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State Ownership, Political Risk, and Asset Prices*

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Abstract

Political risk, i.e. the risk that a future political event will change the prospects of profitability of a given investment, has been predominantly analyzed in emerging countries. In this paper, we claim that political risk affects also asset prices in developed economies. To test this conjecture, we track the ultimate control rights for a sample of 220 firms privatized in 15 European countries and find – as theory predicts - that a portfolio based on fully privatized firms requires a premium for political risk. Then, we use this portfolio to mimic sensitivity to political risk in multifactor asset pricing models. Our results suggest that the notion of political risk beta is useful to explain average returns in European stock markets. We conclude that a common and un-diversifiable political risk factor seems to matter in countries with a long tradition of public intervention in the economy.

JEL Classification: G12, G34, L33

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1. Introduction

The government plays a fundamental 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 can also hurt economic agents 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 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). 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 worker, shareholder or customer.

Such effects are not only important and widespread, but also quite unpredictable overtime. First, change in voters' preferences may create different majorities in parliament and bring new governments in office. These political shifts can generate backlash against previous policy choices and induce policy reversals. Second, even in the course of the same legislature, powerful interest groups may push the incumbent government to implement *ad hoc* interventions and favorable policy changes hurting other stakeholders. Many of these discretionary changes in policy are impossible to predict on the basis of a fixed structural model of the economy. Thus investors must form expectations about the risk that a future political event will change the prospects of

profitability of a given investment. This is what economists and political scientists usually define *political risk*.¹

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 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.

We claim that political risk is also potentially relevant in developed economies with mature financial markets even though 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.

The recent case triggered by the bid for Suez, the large French multiutility, by Enel, the Italian electricity giant, provides an interesting example of the relevance of political 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

¹ 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.

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 owns 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.

While financially neutral, the announced plan turned politically costly. 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.² 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 already announced it would block the deal if it will win the presidential elections in spring 2007. The merger is still on hold and some Suez shareholders are still asking the management to reconsider such government-pushed merger, pointing out that the terms of the deal strongly favor the state-controlled GdF. This example – and many others which can be purposely taken from the recent financial press – suggests that political risk matters also in developed economies as the profitability of companies traded in the stock market may be affected by sudden government actions.

However, as we pointed out earlier, government intervention is pervasive and affects also assets which are *not* traded in the stock market. When we take the point of view of financial investors, we should ask what reallocations, if any, should be made to the optimal portfolio to account for political risk. Merton (1969, 1971) has shown that the optimal asset allocation depends on the level of the state variables determining the investment opportunity set. For example, as illustrated by Campbell and Viceira (2002), the share invested in stocks depends not only on the risk

² 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.

of stocks and risk aversion, but also on the covariance between stock market returns and changes in the state variables. The resulting hedging component is in general a very sizeable portion of total stock demand on the part of each rational individual. Wang (1994) has shown that a state variable representing profitability of non-traded capital may deeply affect the optimal asset allocation. This highlights that political risk is relevant for stock demand not only due to direct intervention on publicly traded companies but also because of intervention on private companies. Any non-diversifiable risk systematically affecting the investment opportunity set of investors affects demand and, in equilibrium, is recorded into stock prices and expected returns.

In our view, the issue is not *if* there is a risk premium component associated with political risk but *how* we can measure it and *how large* it is. We claim that it is possible to find a suitable proxy for political risk by looking at companies which have been privatized to some degree. Our central hypothesis is that privatized companies – such as Suez – are particularly sensitive to systematic political risk factors. Indeed, 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. First, SOEs are typically large 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. Second, 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. Finally, 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.³

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 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.⁴ Indeed, underpricing appear 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

³ This theoretical result is consistent with concept of share ownership as a mean to mitigate agency cost initially developed by Jensen and Meckling (1976).

⁴ 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)).

quartile of government control rights - comprising 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.

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 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 alternative asset pricing models. Our time series and cross section regressions yield a strong rejection of the CAPM, and a rejection either in time series or cross section tests of conventional multifactor pricing models. However, when these models are extended to include our factor loading for political risk, we obtain intercepts which are close to zero in cross section test and a positive premium for political risk. 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 countries⁵ from 1995 to 2005, a period characterized by substantial progress in financial market integration at least since 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). 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

⁵ EU 15 countries are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

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 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 Espírito 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),⁶ 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.

***** [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 2004. With respect to 1994, the Belgian and French government's indirect voting rights in the company increase from 60.47% to 84.09%, especially due to the number of indirect shareholdings held by the French State in SUEZ. All these control chains result in a total State control rights (Belgian and French governments combined) of 84.09%. Interestingly, while being indirectly majority controlled, direct holdings by these states are nil.

⁶ 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.

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 median control rights did not decrease. 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 block holder 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 of portfolios based on residual government control rights

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 €249.⁷ 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,

⁷ Figure 4 illustrates the stellar returns yielded by telecommunications operators, which were typically state controlled during the IT bubble.

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] ***

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, for each year we have followed the procedure described in Fama and French (1993) to construct the six portfolios as follows. The median DJ TMI market capitalization is 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.⁸

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.

⁸ *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.

*** [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 37 basis points (bp) per month, or about 4.4 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] ***

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 a new common (and undiversifiable) risk factor affecting the returns of EU15 markets. If so, is it possible to use our factor loading based on residual ownership to test the existence of a "political risk beta" in European stock markets? In this section, we provide some preliminary answers to these important questions.

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 much 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 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 second largest difference in average returns (1.25 percent) between the smallest-size-highest-value portfolio and the biggest-size-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.⁹ We finally add our political risk factor given by the

⁹ 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

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 factor models using F and chi-square statistics on the null of zero intercepts. We use a time series methodology and run OLS for a regression of each sector return on the returns of the risk replicating portfolios. We then consider the constants of the various equations and adopt the two statistical tests recommended by Cochrane (2006). The first is the classical Gibbons, Ross and Shanken (1989) statistic (GRS statistic) $\frac{T-N-K}{N} \left[1 + \bar{f}' \Omega^{-1} \bar{f} \right]^{-1} \alpha' \Sigma^{-1} \alpha$, where T is the number of observations, N is the number of test assets, K is the number of factors, \bar{f} is the $(K,1)$ vector of sample means of the factors, Ω is the variance covariance matrix of the factors, α is the $(N,1)$ vector of estimated constants from the OLS time-series regressions, Σ is the residual variance-covariance matrix i.e. the sample estimate of $E \varepsilon_t \varepsilon_t' = \Sigma$. The GRS statistic is characterized by a $F_{N,T-N-K}$ distribution. This statistic assumes that errors are normally distributed, i.i.d. and homoskedastic.

It is possible to allow for more general errors (correlated over time and heteroskedastic) by adopting the following test $\alpha' \text{var}(\alpha)^{-1} \alpha$, which is distributed χ_N^2 where $\text{var}(\alpha)$ is the upper-left

corner of $\text{var} \begin{bmatrix} \alpha \\ \beta \end{bmatrix} = T^{-1} d^{-1} S d^{-1}$ where $d = - \begin{bmatrix} 1 & \bar{f}' \\ \bar{f} & \text{Eff}' \end{bmatrix} \otimes I_N$ and S is the long run covariance

matrix (see Cochrane (2006) page 234). A simplified version of the chi square test can be obtained assuming that the errors are not affected by heteroskedasticity or autocorrelation. This test is

& 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..>

$T \left[1 + \bar{f}' \bar{\Omega}^{-1} \bar{f} \right]^{-1} \alpha' \Sigma^{-1} \alpha$. In the tables, we will refer to the latter chi square test as “specific” and to the former chi square test as “general”.

We test the model also through the application of the Fama and MacBeth (1973) approach. We estimate the betas with an expanding time series of observations starting from the 48th 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, both in time-series and in cross section tests. In the cross section we obtain strongly statistically significant intercepts and a negative market premium. We then extend our model to include Fama-French factors and also reject the model even though the overall performance is somewhat better than the simple CAPM. The F test does not reject the model at 1% but rejects at 5%. The intercept is not significant but the market premium is zero. The most relevant factor is the value factor, with a strong t test of 3.231.

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

When factor loadings for sectors are included, our estimations yield similar results. The cross section regressions measure four statistically significant sector premia.

We finally add to this last multifactor model with the return of our GCRQ1 portfolio, which should capture the sensitivity to political risk. The time series evidence is still negative, even though the evidence from the cross section tests is more positive. The intercept is not significantly different from 0, the market premium is non-existent, the value premium is confirmed. Interestingly, there is a positive average premium on GCRQ1 while sectors disappear, swept out by the political premium.

Table 9 reports the estimated coefficients of our time series estimation of the 25 size-value portfolios. Statistically significant size and value premia appear 18 and 15 regressions, respectively, even if size does not seem to matter the cross-section of returns. Factor loadings for the financial, industrial, consumer service, and telecommunication sectors have some explanatory power, confirming the evidence from cross-section tests. Five out of 25 portfolios returns are significantly and in most cases positively affected by our political risk factors. No clearly discernible pattern emerges in the size or value characteristics of these portfolios. This evidence suggests that a new aggregate factor related to political risk may matters in the pricing of European stocks, and that sensitivity to this factor can be suitable captured by the returns of fully privatized companies. The table also points out that the rejection of the model derives mostly from the problems associated with pricing of value portfolios portfolios, as most of the significant intercepts in the time series regressions are concentrated in the column describing the results of the high book-to-market portfolios.

***** [Insert about here Table 9] *****

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. The focus on Europe is interesting, due to its being a unified geographical area with a long tradition of state ownership and direct public intervention in economic activity, contrary to the US. Something new and interesting can be therefore learnt from the European experience which may be more difficult or impossible to get 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.

Importantly, the estimation of the portfolio of fully privatized firm fails to explain an important component of the variability. So we advance the hypothesis about the existence of a “political risk beta” connected with the privatized firms. In this direction, we estimate multifactor asset pricing models for European stock markets. We strongly reject both the CAPM, the Fama-French models, and its extension with sectors. When our political risk portfolio is included as an additional factor the overall model is still rejected, but the new portfolios substitute out several sector portfolios. In the cross section of expected returns, it carries the only significant premium together with the value portfolio. The time series tests show that it is hard to price the value portfolios. However, our political premium contributes significantly to the overall performance of the multifactor model and to a better understanding of how risk is priced in countries with a long tradition of state intervention in the economy.

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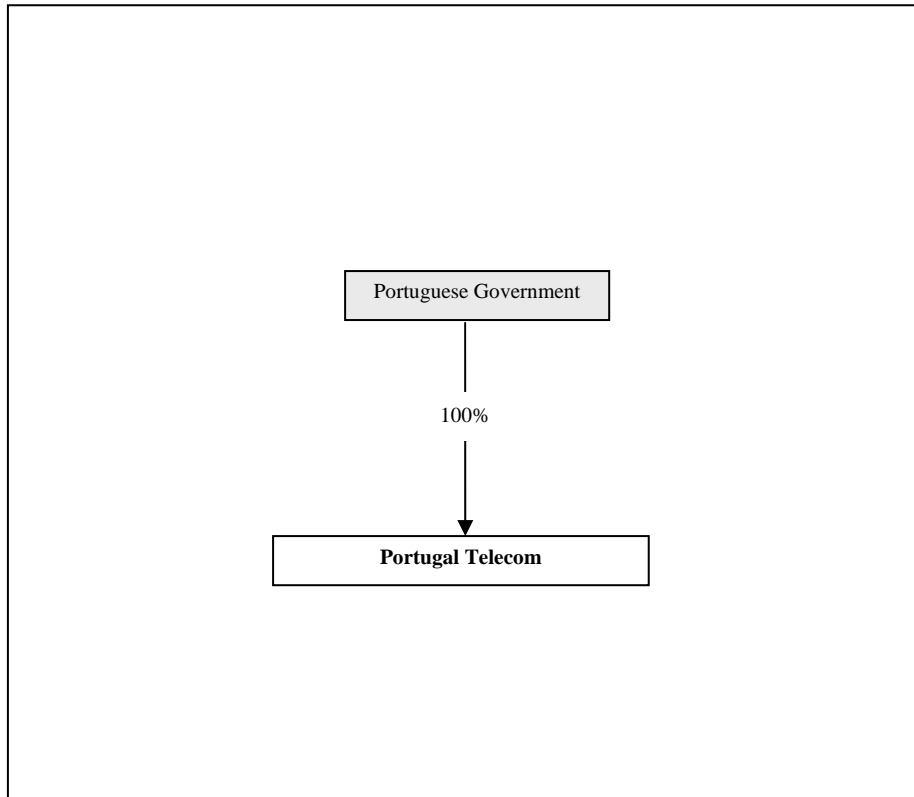
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Figure 1. The evolution of the government control rights in Portugal Telecom (Portugal)

As of the end of 1994



As of the end of 2004

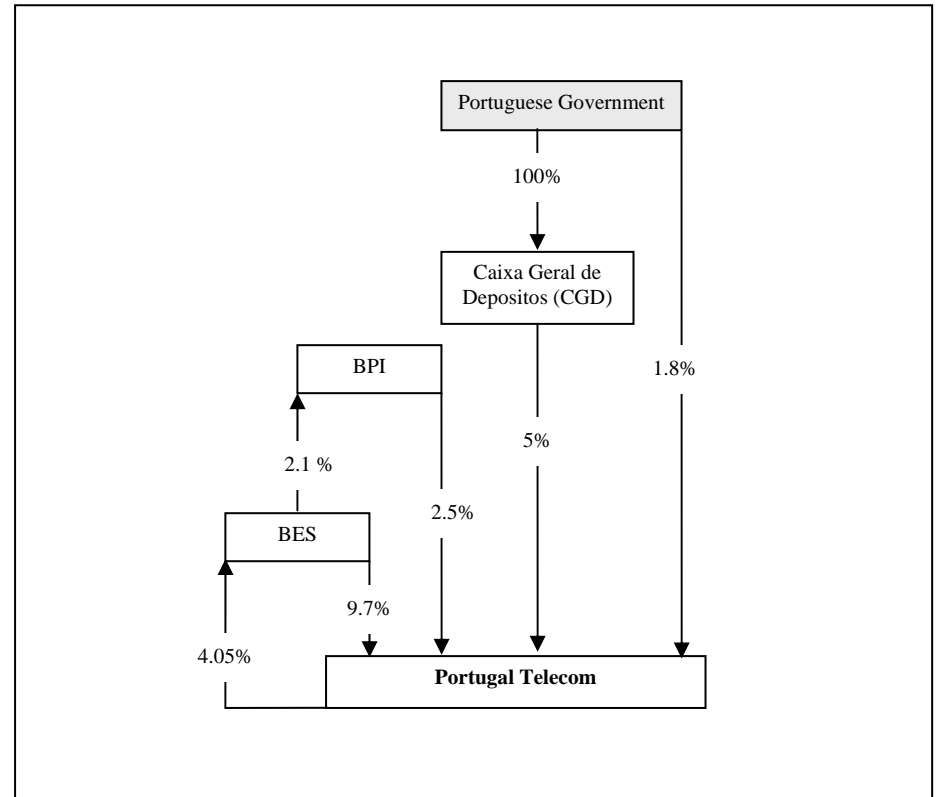


Figure 2. The evolution of the government control rights in Distrigaz (Belgium)

As of the end of 1994

As of the end of 2004

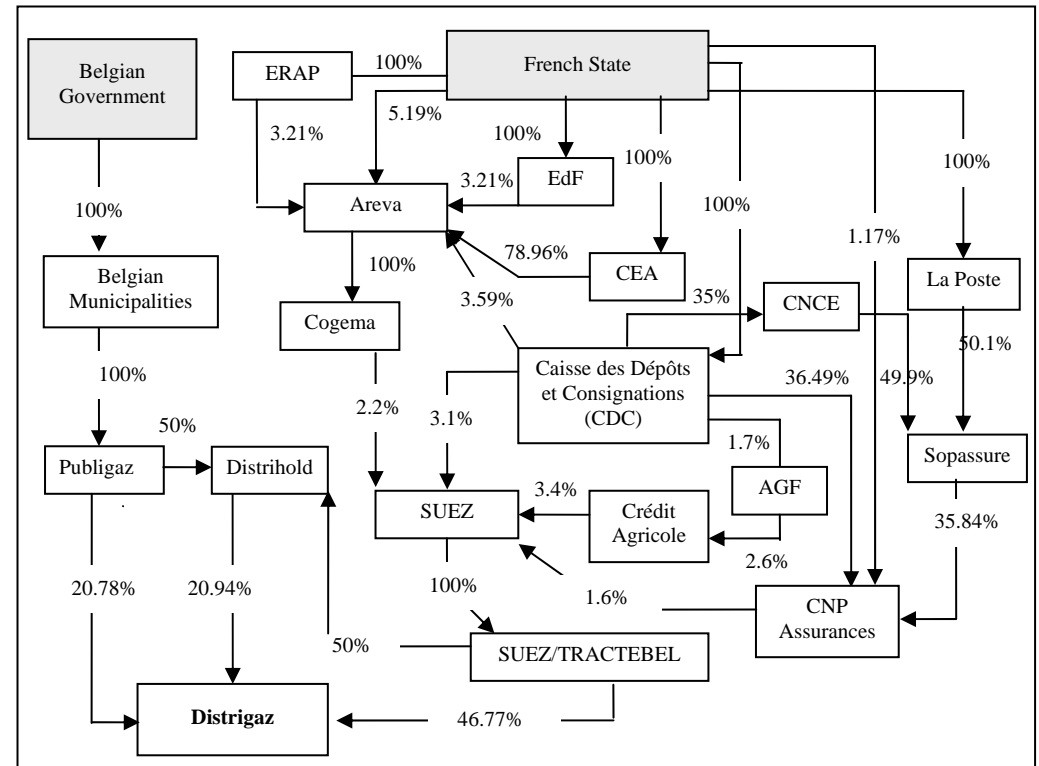
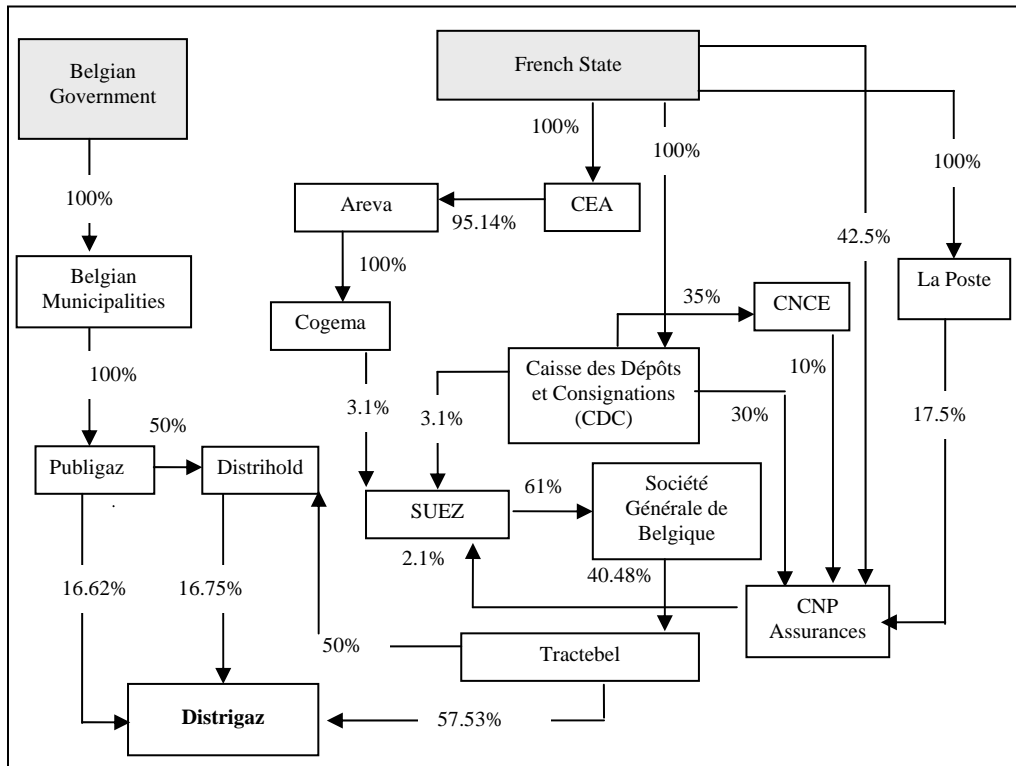


Figure 3. The Evolution of Government Control and Ownership Rights in Privatized Firms

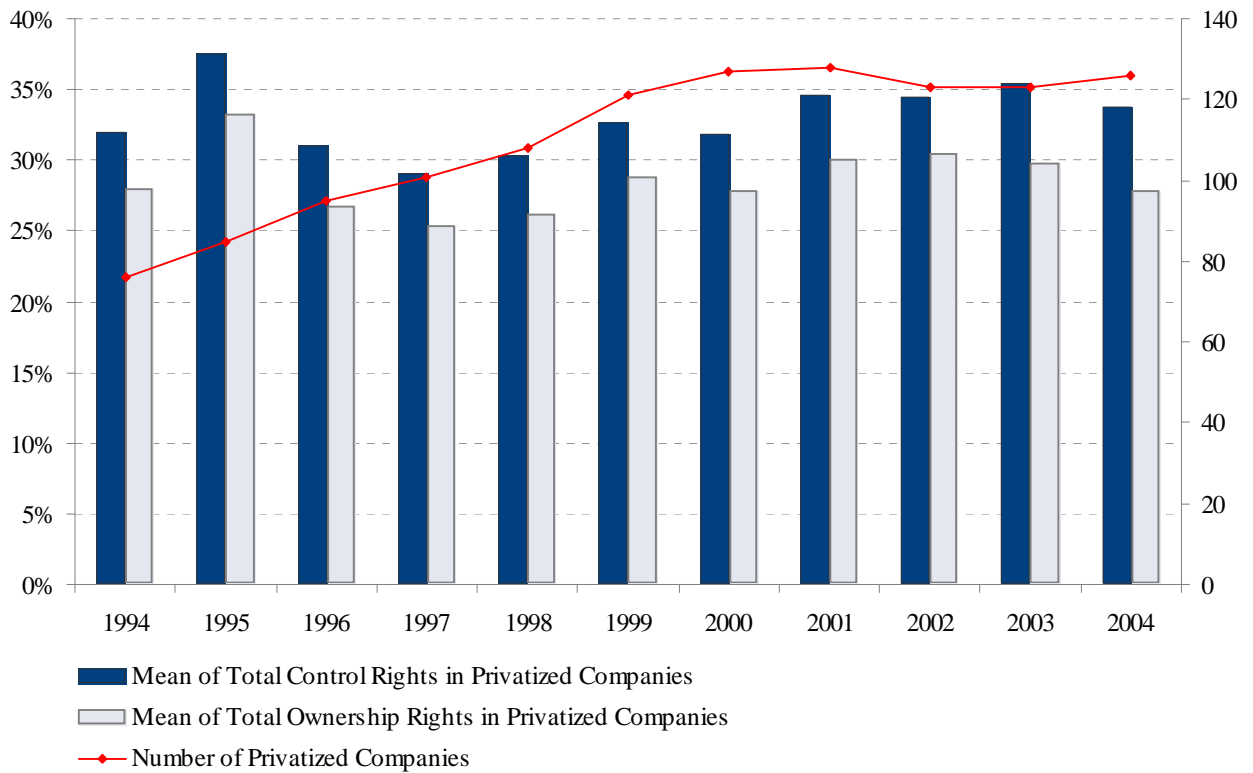


Figure 4. Performance of Portfolios Based on Government Control Rights vs Benchmark

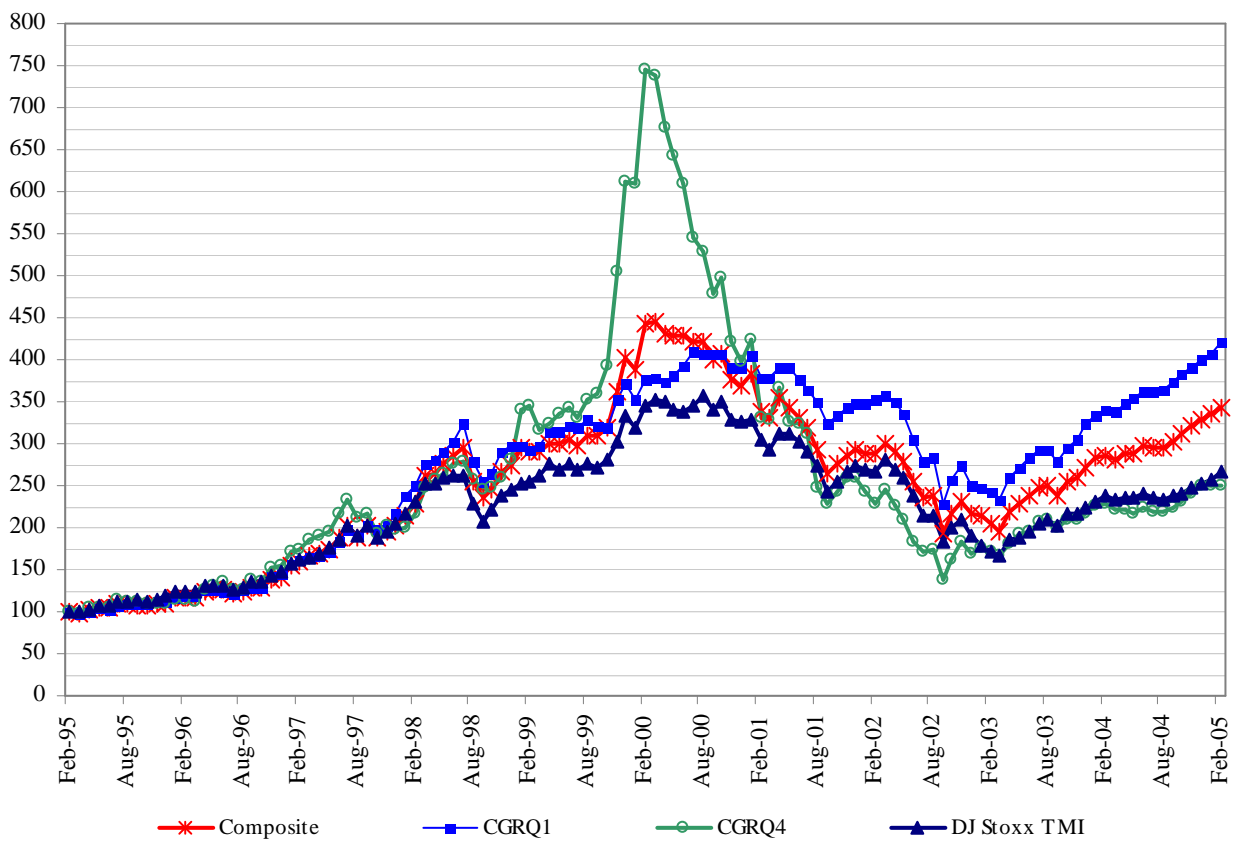


Table 1. The Distribution of Government Control Rights in Privatized Firms

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
Basic Materials	1995	6	5.70	41	7.59
	2005	8	8.87	58	5.01
Consumer Goods	1995	5	5.18	75	15.37
	2005	7	5.39	112	11.60
Consumer Services	1995	5	4.37	69	11.09
	2005	13	4.86	167	9.47
Financials	1995	22	16.28	111	20.30
	2005	23	12.37	225	27.99
Health Care	1995	1	4.91	21	7.37
	2005	1	10.56	52	8.05
Industrials	1995	11	3.98	149	14.82
	2005	26	16.80	210	10.15
Oil & Gas	1995	4	19.52	19	10.54
	2005	5	31.51	29	9.84
Technology	1995	3	28.19	18	2.62
	2005	4	12.05	64	3.63
Telecommunications	1995	4	51.01	8	5.08
	2005	13	39.91	30	8.80
Utilities	1995	15	61.75	25	5.24
	2005	24	53.97	39	5.47
Total	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 σ the standard deviation of monthly returns. β 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.

	Composite	GCRQ1	GCRQ4	DJ TMI
R	1.01%	1.18%	0.75%	0.81%
σ	5.45%	4.80%	8.09%	4.74%
β	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 σ the standard deviation of monthly returns. β 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.

	Small Value	Small Neutral	Small Growth	Big Value	Big Neutral	Big Growth	SMB	HML
R	1.27%	0.89%	1.00%	1.16%	1.07%	0.56%	0.09%	0.31%
σ	5.24%	5.18%	5.77%	5.50%	5.01%	4.81%	1.87%	2.93%
β	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. β 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. ^a, ^b and ^c denote statistical significance at the .01, .05, and .10 levels, respectively.

	α	β	<i>SMB</i>	<i>HML</i>	<i>Adj. R2</i>
Composite	0.0024 [1.32]	1.0745 ^a [29.00]	-0.1817 ^c [-1.92]	-0.0696 [-1.15]	87.59%
GCRQ1	0.0037 ^c [1.9]	0.9061 ^a [22.30]	-0.1267 [-1.22]	0.1967 ^b [2.97]	80.73%
GCRQ4	0.0025 [0.54]	1.2758 ^a [13.18]	-0.5076 ^b [-2.05]	-0.5435 ^a [-3.44]	61.46%

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
Means					
Small	1.090%	1.015%	1.299%	0.781%	1.725%
2	0.774%	0.819%	0.755%	0.811%	1.505%
3	0.901%	0.822%	0.637%	0.784%	1.434%
4	0.444%	0.633%	0.541%	0.782%	1.438%
Big	0.474%	0.664%	0.880%	1.271%	0.640%
Standard Deviations					
Small	6.713%	6.795%	6.384%	5.342%	5.372%
2	5.702%	5.070%	4.980%	5.304%	6.888%
3	6.888%	4.866%	4.946%	4.675%	5.261%
4	6.658%	4.313%	4.544%	4.732%	5.454%
Big	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. β 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. ^a, ^b and ^c denote statistical significance at the .01, .05, and .10 levels, respectively.

	[1]	[2]	[3]	[4]
α	0.021 [2.218]	-0.000 [-0.008]	-0.016 [-1.445]	-0.006 [-0.513]
β	-0.018 [-1.734]	0.000 [0.024]	0.017 [1.406]	0.007 [0.543]
SMB		0.004 [1.605]	0.004 [1.669]	0.003 [1.148]
HML		0.012 [3.231]	0.014 [3.476]	0.015 [3.690]
Basic Materials			0.018 [1.284]	0.007 [0.524]
Consumer Goods			0.032 [2.339]	0.020 [1.446]
Consumer Services			0.023 [2.043]	0.012 [1.161]
Financials			0.029 [2.031]	0.019 [1.282]
Health Care			0.009 [0.685]	0.004 [0.261]
Industrials			0.023 [2.094]	0.016 [1.536]
Oil & Gas			0.030 [1.595]	0.026 [1.424]
Technology			0.022 [1.661]	0.011 [0.756]
Telecommunication			0.012 [0.812]	0.002 [0.155]
Utilities			0.031 [1.534]	0.021 [1.030]
GCRQ1				0.024 [1.852]
General test χ^2	56.50 [0.000]	58.25 [0.000]	112.80 [0.000]	52.00 [0.000]
Specific Test χ^2	53.83 [0.001]	54.43 [0.001]	67.45 [0.000]	65.71 [0.000]
F	1.691 [0.037]	1.673 [0.040]	1.851 [0.020]	1.781 [0.027]

Table 9. Time Series Regressions

$$R(t) - RF(t) = \alpha + \beta + SML + FML + GCRQI + Sectors$$

Size quintile	Book-to-Market Equity (BE/ME) quintiles									
	Low	2	3	4	High	Low	2	3	4	High
	α					$t(\alpha)$				
Small	0.0022	0.0007	0.0058	0.0015	0.0085	0.6248	0.2446	2.1442	0.7548	4.5733
2	0.0010	0.0008	0.0011	0.0001	0.0066	0.4283	0.3261	0.5339	0.0531	3.4136
3	0.0030	0.0010	-0.0010	-0.0001	0.0052	1.6679	0.4860	-0.6963	-0.0366	2.3548
4	0.0008	0.0015	-0.0013	-0.0005	0.0072	0.3740	0.9076	-0.8556	-0.2398	3.3076
Big	0.0007	0.0004	0.0017	0.0037	-0.0004	0.5453	0.2395	1.1288	2.1822	-0.1137
	β					$t(\beta)$				
Small	-0.8381	-1.0335	1.2723	1.2249	0.6564	-0.7445	-1.1053	1.4644	1.9866	1.1064
2	1.1451	0.2651	1.8962	1.8352	1.8228	1.5316	0.3588	2.9810	3.2594	2.9373
3	0.2124	-0.6939	1.3078	0.4396	0.2212	0.3695	-1.0729	2.7389	0.7619	0.3143
4	1.0524	0.9245	-0.0264	-1.9390	-1.0011	1.4494	1.7063	-0.0547	-3.1568	-1.4306
Big	1.6299	-0.2901	0.8193	0.6621	3.1565	3.9476	-0.5883	1.7488	1.2167	2.6944
	<i>SMB</i>					$t(SMB)$				
Small	1.0623	1.0069	0.8554	0.8978	0.8062	4.1181	4.6996	4.2968	6.3549	5.9300
2	0.9573	0.7582	0.7064	0.9914	0.7817	5.5882	4.4777	4.8468	7.6845	5.4971
3	0.5337	0.5712	0.7077	0.5892	0.5041	4.0524	3.8545	6.4677	4.4566	3.1253
4	0.1411	0.0410	0.0988	0.0504	0.0549	0.8481	0.3304	0.8928	0.3578	0.3423
Big	-0.3075	-0.1786	-0.1890	-0.3086	-0.1134	-3.2507	-1.5807	-1.7607	-2.4742	-0.4226
	<i>HML</i>					$t(HML)$				
Small	-0.2599	-0.2529	0.0295	0.1752	0.4514	-1.3766	-1.6125	0.2024	1.6940	4.5368
2	-0.5189	-0.1014	0.0235	0.3241	0.5946	-4.1381	-0.8179	0.2201	3.4323	5.7138
3	-0.6463	-0.2238	0.3513	0.1043	0.3333	-6.7042	-2.0634	4.3870	1.0783	2.8232
4	-0.5916	-0.0391	-0.0331	0.0240	0.3392	-4.8584	-0.4302	-0.4083	0.2334	2.8907
Big	-0.1604	-0.3151	0.2039	0.2488	0.5408	-2.3167	-3.8109	2.5955	2.7262	2.7525
	<i>GCRQI</i>					$t(GCRQI)$				
Small	0.0075	0.0892	0.1167	-0.2117	-0.0652	0.0402	0.5761	0.8113	-2.0736	-0.6633
2	0.2131	0.0817	0.0788	0.2210	-0.0047	1.7207	0.6673	0.7476	2.3700	-0.0460
3	0.2079	-0.0070	-0.0615	0.0780	0.1480	2.1835	-0.0653	-0.7778	0.8159	1.2694
4	0.0353	0.0575	0.0293	0.0285	-0.0388	0.2936	0.6408	0.3660	0.2802	-0.3350
Big	-0.1121	-0.0049	0.0470	0.3262	-0.0693	-1.6395	-0.0595	0.6053	3.6187	-0.3570

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, www.oia.at	1. Company Web Sites;
Belgium	1. Bureau Fédéral du Plan (BFP), www.plan.be , "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, www.caissedesdepots.fr/FR/index.php 2. L'Agence des participations de l'État (APE), www.ape.minefi.gouv.fr/ 3. Euronext, www.euronext.com/home/0,3766,1732,00.html	4. SEC, Filings & Forms (EDGAR), www.sec.gov/edgar.shtml ;
Germany	1. KfW, www.kfw.de/EN_Home/index.jsp	5. Hoovers Company In-dept Records;
Greece	1. Athens Stock Exchange, www.ase.gr/default_en.asp 2. Hellenic Capital Market Commission, Annual Reports 1999-2005, www.hcmc.gr/english/index2.htm	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, www.dt.tesoro.it/Aree-Docum/Partecipaz/Partecipaz/Partecipate.htm_cvt.htm . 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", www.borsaitaliana.it/documenti/ufficiostampa/datistorici/privatizzazioni_pdf.htm 8. Consob, www.consob.it	7. Amadeus, Bureau van Dijk; 8. Lexis Nexis, Business News; 9. Privatization Barometer, www.privatizationbarometer.net ;
Netherlands	1. Ministry of Finance, www.minfin.nl/en/subjects.government-participation 2. Morgan Stanley, Journal of Applied Corporate Finance, Vol. 9, Number 1, Spring 1996 3. OECD, 1998, Reforming Public Enterprises: The Netherlands.	10. Financial Times;
Portugal	1. Ministry of Finance and Public Administration, Economic Research and Forecasting Department (DGEP), www.dgep.pt/menprinci.html	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", www.imf.org/external/pubs/ft/wp/2005/wp0510.pdf
Spain	1. Sociedad Estatal de Participaciones Industriales, www.sepi.es 2. Economic Monthly Report (1995 and 1999), La Caixa, www.lacaixa.comunicacions.com 3. The Comisión Nacional del Mercado de Valores (CNMV), www.cnmv.es	
Sweden	1. Ministry of Industry, Employment and Communication, Annual Report for Government-Owned Companies, 2000 - 2005, www.sweden.gov.se/sb/d/2106/a/19792	
UK	1. "Who Owns Whom in the UK Electricity Industry", Electricity Association Policy Research, June 2003 2. www.ukprivatisation.com	

Panel B: Additional Data

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

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

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