of government control rights for the 1995-2005 period. Using the time series multifactor regression approach of Fama-French, we find that the portfolio based on the bottom quartile of government control rights - comprising fully privatized companies - significantly outperforms portfolios formed by stocks with higher government's residual stakes. The difference in annualized average returns ranges from 5.9 to 3.8 percent.

If a political risk premium can be identified on the basis of residual state ownership in firms, the issue becomes to test whether this factor can capture sensitivity to a common and thus undiversifiable risk affecting asset prices. In other words, we are interested in testing whether a "political risk beta" explains the expected returns of a fully integrated financial area such as EU15.

A methodological problem is that there is not any accepted model to price risk in European stock markets. In a study based on the stock markets of the US, United Kingdom, Canada and Japan, Griffin (2002) shows that domestic Fama-French factors explain more time-series variation in returns than global Fama-French factors. In this direction, we estimate a multifactor asset pricing model for European stock markets including market, size, value, and sector premia (Moskowitz and Greimblatt, 1999). Following Fama and French (1994), we build 25 size/value portfolios using the constituents of a broad European index (the Dow Jones STOXX Total Market Index) and then test

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<sup>5</sup> Megginson, Nash, Netter and Schwartz (1999), Boardman and Laurin (2000), Dewenter and Malatesta (2000) document significant positive abnormal returns for privatized companies in developed countries, even if this result is not robust to alternative benchmarking based on size and book-to-market (Choi, Lee and Megginson (2006)).

alternative asset pricing models. Our analyses yield a strong rejection of the CAPM, however, the multifactor model produces intercepts which are not significantly different from zero and the political premium is positive. We conclude that a low level of residual state ownership may proxy for sensitivity to common and thus undiversifiable political risk factors, and that the notion of political risk beta is useful for a better understanding of returns of European equity markets.

The paper is organized as follows. Section 2 presents our sample of companies, documenting evolution of ultimate control by European governments in privatized firms, and Section 3 studies the performance of portfolios based on different levels of these ultimate control rights. Section 4 test several competing asset pricing models including a political risk factor. Section 5 concludes.

## **2. The sample**

Aim of the analysis is to identify the effect of government residual control rights on the returns of privatized firms. Given our interest in testing the role of political risk factor in expected returns in developed economies, we focus our analysis on EU 15 countries from 1995 to 2005,<sup>6</sup> a period characterized by substantial progress in financial market integration and the adoption of the single currency in 1999. Our sample consists of European firms privatized through public offers of shares in EU15 equity markets between January 1977 and February 2005, where privatization is defined as a transfer of ownership or voting rights from the central or local governments, or from bodies of the public administration to private investors. Eligible firms are also equity carve-outs from state-owned enterprises or privatized companies.

The list of privatization transactions on public equity markets is obtained from the *Global New Issues Databases* of the Thomson Financial platform *Securities Data Corporation* (SDC).

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<sup>6</sup> EU 15 countries are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

From 1977, which is usually considered the initial year of recent European privatization history, our source reports 1,177 privatizations in EU15 countries worth more than US\$708bn (as of end 2005). As a whole, European privatizations represent approximately a half of global privatization activity by value. Among these transactions, share issue privatizations (SIPs) account for more than 70% of total EU15 revenues (US\$499bn) and involve 220 companies.

The risk of political interference that we try to capture through residual state ownership in firms will gradually disappear as long as the government fully privatizes firms and resolves such risk through a successful and sustained transfer of control. For this reason, we exclude from our sample the companies turning five years after their full privatization. We consider a fully privatized company a former SOE where government does not hold any ultimate control right neither in terms of residual stakes nor golden shares (i.e. special powers warranted to the state or other statutory constraint).

Over the last decades, European privatized companies have been involved in a deep consolidation and heavy restructuring processes. M&A activity, delisting and name changes are tracked using the *Merges & Acquisition Database* of the same platform (SDC). In case of M&A activity, we include in the sample the resulting company - in the case of a merger - or the acquirer - in the case of a tender offer or an acquisition. We follow this rule only if the acquiring companies are listed in one or more stock markets of EU15 and if the acquirer's market capitalization is not more than double of the target company. Otherwise, the acquired targets are excluded from the sample. This sampling rule allows to take reasonably into account the transfer of political risk to private shareholders and sweep out systemic risk factors originating outside EU15. After this screening, we end up with a final sample of 190 companies.

## 2.1 The evolution of government control rights in privatized firms



The sources listed in Appendix A (Panel A) are employed to carry out a comprehensive analysis of the structure and the evolution of government control rights over the 10 year period 1994-2004 for the 220 privatized firms of our starting sample. Ultimate control rights are measured using the weakest link concept as in La Porta, Lopez-de-Silanes, and Shlifer (1999), Claessens, Djankov, and Lang (2000), Faccio and Lang (2002), and Bortolotti and Faccio (2004). For example, if the government owns 50 percent of Firm A, which owns 25 percent of Firm B, then we posit that the government controls 25 percent of Firm B (the percentage is determined by the minimum along the control chain). In case of multiple chains, control rights are given by the sum of the minimum values of all control chains.

This methodology allows us to take fully into account for indirect voting rights. Indeed, privatized firms present often quite complex pyramidal structures as the examples of Portugal Telecom (Portugal) and Distrigaz (Belgium) show clearly.

The Portuguese telecommunication sector was reformed in 1992 with the creation of the Comunicações Nacionais SPGS (CN), a State holding company responsible for the managing of all State holdings in the sector including the Post Office, Telegraphs and Telephones (Correios de Portugal) (CTT), Telefones de Lisboa e Porto (TLP), Companhia Portuguesa Rádio Marconi (CPRM) and Teledifusora de Portugal (TDP). In 1994 a single national telecommunication operator was created - Portugal Telecom SA (PT) - from the merger of Portugal Telecom, TLP and TDP. By the end of 1994 PT was completely controlled by the State.

The first privatization was carried out in June 1995, when 27.26% of the capital of PT was floated on the market via an IPO. In June 1996 the government reduced its stake to 51%. In 1997, pursuant to a new law about majority holdings by the State in strategic sectors, a further 26% of stock was transferred to the private sector. In 1999, after the fourth sale the government reduced its share to 11%, 8% directly held by the government, while 3% transferred to the fully State-owned Caixa Geral de Depositos (CGD). In year 2000, a fifth tranche was implemented shrinking residual direct stake to 1.8%. While privatization progressed, the State-owned CGD slowly increased its

holding ending up with a 5%, and two banks – Banco Espirito Santo and Banco BPI, both indirectly held by the State through PT - acquired in turn a stake in the company, creating a complex cross-holdings structure where the Government still holds indirectly about 19% of the company (see Figure 1).

**\*\*\* [Insert about here Figure 1] \*\*\***

The case of Distrigaz, the Belgian natural gas company, shows that more than one State can be simultaneously involved as shareholders in a company creating complex control structures. Distrigaz was founded as a state-owned company in 1929 by the (ICGA) Imperial Continental Gas Association and became part of the SUEZ group in the late 1980s when Financière de Suez (in 1990 renamed Compagnie de Suez and in 2001 SUEZ) acquired a controlling stake in Société Générale de Belgique which in turn held Tractebel (now SUEZ/TRACTEBEL),<sup>7</sup> the majority shareholder of Distrigaz.

At the end of 1994, the shareholding structure of Distrigaz was reorganized following the privatization of the Société Nationale d'Investissement (SNI) - the public holding company which previously held 50% percent of the gas monopoly. SNI's stake in Distrigaz was purchased by the Belgian holding company Tractebel (held by Société Générale de Belgique). In September 1994, Distrihold was created by Tractebel to hold the Distrigaz shares. Distrihold's assets belonged to Tractebel (50% plus one share) and Publigaz (50% less one share). Publigaz, was also created in 1994 as a financial holding company (held by Belgian Local Municipalities) which holds all the shares of the distribution companies. As a result, the 1994 shareholding structure of Distrigaz is as follows: Tractebel S.A. (57.53%), Distrihold (16.75%), Publigaz (16.62%), and the Belgian State (the Golden Share) - as regards to state-owned entities; Belgian Shell (private) (16.67%), and the stock market (16.71%). This new Distrigaz share structure was set in 1994, and on June 1996 the company was floated on the market.

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<sup>7</sup> Société Générale de Belgique was founded in 1822 and existed until 2003, when its then sole shareholder, Suez Lyonnaise des Eaux – who completely took over the company in 1998 - merged it with Tractebel to form SUEZ-TRACTEBEL.

**\*\*\* [Insert about here Figure 2] \*\*\***

If we look at the right side of Figure 2, we have the picture of the government control rights in Distrigaz as of end 2006. With respect to 1994, especially as the French government is involved, the situation becomes quite complex especially due to the indirect State holdings in SUEZ which through the Caisse des Dépôts et Consignations (CDC), CNP Assurances and Areva. All these control chains result in a total State control rights (Belgian and French governments combined) of 78.86%. Interestingly, while being indirectly majority controlled, direct holdings by these states are nil.

Figure 3 and in more detail Table 1 document the evolution of ultimate government control rights during the 1994-2004 period. The data show clearly that the privatization process in EU15 has been at least partial and incomplete. Surprisingly, while the number of privatized companies gradually increased, the mean and especially median control rights have also increased. Figure 3 documents a significant degree of separation of ownership and control. A half of the companies of our sample have the government as influential blockholder with a 30 percent stake, and 25 percent of the firms are under government majority control. This evidence provides further support to the fact that governments are reluctant to relinquish control in privatized firms (see Bortolotti and Faccio, 2004).

**\*\*\* [Insert about here Figure 3 and Table 1 ] \*\*\***

### **3. Performance and risk of portfolios based on residual control rights**

#### **3.1 Political risk portfolios**

The data on the evolution of government control rights (GCR) in privatized firms are used to form portfolios capturing different degrees of political risk. We look at the values of GCR in our sample of firms at the end of year  $t-1$  to build portfolios for year  $t$ . First, we construct a broad

composite portfolio including all the 190 firms which we will use to study the market and sector coverage of our stocks. Then we form two portfolios, GCRQ1 and GCRQ4, using the bottom and top quartiles of the distribution of control rights as breakpoints. Monthly value-weighted total returns (including dividends) on these portfolios are calculated from the end year  $t-1$  to the end of year  $t$  using series from *Datastream* for 1995-2005. Stock prices are expressed in Euro.

Overall, the number of privatized companies in our sample equals 190. Obviously the number of privatized companies in each year varies and tends to increase over time. Table 2 shows the country coverage of these stocks using a broad European index (the Dow Jones STOXX Total Market Index, henceforth DJ TMI) as reference. The selected benchmark has substantially increased the country coverage over time measured by the percentage of market value reported by the International Federation of Exchanges (FIBV) represented by the index. As of February 2005, DJ TMI includes 986 stocks representing more than 80 percent of total market capitalization of EU15 stock markets. As of February 2005, our composite portfolio includes 124 stocks and accounts for more than 17 percent of the total market value covered in the benchmark. In some countries, and particularly in Portugal, Austria, Italy and France, privatized companies get the lion's share of the market value, and this share tends to increase overtime. In a few countries such as the United Kingdom and Spain, the contribution of privatized companies has decreased over time. This is due to the fact that we exclude from our sample companies which have been fully privatized since more than five years. The data documents the progress of sustained processes only in a handful of European countries.

The industry coverage described in Table 3 confirms that privatized firms operate in some of the most valuable sectors such as finance, industrials, oil and gas, and telecommunication and that within these sectors, especially in oil and gas and telecommunications, they are often the largest companies.

**\*\*\* [Insert about here Table 2 and 3 ] \*\*\***

Figure 4 and Table 4 presents some preliminary evidence about the risk and return characteristics of our portfolios. The index returns of our portfolios show that an investment of €100 in the portfolio with lower government control rights (GCRQ1) in the initial period (February 1995) would have grown to €420 at the end of our period (February 2005). The same amount invested in the portfolio associated with higher government control rights (GCRQ4) would have grown to €249.<sup>8</sup> Indeed, the portfolio including the companies with lower GCR yields higher raw and annualized returns than all other portfolios and than our benchmark. Annualized returns for GCRQ1 are approximately 15 percent, against 12.7 percent of the composite, and 9.3 percent of the GCRQ4. GCRQ1 seems also to outperform the benchmark DJ TMI. A similar picture emerges when we look at raw returns and at risk-adjusted performance as measured by the conventional Sharpe ratio, namely portfolio annualized returns in excess of the German Interbank 3-month rate (our risk free rate) relative to the annualized standard deviation of excess returns. Interestingly, firms with lower government control rights show a much lower beta than partly privatized firms.

\*\*\* [Insert about here Figure 4 and Table 4 ] \*\*\*

### 3.2 Common risk factors

Several papers have tried to explain differences in stock returns in terms of sensitivity to different risk factors. We use the conventional three-factor Fama and French (1993) model, where excess returns are explained by market returns, size (proxied by the return of small minus big capitalization portfolios, *SMB*) and value (given by the high minus low book-to-market portfolios, *HML*).

We could not find any published and publicly available data for size and value factors for EU15 markets so we constructed them from scratch from the list of constituents of DJ TMI, which is available from 1994. Starting from the constituents of DJ TMI, we have followed Fama and French (1993) to construct the six relevant portfolios. The median DJ TMI market capitalization is

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<sup>8</sup> Figure 4 illustrates the stellar returns yielded by telecommunications operators, which were typically state controlled during the IT bubble.

used to form two size groups, Small and Big. The bottom 30%, middle 40%, and top 30% of book-to-market values are used as breakpoints to split the DJ TMI into three value groups, Low (Growth), Medium (Neutral) and High (Value). From the intersection of the two size and the three value groups, we construct the six building blocks, which we define Small (Big) Value, Small (Big) Neutral, and Small (Big) Growth. Finally, we use these portfolios' returns to form the *SMB* and *HML* factors.<sup>9</sup>

Table 5 shows the basic return properties of size-value portfolios. Controlling for value, we find that on average portfolios formed by smaller stocks yield higher returns, and conversely that returns tend to be monotonically increasing with value, especially in Big portfolios.

**\*\*\* [Insert about here Table 5 ] \*\*\***

In Table 6, the Fama and French (1993) three-factor model is estimated for the three portfolios based on government control rights. In this context, a significant and positive intercept (the so called Jensen's alpha) indicates abnormal performance over a broadly diversified portfolio. In our estimation, the alpha of the GCRQ1 regression is statistically significant and is 42 basis points (bp) per month, or about 5 per cent per year. We do not find any significant overperformance either in the composite, or in GCRQ4. The pricing of portfolios associated with lower government residual ownership appears to differ systematically from equivalent securities. Furthermore, this difference persists when we control for size and value in a multifactor model of performance attribution. If required returns are determined by exposure to risk factors, we tentatively conclude that privatized companies with lower government stakes are more risky than companies under government control, and that such extra returns can be attributed to the exposure to political risk affecting fully privatized firms.

**\*\*\* [Insert about here Table 6 ] \*\*\***

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<sup>9</sup> *SMB* is given by the difference between the average of the market capitalization weighted returns of the three small stocks portfolios (Small Value, Small Neutral, and Small Growth) and of the three big stocks portfolios (Big Value, Big Neutral, and Big Growth). *HML* (High minus Low) is the difference between the average of the market capitalization weighted returns of the two high book-to-market portfolios (Small Value and Big Value) and of the two low book-to-market portfolios (Small Growth and Big Growth) portfolios.

#### 4. Political risk in multifactor asset-pricing models

The previous results suggest that privatized firms appear particularly affected by political risk, and that residual government ownership (and control) may effectively mitigate such risk. In what follow we make a step further and ask whether political risk is priced in the EU15 markets. We use factor loading on residual ownership to test the existence of a “political risk beta” in European stock markets.

##### 4.1 The playing field

Aim of this section is to investigate the existence of a multi-factor model for EU15 markets encompassing political risk factors. In this direction, we form 25 size-value portfolios using the Fama and French (1993) approach and the list of constituents of the Dow Jones TMI for the 1994-2005 period as reported from Datastream. These 25 portfolios are built like the six size-value portfolios described in Section 3. In each year  $t-1$ , we sort the stocks by end year market capitalization and book-to-market and use the intersections of quintiles as breakpoints for the construction of 25 size-value portfolios for year  $t$ . As before, monthly value-weighted returns calculated on these portfolios are calculated from end year  $t-1$  to end year  $t$  using total return series.

Table 7 reports the basic risk and return properties of these portfolios. By looking at average excess returns, we observe generally a negative relation between size and return. With the exception of the fourth quintile by value, returns tend to decrease from small to big size portfolios. The relation between value and return appear more stable. Controlling for size, return increase from low to high book-to-market. Furthermore, we find the largest difference in average returns (1.25 percent) between the smallest size and highest value portfolio and the biggest and lowest value portfolio. Overall, this evidence for European stock markets is broadly consistent with the one collected by Fama and French (1993) for the US.

\*\*\* [Insert about here Table 7 ] \*\*\*

We then test several competing asset pricing models using both time-series and cross-section regressions. We start with a conventional CAPM under the assumption of full capital market integration in EU15, we then extend the market model to include the Fama-French and sector factors à la Moskowitz and Grinblatt (1999). We compute the sector monthly excess returns using the DJ STOXX TMI Industries Indices.<sup>10</sup> We finally add our political risk factor given by the portfolio GCRQ1 which uses the required returns of companies privatized more fully as a price measure of political risk.

#### 4.2 Empirical results

We run time series regressions for the 25 size-value portfolios and test the model through the application of the Fama and MacBeth (1973) approach. We estimate the betas with an expanding time series of observations starting from the 48<sup>th</sup> month in our sample and then run a series of cross sectional regression of monthly returns on the 25 test portfolios on the estimated betas. The estimated coefficients are interpreted as average unconditional risk premia. We then test the various estimated risk premia and, most importantly, the value of the intercept, which should be zero in a well-specified factor model.

Table 8 shows our empirical results. Our regressions yield a strong rejection of the CAPM, as we obtain strongly statistically significant intercepts and a negative market premium. When we add the political factor the model improves as the intercept is not different from 0 and the premium is positive, however the market premium is insignificantly different from zero. We then extend our

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<sup>10</sup> These indices use the Industry Classification Benchmark (ICB) and include: Basic Materials (Chemicals and Basic Resources); Consumer Goods (Automobiles & Parts, Food & Beverages, Personal & Household Goods); Consumer Services (Retail, Media, Travel & Leisure); Financials (Banks, Insurance and Financial Services); Health Care (Health Care Equipment & Services, Pharmaceuticals & Biotechnology); Industrials (Construction & Materials, Industrial Goods & Services); Oil & Gas (Oil & Gas Producers, Oil Equipment, Services & Distribution); Technology (Software & Computer Services, Technology Hardware & Equipment); Telecommunications (Fixed Line & Mobile Telecommunications); Utilities (Electricity, Gas, Water & Multi-utilities). More detailed information on ICB and sector classification can be found on the web at <http://www.icbenchmark.com>.



model to include Fama-French factors. The intercept is null and the most relevant factor is the value premium with a t-statistic of 3.337. The political premium is not priced in the Fama-French model. We finally extend the model to include momentum, but the basic conclusions are unchanged: the intercept is zero, both the market factor and the political factor are not priced but there is an important value premium. In our data, political risk seems to be incorporated into the value premium.

**\*\*\* [Insert about here Table 8 ] \*\*\***

## **5. Conclusions**

Is there an aggregate risk factors associated with political interference in economic activity? If so, how can we measure it? This paper has tried to address these issues in the context of European stock markets. Europe provides a rather unique laboratory, being a financially integrate geographical area with, contrary to the US, a long tradition of State ownership and direct public intervention in economic activity. Something new and interesting can be therefore learnt from the European experience which may be more difficult or impossible to grasp by analyzing US data.

We start with a systematic analysis of the risk and return characteristics of privatized stocks, relating performance to the exact evolution of ultimate government control rights in these companies. Aim of the analysis is to understand whether a portfolio formed by these companies may be used as an instrument to replicate the dynamics of a specific aggregate factor. To do that, one needs to know first what other risk factors are priced in the portfolio and this requires a study of the pricing equation of the portfolio. The analysis requires that general determinants known to affect medium and long term performance be filtered out, using the modern approach to detect general risk factors which are known to be priced in stock valuation, using the Capital Asset Pricing Model (CAPM) and its multi-factor generalizations.

We find that portfolio based on the first quartile of the distribution of government control rights, thus comprising fully privatized firms, outperform portfolios formed with partly privatized companies, while controlling for Fama and French factors. This result is in line with theoretical models of privatization under uncertainty showing that partial privatization allows governments to bear the residual risk of political interference. Lower political risk would then require lower returns.

Our results are relevant to understand financial markets after the financial crisis of 2008. During the crisis, and in the months following the crisis, governments around the world have rushed to help economic sectors which were too-interconnected-to-fail (banks) or too relevant from the point of view of employment (auto industry). This resurgence of State capitalism, realized sometimes through outright nationalization or innovative tools like hybrid capital and state guarantee, has overturned the trend of the previous twenty years, pointing to a progressive roll back of public intervention from private markets. It is crucial to understand whether this massive intervention may affect stock prices and risk premia, and the most important experience may indeed come from the diverse European context that we study in this paper. According to our results, public interventions may decrease risk premia in the short run, but may then increase them when the exit strategy is finally implemented. Our conjecture is that State intervention may not permanently cancel risk, but simply transfer it across time.

Our paper suggests other directions for future research. One interesting avenue is to try and disentangle political risk in the wide sense we have used in this paper from regulatory risk. It would be useful to classify stocks in regulated or unregulated sectors to understand whether the regulatory premium is a substantial part of the general political premium. Another possible extension lies in testing conditional factor pricing models. Perhaps political risk is not uniform over time, but may move depending on the state of the economic system and the decisions of the public sector. Improvements in these directions

are limited by the paucity of data on derivatives, which might be used to model the dynamic behaviour of risk.

## References

- Antoniou, A and H. Zhao, 2004, Long-run Post Takeover Stock Return: the Impact of Overlapping Return, Takeover Premium, and Method of Payment, *Centre for Empirical Research in Finance (CERF) Durham Business School University of Durham*.
- Bekaert, G., 1995, Market Integration and Investment Barriers in Emerging Equity Markets, *The World Bank Economic Review* 9, 75-107.
- Boardman, A.E. and C. Laurin, 2000, factors Affecting the Stock price Performance of Share Issued privatizations, *Applied Economics*, 32:11, 1451-1464.
- Bortolotti, B. and D. Siniscalco, 2004, The Challenges of Privatization: an International Analysis, *Oxford University Press*, Oxford.
- Bortolotti, B. and M. Faccio, 2004, Reluctant Privatization, *ECGI Working Paper* n. 4, 2004.
- Bortolotti, B. and M. Faccio, 2009, Government control of privatized firms, *Review of Financial Studies*, 22, 2907-2939.
- Bouwman C, Fuller K., and A. Nain, 2003, Market Valuation and Acquisition Quality: Empirical Evidence (Previous title: The Performance of Stock-Price Driven Acquisitions, *Review of Financial Studies*, forthcoming,.
- Claessens, S., S. Djankov, and L. H. P. Lang, 2000, The Separation of Ownership and Control in East Asian Corporations, *Journal of Financial Economics*, 58: 81-112.
- Choi, S.D., Lee, I. and W.L. Megginson, 2006, Do Privatization IPO Firms Outperform in the Long-Run?, *Financial Management*, forthcoming.
- Dewenter, K.L. and P.H. Malatesta, 1997, Public offerings of State-Owned and Privately-Owned Enterprises: An International Comparison, *Journal of Finance*, 52, 1659-1679.
- Dewenter, K.L. and P.H. Malatesta, 2000, State-Owned and Privately-Owned Firms: An Empirical Analysis of Profitability, Leverage and Labour Sensitivity, *American Economic Review*, 91, 320-334.
- Diamonte, R.L., Liew J.M. and R.L. Stevens, 1996, Political Risk in Emerging and Developed Markets, *Financial Analysts Journal*, 71-76.

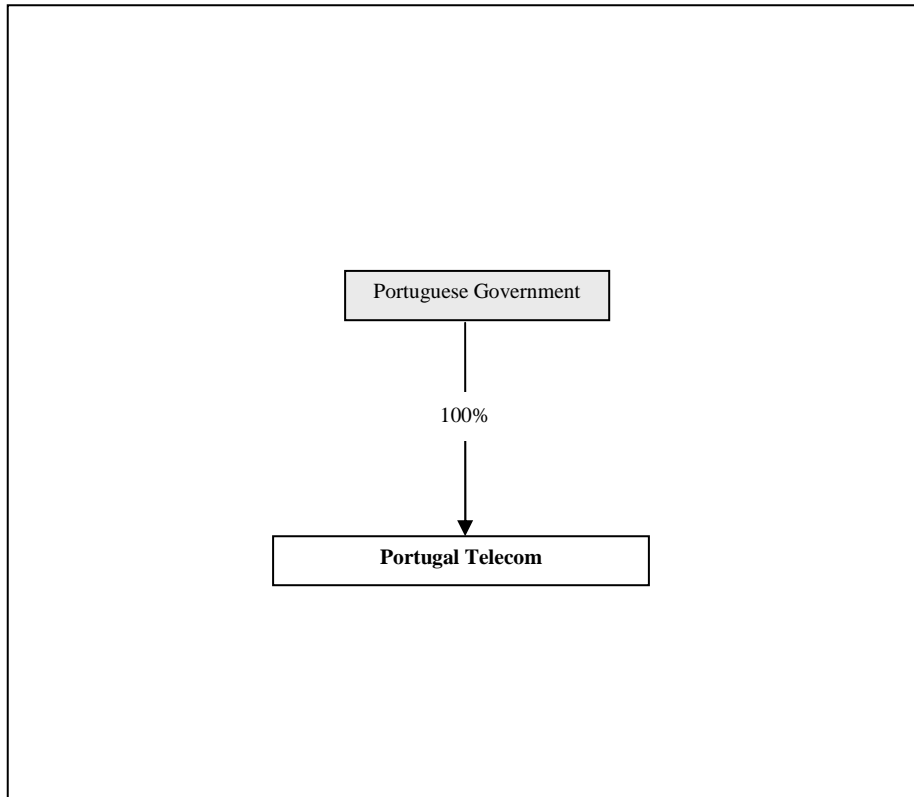
- Erb, C.B., Harvey C.R. and T.E. Viskanta, 1996a, Expected Returns and Volatility in 135 Countries, *Journal of Portfolio Management*, 32-48.
- Erb, C.B., Harvey C.R. and T.E. Viskanta, 1996b, Political Risk, Economic Risk and Financial Risk, *Financial Analysts Journal*, 29-46.
- Esfahani, H. and A. Toossi, 2005, What Determines the Extent of Public Ownership?, *forthcoming*.
- Faccio, M., and L. H. P. Lang, 2002, The ultimate ownership of western European corporations, *Journal of Financial Economics*, 65: 365-395.
- Fama, E.F. , 1998, Market Efficiency, Long-Term Returns, and Behavioral Finance, *Journal of Financial Economics*, Vol. 49, No. 3, 283-413, September 1998.
- Fama, E.F. and K.R. French, 1992, The Cross-Section of Expected Stock Returns, *Journal of Finance*, Vol. 48, No. 2, June 1992.
- Fama, E.F. and K.R. French, 1993, Common Risk Factors in the Returns on Stocks and Bonds, *Journal of Financial Economics*, Vol. 33, 3-56 North-Holland.
- Fama, E.F. and K.R. French, 1995, Size and Book-to-Market Factors in Earnings and Returns, *Journal of Finance*, Vol. 50, No. 1, March 1995.
- Fama, E.F. and K.R. French, 1996, Multifactor Explanations of Asset Pricing Anomalies, *Journal of Finance*, Vol. 51, No. 1, March 1996.
- Fama, E.F. and K.R. French, 1996, Multifactor Portfolio Efficiency and Multifactor Asset Pricing, *Journal of Finance and Quantitative Analysis*, Vol. 31, No. 4, December 1996.
- Fama, E.F. and K.R. French, 2000, Forecasting Profitability and Earnings, *Journal of Business*, 2000, vol. 73, No. 2.
- Fama, E.F. and J.D. MacBeth, 1973, Risk, Return and Equilibrium: Empirical Tests, *Journal of Political Economy*, Vol. 81, 607-36.
- Gompers P.A., Ishii J.L., and A. Metrick, 2003, Corporate Governance and Equity Prices, *Quarterly Journal of Economics*, Vol. 118, No. 1, 107-155, February 2003.
- Griffin, J.M., 2002, Are Fama and French Factors Global or Country Specific?, *The Review of Financial Studies*, Vol. 15, No. 3, 783-803.

- Gupta, N., 2005, Partial Privatization and Firm Performance, *Journal of Finance*, Vol. 60, No. 2, April 2005.
- Hiubers, F. and E.C. Perotti, 1999, the Performance of Privatization Stocks in Emerging Markets: The Role of Political Risk, *Advances in Financial Economics*, Vol 4, 1-27.
- Jones, S.L., Megginson, W.L., Nash R.C. and Netter, J.M., 1999, Share Issue Privatizations as Financial Means to Political and Economic Ends, *Journal of Financial Economics*, 53, 217-253.
- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer, 1999, Corporate Ownership around the World, *Journal of Finance*, Vol.54, 471-518.
- Lyon T. and Mayo J., 2005, Regulatory opportunism and investment behavior: evidence from the U.S. electric utility industry, *Rand Journal of Economics*, 36, 628-644.
- Megginson, W.L., 2005, The Financial Economics of Privatization, *Oxford University Press*, New York.
- Megginson, W.L., and Boutchkova, M., 2000, Privatization and the rise of global capital markets, *Financial Management*, 29, 31-76.
- Megginson, W.L., Nash, R., Netter, J. and Schwartz, A., 2000, The long-term return to investors in share issue privatizations, *Financial Management*, 29 , 67-77.
- Moskowitz, T. J. and M. Grinblatt, 1999, Do Industries Explain Momentum?, *Journal of Finance*, Vol. 54, 1249-91.
- Perotti E.C., 1995, Credible Privatization, *American Economic Review* 85, 847-859.
- Perotti, E.C. and B. Biais, 2002, Machiavellian Privatization, *American Economic Review*, Vol. 92 , No. 1, 240-258.
- Perotti, E. and P. van Oijen, 2001, Privatization, Political Risk and Stock Market Development in Emerging Economies, *Journal of International Money and Finance*, Vol. 20, 1, 43-69.
- Persson, T. and G. Tabellini, 2003, The economic effects of constitutions, *Cambridge (Mass.), MIT Press*.
- Solnik, B., 1991, International Investment, (2<sup>nd</sup> Edition), *Addison-Wesley*.

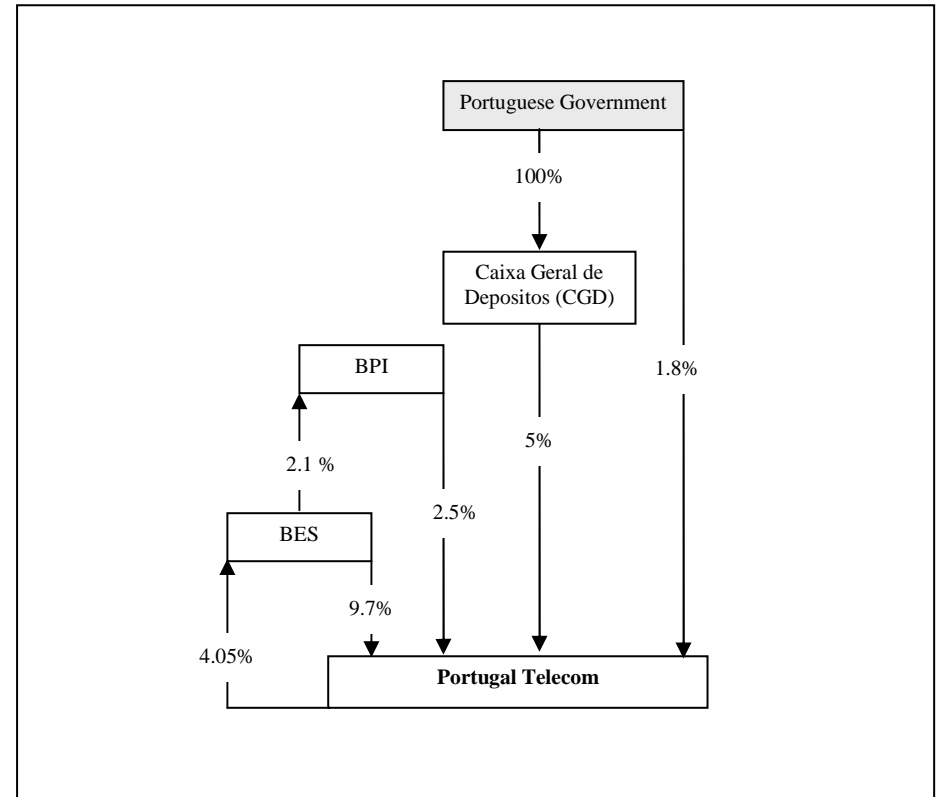
Sun Laixiang and Tao Li, 2005, State Ownership and Corporate Performance: A Quantile Analysis on China's Listed Companies, *Centre for Financial & Management Studies (CeFiMS), Discussion Paper 55*, April 2005.

**Figure 1. The evolution of the government control rights in Portugal Telecom (Portugal)**

As of the end of 1994



As of the end of 2004

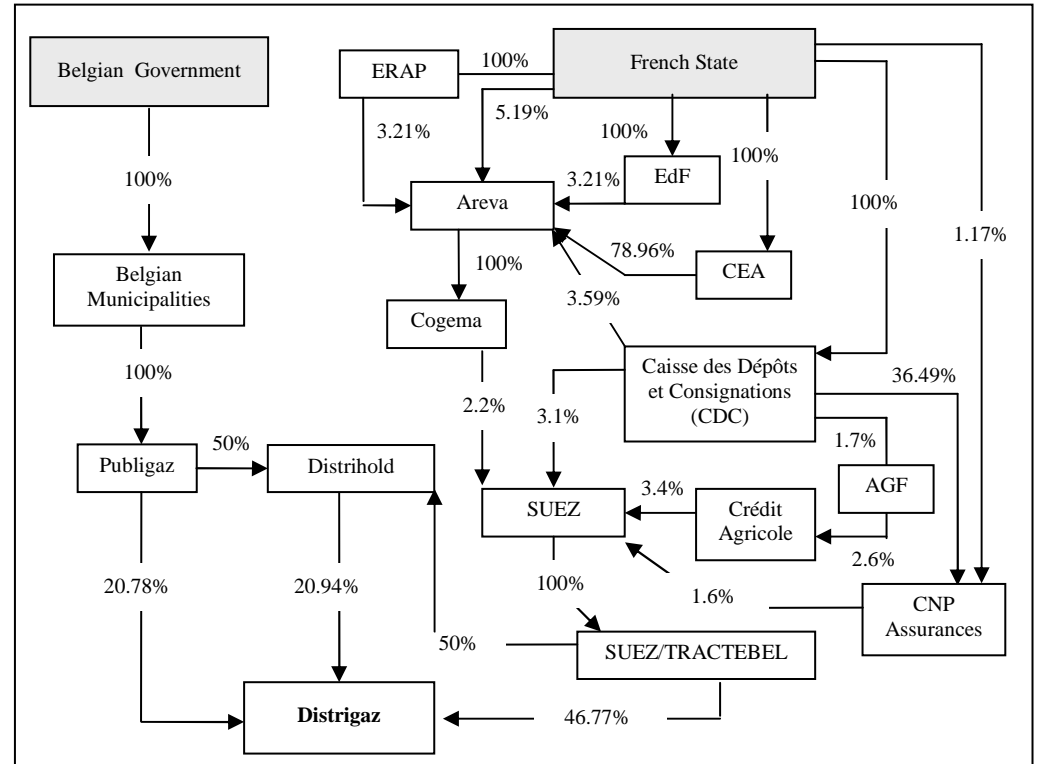
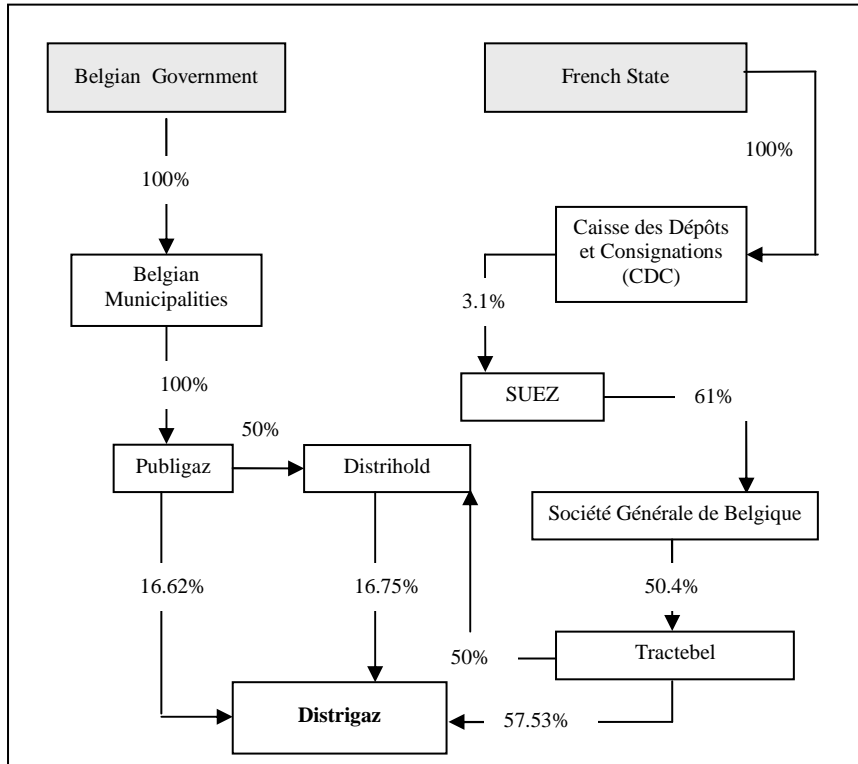




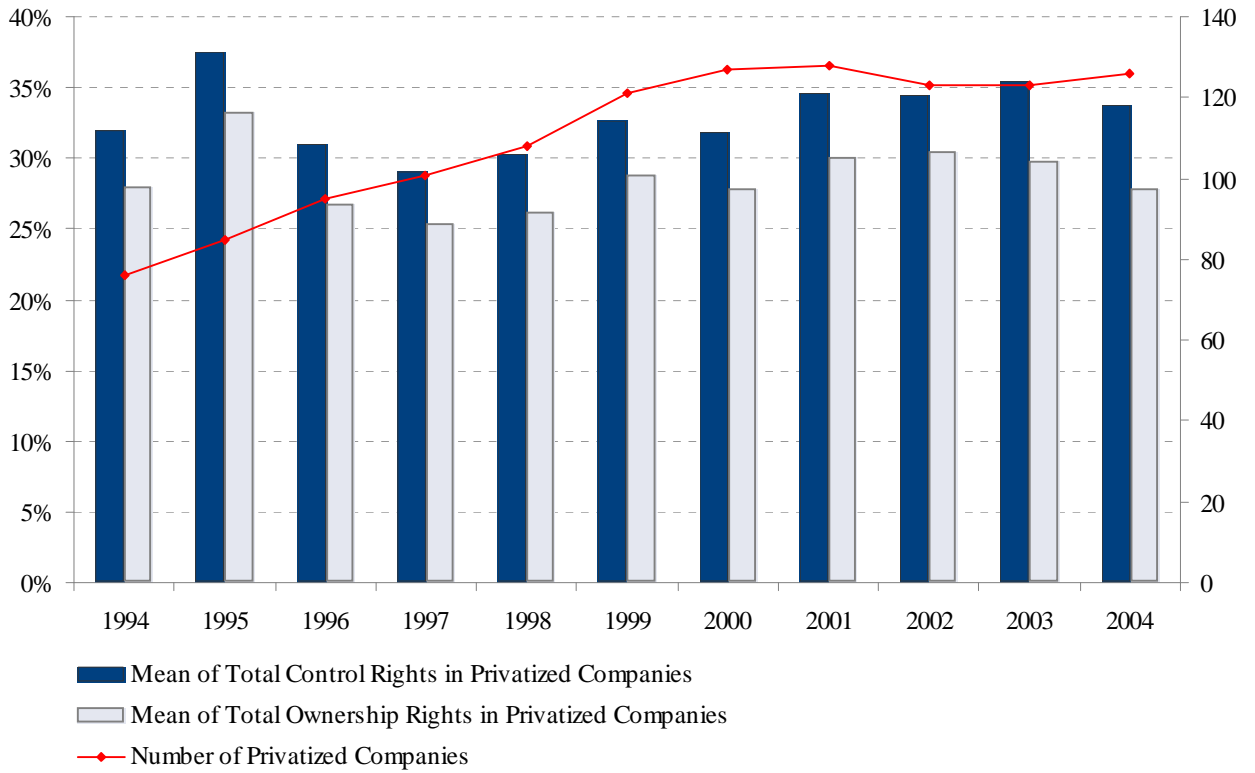
**Figure 2. The evolution of the government control rights in Distrigaz (Belgium)**

As of the end of 1994

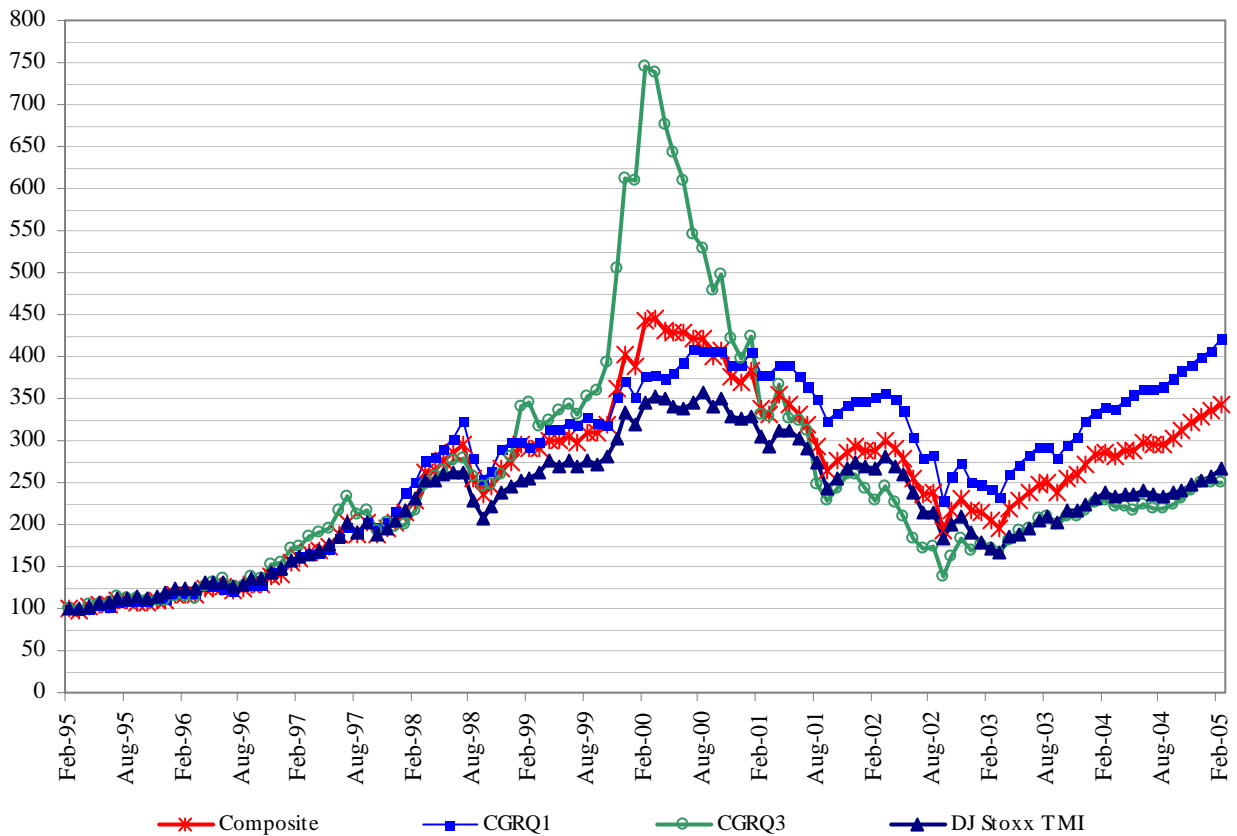
As of the end of 2004



**Figure 3. The Evolution of Government Control and Ownership Rights in Privatized Firms**



**Figure 4. Performance of Portfolios Based on Government Control Rights vs Benchmark**



**Table 1. The Distribution of Government Control Rights in Privatized Firms**

This table reports for each year  $t$  from 1995 to 2005 the total number of companies, the mean, and the quartiles of the distribution of Government Control Rights (henceforth GCR) in year  $t-I$ . GCR is the percentage of voting rights ultimately controlled by the central, local and foreign governments. Q1 and Q4 label the bottom and the top quartile of the distribution of GCR, respectively.

Year	Government Control Rights (GCR)				
	Number of Companies	Mean	Median	Q1	Q4
1994	76	0.3195	0.2325	0.0000	0.5276
1995	85	0.3758	0.3140	0.0000	0.6368
1996	95	0.3095	0.2040	0.0000	0.5325
1997	101	0.2909	0.2010	0.0000	0.5194
1998	108	0.3033	0.2366	0.0023	0.5204
1999	121	0.3271	0.2800	0.0208	0.5350
2000	127	0.3187	0.3380	0.0285	0.5271
2001	128	0.3455	0.3425	0.0560	0.5517
2002	123	0.3451	0.3234	0.0611	0.5581
2003	123	0.3541	0.3404	0.0529	0.5564
2004	126	0.3379	0.3043	0.0643	0.5126

**Table 2. Country Statistics**

This table include number of Stocks, IPOs and Delistings for the constituents of the Composite Privatization Index and the DJ STOXX TMI (Europe) that we use as benchmark. Market Value in % of STOXX is measured as the percentage of market capitalization of the privatized companies included in the Privatization Index for country  $i$  in year  $t$  over the DJ STOXX TMI market capitalization. Market Value in % of Total is measured as the percentage of the DJ STOXX TMI market capitalization for country  $i$  in year  $t$  over the domestic financial market capitalization. Totals for the DJ STOXX TMI (Europe) include Norway and Switzerland. Figures for these countries however are not displayed in the table as they are not included in our sample for privatized companies, belonging exclusively to EU15 countries. Figures reported refer to February 1995 and February 2005.

Country	Year	Composite				DJ STOXX TMI			
		Stocks	Market Value in % of STOXX	IPOs	Delistings	Stocks	Market Value in % of Total	IPOs	Delistings
Austria	1995	9	57.75	6	4	14	41.48	16	15
	2005	11	72.30			15	71.45		
Belgium	1995	-	-	2	-	19	43.42	14	4
	2005	2	14.19			29	65.81		
Denmark	1995	2	11.65	-	1	24	54.38	17	19
	2005	1	1.63			22	96.76		
Finland	1995	4	16.21	7	2	28	64.96	28	26
	2005	9	26.92			30	98.27		
France	1995	13	34.44	19	9	73	53.14	66	36
	2005	23	46.36			103	77.41		
Germany	1995	7	14.10	6	3	37	51.49	90	38
	2005	10	22.55			89	76.71		
Greece	1995	1	4.86	12	-	25	41.46	41	42
	2005	13	54.61			24	70.95		
Ireland	1995	2	7.25	2	3	10	45.90	12	6
	2005	1	2.25			16	82.76		
Italy	1995	6	15.48	25	6	32	48.37	65	17
	2005	25	48.62			80	84.58		
Luxembourg	1995	-	-	-	-	-	-	3	0
	2005	-	-			3	38.61		
Netherlands	1995	3	10.15	3	3	24	54.02	43	13
	2005	3	6.35			54	64.45		
Portugal	1995	10	83.18	11	10	12	45.00	12	14
	2005	11	87.80			10	83.07		
Spain	1995	4	45.39	9	4	25	51.39	29	0
	2005	9	10.78			54	62.03		
Sweden	1995	3	4.70	7	5	36	51.70	53	31
	2005	5	19.31			58	80.82		
United Kingdom	1995	12	8.62	5	16	131	52.02	232	59
	2005	1	0.03			304	90.98		
Total	1995	76	14.59	114	66	536	49.49	812	362
	2005	124	17.55			986	80.27		15

**Table 3. Sector Statistics**

Industries are classified according to the Industry Classification Benchmark (ICB). Basic Materials include Chemicals and Basic Resources; Consumer Goods include Automobiles & Parts, Food & Beverages, Personal & Household Goods; Consumer Services include Retail, Media, Travel & Leisure; Financials include Banks, Insurance and Financial Services; Health Care include Health Care Equipment & Services, Pharmaceuticals & Biotechnology; Industrials include Construction & Materials, Industrial Goods & Services; Oil & Gas include Oil & Gas Producers, Oil Equipment, Services & Distribution; Technology include Software & Computer Services, Technology Hardware & Equipment; Telecommunications include Fixed Line & Mobile Telecommunications; Utilities include Electricity, Gas, Water & Multi-utilities. More detailed information on sector classification can be found at <http://www.icbenchmark.com/>. Figures reported refer to February 1995 and February 2005.

Industry (ICB)	Year	Composite		DJ STOXX TMI	
		Stocks	Market Value in % of STOXX	Stocks	Sector Value in % of STOXX
<b>Basic Materials</b>	1995	6	5.70	41	7.59
	2005	8	8.87	58	5.01
<b>Consumer Goods</b>	1995	5	5.18	75	15.37
	2005	7	5.39	112	11.60
<b>Consumer Services</b>	1995	5	4.37	69	11.09
	2005	13	4.86	167	9.47
<b>Financials</b>	1995	22	16.28	111	20.30
	2005	23	12.37	225	27.99
<b>Health Care</b>	1995	1	4.91	21	7.37
	2005	1	10.56	52	8.05
<b>Industrials</b>	1995	11	3.98	149	14.82
	2005	26	16.80	210	10.15
<b>Oil &amp; Gas</b>	1995	4	19.52	19	10.54
	2005	5	31.51	29	9.84
<b>Technology</b>	1995	3	28.19	18	2.62
	2005	4	12.05	64	3.63
<b>Telecommunications</b>	1995	4	51.01	8	5.08
	2005	13	39.91	30	8.80
<b>Utilities</b>	1995	15	61.75	25	5.24
	2005	24	53.97	39	5.47
<b>Total</b>	1995	76	14.59	536	100.00
	2005	124	17.55	986	100.00

**Table 4. Government Control Rights Portfolios Returns**

This table reports the return properties of the portfolios included in the analysis. Composite is the portfolio based on all privatized firms in our sample. GCRQ1 and GCRQ4 label the portfolio based on privatized companies with GCR below and above the bottom and top quartile of the distribution of government control rights in each year as reported in Table 1.  $R$  denotes the time-series average of the monthly market capitalization weighted portfolio returns, and  $\sigma$  the standard deviation of monthly returns.  $\beta$  is the estimated coefficient of the excess return of a broad market portfolio (the Dow Jones STOXX TMI) from the regression of the excess portfolio return (relative to the German Interbank three-month rate, henceforth the risk-free rate).  $AR$  is the annualized average return. The Sharpe Ratio is the portfolio annualized return in excess of the risk-free rate relative to the annualized standard deviation of portfolio returns. The sample period is from February 1995 to February 2005.

	<b>Composite</b>	<b>GCRQ1</b>	<b>GCRQ4</b>	<b>DJ TMI</b>
$R$	1.01%	1.18%	0.75%	0.81%
$\Sigma$	5.45%	4.80%	8.09%	4.74%
$B$	1.0752	0.9042	1.2821	1.0000
$AR$	12.76%	15.05%	9.36%	10.19%
Sharpe Ratio	0.55542	0.72975	0.33872	0.47143

**Table 5. Size-value Portfolios Returns**

This table reports the return properties of the portfolios included in the analysis. At the end of each year, six portfolios are formed on size and book-to-market ratios of the constituents of the Dow Jones STOXX TMI (Europe). Small (Big) labels the stocks with market capitalization (expressed in euros) below (above) the median value. Growth, Neutral, and Value label stocks with book-to-market-ratios below the third deciles, between the third and seventh deciles, and above the seventh deciles, respectively. SMB (Small minus Big) is the difference between the average of the market capitalization weighted returns of the three small stocks portfolios (Small Value, Small Neutral, and Small Growth) and of the three big stocks portfolios (Big Value, Big Neutral, and Big Growth). HML (High minus Low) is the difference between the average of the market capitalization weighted returns of the two high book-to-market portfolios (Small Value and Big Value) and of the two low book-to-market portfolios (Small Growth and Big Growth) portfolios.  $R$  denotes the time-series average of the monthly market capitalization weighted portfolio returns, and  $\sigma$  the standard deviation of monthly returns.  $\beta$  is the estimated coefficient of the excess return of a broad market portfolio (the Dow Jones STOXX TMI) from the regression of the excess portfolio return (relative to the German Interbank three-month rate, henceforth the risk-free rate).  $AR$  is the annualized average return. The Sharpe Ratio is the portfolio annualized return in excess of the risk-free rate relative to the annualized standard deviation of portfolio returns. The sample period is from February 1995 to February 2005.

	<b>Small Value</b>	<b>Small Neutral</b>	<b>Small Growth</b>	<b>Big Value</b>	<b>Big Neutral</b>	<b>Big Growth</b>	<b>SMB</b>	<b>HML</b>
$R$	1.27%	0.89%	1.00%	1.16%	1.07%	0.56%	0.09%	0.31%
$\sigma$	5.24%	5.18%	5.77%	5.50%	5.01%	4.81%	1.87%	2.93%
$\beta$	0.9488	0.9838	1.0856	1.0713	1.0110	0.95479	-0.0063	-0.0101
$AR$	16.35%	11.22%	12.68%	14.84%	13.62%	6.93%	1.09%	3.78%
Sharpe Ratio	0.75190	0.48790	0.53100	0.60910	0.59530	0.33650	-0.23790	0.11400

**Table 6. Performance-attribution Regressions**

This table reports the estimated coefficients and associated t-statistics (in parentheses) of time series regressions based on monthly data. The dependent variables are the excess returns of the portfolios defined in Table 4.  $\beta$  is the excess return of a broad market portfolio (the Dow Jones TMI). SMB (Small minus Big) is the difference between the average of the market capitalization weighted returns of the three small stocks portfolios (Small Value, Small Neutral, and Small Growth) and of the three big stocks portfolios (Big Value, Big Neutral, and Big Growth). HML (High minus Low) is the difference between the average of the market capitalization weighted returns of the two high book-to-market portfolios (Small Value and Big Value) and of the two low book-to-market portfolios (Small Growth and Big Growth) portfolios. Excess returns are computed relative to the risk-free asset. The sample period is from February 1995 to February 2005. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> denote statistical significance at the .01, .05, and .10 levels, respectively.

	$\alpha$	$\beta$	<i>SMB</i>	<i>HML</i>	<i>Momentum</i>	<i>Adj. R2</i>
<b>Composite</b>	0.0026 [1.43]	<b>1.0665</b> <sup>a</sup> [27.72]	<b>-0.1881</b> <sup>c</sup> [-1.97]	-0.0908 [-1.37]	-0.0238 [-0.78]	87.55%
<b>GCRQ1</b>	<b>0.0042</b> <sup>c</sup> [2.25]	<b>0.9162</b> <sup>a</sup> [22.97]	-0.1289 [-1.30]	0.053 [0.73]	-0.0261 [-0.83]	82.79%
<b>GCRQ4</b>	0.0044 [0.93]	<b>1.1580</b> <sup>a</sup> [11.52]	<b>-0.5770</b> <sup>b</sup> [-2.32]	<b>-0.6426</b> <sup>a</sup> [-3.71]	-0.1242 [-1.57]	58.92%



**Table 7. Excess Returns on 25 Stock Portfolios Formed on Size and Book-to-Market Equity**

This table reports the means and the standard deviations of the excess returns on the 25 portfolios formed on size and book-to-market equity using the Fama and French (1993) approach and the list of constituents of the Dow Jones STOXX TMI for the 1994-2005 period as reported from Datastream. In each year  $t-1$ , we sort the stocks by end year market capitalization and book-to-market and use the intersections of quintiles as breakpoints for the construction of 25 size-value portfolios for year  $t$ . Monthly value-weighted returns on these portfolios are calculated from end year  $t-1$  to end year  $t$  using total return series. RF is the German Interbank three-month rate. The sample period is from February 1995 to February 2005.

Size quintile	Book-to-Market Equity (BE/ME) quintiles				
	Low	2	3	4	High
<b>Means</b>					
<b>Small</b>	1.090%	1.015%	1.299%	0.781%	1.725%
<b>2</b>	0.774%	0.819%	0.755%	0.811%	1.505%
<b>3</b>	0.901%	0.822%	0.637%	0.784%	1.434%
<b>4</b>	0.444%	0.633%	0.541%	0.782%	1.438%
<b>Big</b>	0.474%	0.664%	0.880%	1.271%	0.640%
<b>Standard Deviations</b>					
<b>Small</b>	6.713%	6.795%	6.384%	5.342%	5.372%
<b>2</b>	5.702%	5.070%	4.980%	5.304%	6.888%
<b>3</b>	6.888%	4.866%	4.946%	4.675%	5.261%
<b>4</b>	6.658%	4.313%	4.544%	4.732%	5.454%
<b>Big</b>	5.054%	4.891%	5.411%	6.014%	7.272%

**Table 8. Testing Factor Models**

This table reports the estimated coefficients and associated t-statistics (in brackets) of Fama and MacBeth (1973) cross-section regressions for the 25 portfolios described in Table 7.  $\beta$  is the excess return of a broad market portfolio (the Dow Jones TMI). SMB (Small minus Big) is the difference between the average of the market capitalization weighted returns of the three small stocks portfolios (Small Value, Small Neutral, and Small Growth) and of the three big stocks portfolios (Big Value, Big Neutral, and Big Growth). HML (High minus Low) is the difference between the average of the market capitalization weighted returns of the two high book-to-market portfolios (Small Value and Big Value) and of the two low book-to-market portfolios (Small Growth and Big Growth) portfolios. GCRQ1 labels the portfolio based on privatized companies with GCR below and above the bottom and top quartile of the distribution of government control rights in each year as reported in Table 1. Sector returns are also included. Excess returns are computed relative to the risk-free asset. The sample period is from February 1995 to February 2005. <sup>a</sup>, <sup>b</sup> and <sup>c</sup> denote statistical significance at the .01, .05, and .10 levels, respectively.

	[1]	[2]	[3]	[4]	[5]	[6]
$\alpha$	0.021 [2.218]	-0.001 [-0.091]	-0.000 [-0.051]	-0.001 [-0.130]	-0.011 [-1.063]	-0.010 [-1.131]
$\beta$	-0.018 [-1.734]	0.002 [0.196]	0.001 [0.100]	0.001 [0.170]	0.011 [0.987]	0.010 [1.031]
SMB			0.004 [1.504]	0.004 [1.538]	0.003 [1.323]	0.004 [1.564]
HML			0.012 [3.337]	0.012 [3.128]	0.012 [2.930]	0.009 [2.072]
Momentum			0.001 [0.063]	0.005 [0.348]	-0.000 [-0.035]	0.003 [0.210]
Basic Materials					0.014 [1.272]	0.016 [1.388]
Consumer Goods					0.029 [2.150]	0.029 [2.199]
Consumer Services					0.016 1.446]	0.016 [1.508]
Financials					0.020 [1.595]	0.019 [1.697]
Health Care					0.000 [0.027]	0.003 [0.338]
Industrials					0.012 [1.168]	0.008 [0.852]
Oil & Gas					0.007 [0.440]	0.009 [0.622]
Technology					0.013 [1.167]	0.009 [0.898]
Telecommunication					0.004 [0.283]	0.003 [0.247]
Utilities					0.017 [0.784]	0.013 [0.667]
GCRQ1		0.021 [1.760]		0.012 [1.057]		0.010 [0.901]

## Appendix A: Data Sources

### Panel A: Ownership Data

Country	Individual Countries Sources 1994-2004	All Countries Sources 1994-2004
Austria	1. Austrian Holding and Privatisation Agency, <a href="http://www.oia.g.at">www.oia.g.at</a>	1. Company Web Sites;
Belgium	1. Bureau Fédéral du Plan (BFP), <a href="http://www.plan.be">www.plan.be</a> , "Participations Publiques dans le Secteur Marchand en Belgique, 1997-2003".	2. Annual Reports;
Finland	1. Ministry of Trade & Industry, "State - Owned Companies" Publications, 1995, 2005.	3. 20-F Reports;
France	1. La Caisse des Dépôts, <a href="http://www.caissedesdepots.fr/FR/index.php">www.caissedesdepots.fr/FR/index.php</a> 2. L'Agence des participations de l'État (APE), <a href="http://www.ape.minefi.gouv.fr/">www.ape.minefi.gouv.fr/</a> 3. Euronext, <a href="http://www.euronext.com/home/0,3766,1732,00.html">www.euronext.com/home/0,3766,1732,00.html</a>	4. SEC, Filings & Forms (EDGAR), <a href="http://www.sec.gov/edgar.shtml">www.sec.gov/edgar.shtml</a> ;
Germany	1. KfW, <a href="http://www.kfw.de/EN_Home/index.jsp">www.kfw.de/EN_Home/index.jsp</a>	5. Hoovers Company In-dept Records;
Greece	1. Athens Stock Exchange, <a href="http://www.ase.gr/default_en.asp">www.ase.gr/default_en.asp</a> 2. Hellenic Capital Market Commission, Annual Reports 1999-2005, <a href="http://www.hcmc.gr/english/index2.htm">www.hcmc.gr/english/index2.htm</a>	6. SDC Thomson Financial;
Italy	1. MEF, Dipartimento del Tesoro, "Libro bianco sulle privatizzazioni", April 2001, 2002 and 2003. 2. MEF, Dipartimento del Tesoro, "La relazione sulle privatizzazioni", 1997-2000. 3. MEF, Dipartimento del Tesoro, "Libro verde sulle partecipazioni dello Stato", November 1992. 4. MEF, <a href="http://www.dt.tesoro.it/Aree-Docum/Partecipaz/Partecipaz/Partecipate.htm_cvt.htm">www.dt.tesoro.it/Aree-Docum/Partecipaz/Partecipaz/Partecipate.htm_cvt.htm</a> . 5. IRI (2001) "Le privatizzazioni in Italia, 1992-2000". Edited by Bemporad S. and E. Reviglio. 6. Mediobanca (2000) "Le privatizzazioni in Italia dal 1992". 7. Borsa Italiana, "Operazioni di Privatizzazione - Anni 1993-2006", <a href="http://www.borsaitaliana.it/documenti/ufficiostampa/datistorici/privatizzazioni_pdf.htm">www.borsaitaliana.it/documenti/ufficiostampa/datistorici/privatizzazioni_pdf.htm</a> 8. Consob, <a href="http://www.consob.it">www.consob.it</a>	7. Amadeus, Bureau van Dijk; 8. Lexis Nexis, Business News;
Netherlands	1. Ministry of Finance, <a href="http://www.minfin.nl/en/subjects,government-participation">www.minfin.nl/en/subjects,government-participation</a> 2. Morgan Stanley, Journal of Applied Corporate Finance, Vol. 9, Number 1, Spring 1996 3. OECD, 1998, Reforming Public Enterprises: The Netherlands.	9. Privatization Barometer, <a href="http://www.privatizationbarometer.net">www.privatizationbarometer.net</a> ;
Portugal	1. Ministry of Finance and Public Administration, Economic Research and Forecasting Department (DGEP), <a href="http://www.dgep.pt/menprinci.html">www.dgep.pt/menprinci.html</a>	10. Financial Times;
Spain	1. Sociedad Estatal de Participaciones Industriales, <a href="http://www.sepi.es">www.sepi.es</a> 2. Economic Monthly Report (1995 and 1999), La Caixa, <a href="http://www.lacaixa.comunicacions.com">www.lacaixa.comunicacions.com</a> 3. The Comisión Nacional del Mercado de Valores (CNMV), <a href="http://www.cnmv.es">www.cnmv.es</a>	11. <u>For Banks and Financial Institutions</u> : IMF Working Paper, 2005, "State-Owned Banks, Stability, Privatization, and Growth: Practical Policy Decisions in a World Without Empirical Proof", <a href="http://www.imf.org/external/pubs/ft/wp/2005/wp0510.pdf">www.imf.org/external/pubs/ft/wp/2005/wp0510.pdf</a>
Sweden	1. Ministry of Industry, Employment and Communication, Annual Report for Government-Owned Companies, 2000 - 2005, <a href="http://www.sweden.gov.se/sb/d/2106/a/19792">www.sweden.gov.se/sb/d/2106/a/19792</a>	
UK	1. "Who Owns Whom in the UK Electricity Industry", Electricity Association Policy Research, June 2003 2. <a href="http://www.ukprivatisation.com">www.ukprivatisation.com</a>	

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### **Panel B: Additional Data**

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Data sources used to identify privatized companies through public offers of shares in EU markets, and track name changes and M&A activity

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1. Thomson Financial Securities Data Corporation, SDC Platinum Global New Issues Database and Mergers & Acquisitions Database.
  2. Dow Jones Newswires, Dow Jones.
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Prices, Stock Market and Benchmarks Data

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1. DataStream for prices of privatized companies and risk free rate (Germany Interbank 3mths).
  2. WORLD FEDERATION OF EXCHANGES (FIVB) ([www.world-exchanges.org](http://www.world-exchanges.org)) for Domestic Market Capitalization of EU15 countries.
  3. STOXX Limited ([www.stoxx.com](http://www.stoxx.com)) for prices and Stock Market Data for Benchmarks.
  4. Industry Classification Benchmark (ICB) ([www.icbenchmark.com](http://www.icbenchmark.com)).
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