Delistings from European Stock Exchanges 1996-2004[1]

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Abstract:

In recent years there bas been a dramatic increase in delistings from stock exchanges in the US and Europe, and this trend has been partly attributed to increasing administrative costs in listed companies. Has corporate governance regulation gone too far? We examine delistings from European stock exchanges 1995-2005 and find that standard corporate governance regulation - like investor protection and corporate governance codes - is associated with more delistings and in particularly going private transactions. In contrast, the tendency to go private is found to be lower, when the quality of overall governance (World Bank governance index) is high. The results continue to hold when we take into consideration that governance policy may be endogenous.

JEL classifications: G14; G15; G18; G24; G32; G33; G34; G38; K20; K40.
Key words: Delisting, public listing, transaction costs, mergers, acquisitions, bankruptcy, liquidation, going private, private equity, investor protection.

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1. Introduction

Recent years have produced a wave of corporate governance regulation. Examples from the US are the Sarbanes-Oxley act and codes of best practice on both NASDAQ and NYSE. Commentators argue that the administrative costs of these initiatives have spurred delistings from US exchanges (Block, 2004; Engel et al., 2005; Marosi and Massoud, 2005; Kamar et al., 2006; Leuz et al., 2006).[4] Moreover, it has also been argued that the Sarbanes-Oxley regulation have led international companies to list elsewhere, e.g. in London. However, studies that have examined cross-listings (Doidge et al., 2007; Zingales, 2007) show that the benefits of being listed on a US stock exchange have not been eroded by the costs associated with the Sarbanes-Oxley act compared to the UK. Although Europe has not been subject to the rigor of the Sarbanes-Oxley act, European corporate governance has also become increasingly regulated with directives and recommendations from the EU Commission, changes in national company law and codes of best practice. Further, Pagano and Volpin (2006) document a general international increase in the level of minority investor protection. Hence, the main question examined in this paper is whether corporate governance regulation has spurred delistings in Europe during the period 1995-2004. We argue that delistings are a good proxy for the cost and benefits of corporate governance regulation.[5]

In the literature different definitions of corporate governance have been proposed. For instance Shleifer and Vishny (1997) argue that two main corporate governance mechanisms are legal investor protection and concentrated ownership. Especially, in

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[4] The recent going dark literature in the US has analyzed the impact of the Sarbanes-Oxley act on the decision to deregister (go dark). Marosi and Massoud (2005) find that higher audit costs induced by the Sarbanes-Oxley act have had a significant impact on the decision to delist. Engel et al. (2005) also find a significant effect of the Sarbanes-Oxley act on firms' going private decision, particularly for small firms. Further Kamar et al. (2006) and also Block (2004) find that small firms tend to exit due to the Sarbanes-Oxley act. In contrast, Leuz et al. (2006) find that cost savings alone are unlikely to matter for the decision to delist, but may push more poorly performing firms to go dark. Note, however, that there is a difference between going private and going dark. When a firm goes private it becomes fully private whereas stocks of a firm going dark can still be traded in over-the-counter market.

[5] The listing and cross-listing decision is not entirely comparable to the delisting decision. For instance corporate governance regulation is known ex ante a listing or cross-listing, however, while public new regulation serves as external shocks.

public stock markets with dispersed ownership, investor protection becomes an important corporate governance mechanism.

The influential *Law and Finance* approach championed by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997, 1998, 1999, 2000a, 2000b) and Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2007) further emphasizes the role of the law in protecting minority investors. The general implication of this approach is that stronger minority investor protection is preferable as it tends to produce larger stock markets, more investments, better allocation of capital and higher economic growth (Beck et al., 2000, 2001, 2003a, 2003b; Beck and Levine, 2004; Djankov et al., 2007). However, complying with the legal rules from investor protection may also spur costs, since it could be that very strong protection of minority investors, such as comprehensive disclosure requirements, strong legal responsibility of non-executive directors, strict limitations on board composition etc. would increase the cost of governance to a point where transaction costs exceed benefits to investors. This could then lead to lower stock prices, fewer initial public offerings (IPOs) and more delistings. It is also possible that the costs and benefits of investor protection regulation differ by country and that some countries are better served with less stringent regulation (cf. Djankov et al., 2003). Along these lines Bruno and Claessens (2007) found that for companies with strong corporate governance practices, excessive country corporate governance regulation can harm firm valuation. They interpreted this as a cost of overregulation. Further, Boot et al. (2006) theoretically emphasizes that corporate governance regulation can lead to overmonitoring of firm management which dampens firm efficiency.

The costs of applying with investor protection regulation include extra auditing costs, disclosure costs, legal assistance, compensation premiums for non-executive and executive directors, board insurance, administration costs, strategic distortion of decision making, and several other items. These costs are difficult to estimate with any degree of precision; however an indirect test examining the effects of corporate governance regulations on delistings could be conducted. The underlying idea of the test is that companies will choose to leave stock exchanges if the governance costs come to exceed the benefits of being listed. Hence, we test whether investor protection

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levels affects the decision to delist – especially the going private decision - while controlling for other determinants. In principle, by doing so, we test whether the costs of investor protection regulation exceed the benefits.

Delistings from a stock exchange can take place in different ways. A company may be acquired by another company or merged with it. It may be acquired by new owners (e.g. a private equity fund) and delisted. It may go bankrupt or be liquidated by the incumbent owners. In rare cases it may even be involuntarily delisted by the stock exchange because of failure to comply with the listing standards. These types of delistings are to some extent determined by different causal mechanisms, which we analyze in the following, but there are also some common drivers. For example, as mentioned, higher listing costs ceteris paribus provide an incentive for firms to escape these costs by merger, acquisition or by going private.

Mergers and acquisitions are essential features of corporate governance in countries with well-developed stock markets. A strong market for corporate control may be a competitive advantage for these countries so M&A can to some extent be regarded as a sign of vitality (Pagano and Volpin, 2005a). Going private transactions may be an efficient response to agency problems of free cash flow in large listed firms (Jensen, 1986). Even a high number of bankruptcies can be a positive indicator, i.e. a sign of entrepreneurship or intense competition. So delistings do not constitute a problem per se, although for a stock market to remain strong, these delistings must be balanced by IPOs.

In contrast, going private transactions can be regarded as a sign that the buyers find it more valuable to operate the company as a private entity, i.e. without disclosure, investor meetings, corporate governance regulations and other listing costs, as well as avoiding the costs of separating ownership and control. The buyers may be outsiders, e.g. private equity funds, or insiders (incumbent managers or majority owners), who find it easier to manage their company without having to apply to legal rules of minority investor protection which spur for instance administrative costs. In either case, companies vote with their feet when going private and voluntarily forego the

advantages of being listed. While these transactions may be motivated by other firm specific and macroeconomic factors (which need to be controlled for) we therefore pay special attention to them.

There has in fact been a wave of delistings from European stock exchanges post 2000 which coincides with a number of new governance initiatives, e.g. the spread of codes to continental Europe. In total 30% of the population of listed European firms ceased to be quoted and approximately 40 percent of the asset value vanished in this way over the period 1995-2005.

In this paper, we thus examine delistings in Europe 1995-2005 and to what extent they can be attributed to governance regulation, industry effects and firm specific factors. In the absence of a generally accepted measure of governance regulation we use the La Porta et al. measure of investor protection (revised by Pagano and Volpin, 2005b) as a proxy, but we also experiment with other measures. We do believe that this investor protection measure is a proxy that captures the general trends in governance regulation. Using logistic and multinomial logistic regressions, we find evidence that stronger investor protection increases the likelihood of exit by M&A and going private transactions, but reduces the probability of bankruptcy and liquidation. We also provide instrumental variable estimates of determinants and effects of investor protection regulation while taking into consideration that corporate governance policies may be endogenously determined (Rajan and Zingales, 2003; Pagano and Volpin, 2001, 2005b; Perotti and von Thadden, 2006; Roe, 2006).

2. Theory

According to the *Law and Finance* view corporate governance shapes the attractiveness of public stock markets. In this paper we address the link between the *Law and Finance* view and the decision to delist – in particular how investor protection regulation affects this decision. Investor protection is important since as mentioned, legal protection of minority shareholders is a fundamental part of corporate governance regulation (Shleifer and Vishny, 1997). However, we also discuss firm characteristics as

determinants of delistings. In the following, we will motivate and discuss how the benefits and costs of investor protection regulation are realised, how investor protection regulation affects delistings, and we motivate the use of investor protection regulation as a determinant. Later, we provide more evidence on what shapes investor protection regulation. We focus mainly on going private transactions but will also discuss other potential determinants of going private, M&A and bankruptcy and liquidation which we control for in our empirical analysis.

Firstly, we describe regulatory costs and benefits of being a listed company. A stock exchange creates a market in shares (Mulherin et. al., 1991). The market is attractive to buyers and sellers of shares because it economizes on their transaction costs – that is their search, information, bargaining, decision, policing and enforcement costs (Coase, 1992; Mulherin et al., 1991; Dahlman, 1979). An important instrument in this is a certain standardization of the shares traded (Telser, 1981) which reduces the need for a continuous detailed assessment of individual firms and transforms their stock into "homogenous, fungible securities" (Pirrong, 1995). Standardization and other rules are provided by both law, by the exchanges themselves (Coase, 1992) through listing requirements and corporate governance codes (Cadbury Commission, 1992). This regulation applies to ownership and board structure, corporate governance practice, financial reporting, disclosure, capital structure and firm size, but more subjective criteria like growth (NYSE listing requirements) may also be considered. This regulation is generally prompted by a desire to protect (minority) investors and improve market conditions.

Governance rules and standards are valuable to investors and therefore also to issuers, because they reduce their cost of capital, but they come at a cost. There are direct costs, which include listing fees, fees for auditors and lawyers, liability and insurance costs, larger fees for non-executive and executive directors etc. In the US the costs of compliance with the Sarbanes-Oxley act would fit into this category.[6] Indirect costs

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[6] A survey of the 224 largest public firms in the USA by Financial Executives International with regard to the direct costs of complying with Section 404 of the Sarbanes-Oxley act finds that the average first-year estimate is almost $3 million for 26,000 hours of internal work and 5,000 hours of external work, plus additional audit fees of $823,200, or an increase of 53% (Zhang, 2005).

would include costs of disclosure to competitors, loss of flexibility with regard to board structure, opportunity costs of top management time, box-checking and bureaucratic procedures. We hypothesize that the likelihood of delisting will depend on both costs and benefits of investor protection regulation. The rationale for this is that the probability of delisting will depend on transaction costs, particularly whether the fixed cost of being listed exceed the benefits of relatively low marginal trading costs.

Firms can avoid fixed listing costs by going private, but at the cost of higher variable cost of trading shares outside the organized market. We believe that going private transactions are essential to evaluate when determining the costs and benefits of investor protection regulation. Alternatively, firms can save on listing costs by merging with other listed companies, but in the absence of synergies the savings may be drowned by higher administration costs in a larger company (Williamson, 1995, 2005). Finally, firms can choose to delist in order to list on another stock exchange (Focault and Parleur, 2004).

It is difficult to determine the optimal level of regulation with any degree of precision because regulation is so multifaceted. The widely used investor protection (level) index originally proposed by La Porta et al. (1998) was justified to a large extent by a positive effect on the size of the stock market. More generally, however, this so-called anti-director rights index summarized measures which were believed to strengthen the rights of minority investors vis-à-vis company boards. But for instance the right to file lawsuits against boards involves costs, so does the right to call an annual meeting and the proxy by mail system probably also introduces administrative costs.

As another example La Porta et al. consider that investors are better protected where an investor can call an extraordinary general meeting, if she has more than 10% of the stock. It is clear that extraordinary meeting involves costs not just for the managers who have to defend their decisions, but also for the other shareholders who have to attend the meeting or live with the outcome if they stay away. But what if this threshold was lowered to 5% - would investor protection then be higher? If so how about 1%? Or should any shareholder be able to call a shareholder meeting any time? In most

situations the transaction costs for both the shareholder and the company would probably become to high at some point, and the other shareholders would consider delisting or at least the company's market value would drop. In contrast few would argue with the proposition that a qualified majority of the shareholders should be able to call an extraordinary meeting.

The study by Bruno and Claessens (2007) examines how company corporate governance practices and country regulatory regimes affect firm valuation. Similar to our approach the authors argue that country level overregulation can be present. Their argument is mainly backed by two theoretical explanations that also apply here. Firstly, Burkart et al. (1997) argue that too much monitoring and legal protection may dampen managerial initiatives and consequently worsen firm efficiency. Secondly, Boot et al. (2006) find that corporate governance controls can prevent management from doing what it should. Bruno and Claessens' empirically findings suggest that for firms with strong corporate governance practices, country level corporate governance regulation may have a negative impact on firm valuation. This could hence be interpreted as a sign of overregulation.

We therefore conjecture that there is a cost of investor protection regulation as well as a benefit, that more regulation is not necessarily better. This is also recognized by the political economy view and these political determinants are discussed next. Whether a given investor protection regulation measure will have a positive or negative effect on stock market attractiveness is essentially an empirical question, which we will try to address in the following by focusing on delistings.

2.1. Political determinants of delisting

Until recently, research in international corporate governance emphasized that national corporate governance systems are stable and historically determined by legal origin (La Porta et al., 1998), cultural and ideological differences between countries (Roe, 2003) or demography (Alesina and Glaeser, 2004). However, recent research on the politics of governance has emphasized that corporate governance policies actually do change over

time and sometimes in ways which impede rather than facilitate large stock markets (Pagano and Volpin, 2001, 2005a, 2005b; Rajan and Zingales, 2003; Perotti and von Thadden, 2006; Roe, 2006). Over the last decade European corporate governance has arguably changed as a result of changes in company law (e.g. the EU takeover directive) and the diffusion of corporate governance codes (Pagano and Volpin, 2006). Moreover, structural changes such as the common European currency have facilitated the internationalization of European stock markets (e.g. Stultz, 2005) in a way which may be helpful in revealing the effect of underlying differences in national governance policies.

This raises the question whether corporate governance policies have the desired effects. In principle, well-intended regulation by benevolent policymakers may increase investor protection, lower discount rates, raise stock prices and market values and thereby make it more attractive to list or stay listed and less attractive to delist. However regulation may also impair stock market development (Rajan and Zingales, 2003), which recent research has tried to explain by interest group politics and the way politics is shaped by constitutions (Pagano and Volpin, 2001, 2005b; Perotti and von Thadden, 2006). Interest group politics will only rarely lead to socially optimal regulation (Olson, 2000). Djankov et al. (2003) recognize that politics may lead to socially wasteful regulation, for example ascendant interest groups may choose institutions that protect their political and economic rents. They highlight how uncritical transfer of institutions – such as colonial transplants – may lead to inefficient regulation.[7] "Politics has a bad name in economics", they note, but maintain that policies are often welfare-enhance despite the general scepticism.

The political economy view of governance invites questions concerning the effects of corporate governance regulation across shareholder and stakeholder groups. In particular, corporate governance regulation arguably influences the balance of power between minority shareholders and controlling owners (Stultz, 2005). Strong protection

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[7] While the idea of colonial transplants is not directly applicable to recent changes in corporate governance regulation, the remarkable spread of quite uniform regulation (codes of best practice, EU directives, increases in investor protection measures) to countries with quite different corporate governance systems does nourish a suspicion that not all of this regulation is efficiently adapted to the local context. It is not clear whether for example smaller countries can improve their stock markets simply by adopting Anglo-American standards.

of minority investors may reduce the control premia and private benefits of dominant owners. In this paper our main focus is on investor protection regulation. However, we do make a distinction between two types of regulation: 1) minority investor protection, which influences the distribution of rents and benefits between controlling shareholders (insiders) and minority investors (outsiders), and 2) general legal infrastructure (e.g. protection of property rights, efficiency of the courts), which we measure by the World Bank governance indices. The general legal infrastructure may capture a more structural dimension of a country's legal system which may also affect the attractiveness of public stock markets. Especially this effect might be present in emerging markets.

We distinguish between two different hypotheses concerning the costs and benefits of investor protection regulation on European delistings in this period. According to the efficiency hypothesis (benefits of investor protection regulation outweighs the costs) new regulation is enacted to improve the functioning of stock markets and is therefore likely to have a positive effect on company performance and stock prices, which will strengthen the incentives to list and remain listed. On the contrary, according to the overregulation hypothesis (costs outweighs the benefits), regulation is a result of rent seeking by powerful economic constituencies, which seek to further their own interests, for example in the last decade institutional investors and their service providers (investment banks, auditing firms). If the costs of new regulation to protect minority investors exceed the benefits in terms of lower costs of capital, companies will tend to leave the exchange.

In the case of going private transactions, incumbent controlling shareholders may decide that the listing benefits are too small and buy out minority investors. This will be especially likely if there are private benefits of control which the incumbent owners can retain by delisting. Alternatively, private equity buyout funds may find that they can create value by taking over listed companies because they can cut down on information costs and have greater flexibility with regard to board structure, compensation systems, capital structure and the like.

Companies may also choose to economize on governance costs by merging with other listed companies, or they may gain the same benefits as going private if they are taken over by a privately held company. Moreover, lower private benefits of control as a consequence of higher governance standards may make it more attractive for incumbent owners to sell out: the private benefits of control are lower and minority investors are willing to pay a higher price for the same reason (La Porta et al., 2000a, 2002). Rossi and Volpin (2004) and Pagano and Volpin (2006) find that minority investor protection is associated with more mergers and acquisitions.

Finally, bankruptcy/liquidation is arguably less likely in countries with high corporate governance standards where well-performing firms are less likely to be capital- and cash-rationed, while bad performance is presumably more likely to be detected and corrected before the firm fails. In particular, higher transparency should make it easier for banks and other lenders to avoid bad loans. We recognize that the absolute number of bankruptcies may well be higher in countries with higher investor protection, but our hypothesis concerns frequencies.

Investor protection regulation is, however, not the only determinant of delistings. In the following we describe other potential determinants of going private, M&A and bankruptcy and liquidation which we attempt to control for in our empirical analysis.

2.2. Determinants of going private transactions

Jensen (1986, 1989) proposed that going private transactions (leverage buyouts) can be regarded as an efficient response to agency problems in publicly listed companies. For example, private equity funds can target companies which – for whatever reason – deviate substantially from shareholder value maximization. This type of transaction could be directed at companies with weak owners (low ownership concentration) that suffer from owner-manager agency problems which going private transactions address (Jensen, 1986). For example, companies with high equity to assets ratios could benefit from financial leverage. Inefficiency – and scope for value creation by restructuring - could be found among companies that have many employees or low rates of asset

turnover compared to industry benchmarks. Going private may be a particularly appropriate solution to agency problems in companies with substantial free cash flow (Jensen, 1986) which is not paid out as dividends. Jensen also emphasized that industries with stable free cash flows are particularly suited for financial leverage.

Not all going private transactions involve leveraged buy-outs, however, such agency costs savings may also apply to other acquirers.

In addition, stock liquidity may be an important driver of delistings as emphasized by Bharath and Dittmar (2006). If a stock is not liquid (easily tradeable), it may be priced at a discount, which implies lower advantages of being listed. This could imply that companies with more concentrated ownership (less free float), less traded stocks and operating in less liquid national stock markets will be more inclined to go private.

Another line of research maintains that the shareholder gains from going private transactions arise from a zero sum game with incumbent stakeholders whose wealth is being expropriated (e.g. Shleifer and Summers, 1988). This could mean that companies with high debt-to-equity ratios are more likely to go private because a substantial part of the cost is paid by increasing risk among incumbent debtholders (e.g. Marais, Schipper and Smith, 1989, for the case of bondholders). The incumbent shareholders may also be expropriated by the incumbent management (Lowenstein, 1985; Harlow and Howe, 1993) or controlling owners: Low dividends and low reported earnings per share could signal that managers or controlling owners try to depress prices prior to delisting. Taxation benefits can be a cause of delistings (Kaplan, 1989) if buyouts involve substituting debt for equity which many private equity funds presumably do. The value of the tax shield should be a function of tax and interest rates, and changes in the tax shield would be expected to influence the decision to delist.

Finally, going private can be influenced by stock prices (e.g. under/overvaluation of a company's shares relative to fundamentals). High stock prices relative to fundamentals or prospects mean that it is relatively less attractive to take over a company. According to the undervaluation hypothesis high stock prices and by implication high firm value (q) should therefore be associated with a lower propensity to go private (Palepu, 1986).

We also note that correctly highly valued companies have better growth prospects and may therefore find it profitable to remain listed to finance further expansion. Moreover, we conjecture that market timing – e.g. perceived high or low stock prices in general - seems to be an element in the decision to delist similarly to what Baker and Wurgler (2002) and others found for the IPO decision. To potential private buyers it may seem more attractive to take a company private if stock prices are low.

2.3. Determinants of M&A

The extensive literature on M&A identifies several determinants of delistings by acquisition or merger (Dietrich and Sorensen, 1984; Palepu, 1986; Cudd and Duggal, 2000). Firm size could have a negative effect on the likelihood of becoming a target for merger or acquisition, if it is easier to finance small transactions and if acquisition costs are smaller for small firms (Dietrich and Sorensen, 1984). However, fixed transaction costs of acquisition imply that unit costs are lower when large firms are acquired. In fact the merger activities in the 1980s compared to those of other periods were mainly characterized by the large size of targets (Barnes, 2000). Managerial inefficiency could show up in bad company performance making the firm a more likely target for acquisition because of liquidity problems or dissatisfaction among the incumbent owners (Jensen, 1986; Palepu, 1986). The new owner could replace inefficient management and increase earnings in the long run. If agency problems are more severe in large firms (Nuttal, 1999), this would make it more attractive to take over large firms, particularly those with agency problems because of low ownership concentration. Financial Leverage is important according to the failing firms' hypothesis which regards merger or acquisition as a civilized alternative to bankruptcy (Dewey, 1961). Leverage (loss of equity dues to past bad performance) may also signal inefficient management. Nuttal (1999) finds that avoiding bankruptcy or financial distress is an important motive to sell. Industry shocks (like deregulation or new technology) can necessitate horizontal mergers to restructure an industry. Andrade, Mitchell and Stafford (2001) and Mitchell and Mulherin (1996) find that merger activity in 1990s in the U.S. was clustered by industry. Undervaluation (low Market-to-Book or Price-Earnings ratio) implies that targets are less expensive and so more

attractive to buy (Dietrich and Sorensen, 1984; Palepu, 1986; Cudd and Duggal, 2000; Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004).

2.4. Determinants of Bankruptcy and liquidation

Both bankruptcy and liquidation may involve large losses to creditors and shareholders, but may also involve more orderly dissolution of the company without losses to creditors or reorganization and continuation of the business in some form (White, 1989). In our data we find that companies perform better prior to liquidation than prior to bankruptcy in terms of accounting profitability and market valuation, but we group them in one category because they influence delisting frequencies relatively little. Insolvency could imply that a company cannot repay its debt due to a lack of liquidity (Altman, 1968, 1993; Schary, 1991; Bechetti and Sierra, 2003; Hillegeist et al., 2004; Buehler et al., 2006). This may or may not ultimately lead to bankruptcy. Accounting ratios for profitability, liquidity and solvency have been proposed as useful measures for predicting whether firms are likely to default or go bankrupt (Altman, 1993): Net working capital to total assets (liquidity), equity to total liabilities (solvency) and asset turnover, i.e. sales to assets, (to measure efficiency of management). Like acquisition by a private equity fund or another firm bankruptcies may also be the result of managerial inefficiency.

3. The data

3.1. Data sources

Our dataset (from Thomson Financial and Worldscope) consists of all listed European companies over the period 1995-2005, including both companies that are listed in any given year and companies that are not, but were listed at some point during the period. We do not have full coverage, for example we miss data from countries like Iceland,

Switzerland, Russia and other members of the former Soviet Union, but we do have a fairly comprehensive sample.[8]

Since we would like to analyze changes in the population and their determinants we loose one year (1995). To ensure completeness of the dataset we also drop 2005 from the sample to avoid registering a delisted company as listed because it reports late in the year. The observation period 1996-2004 both contains bull and bear years, e.g. the stock market bubble of the 1990s, the decline 2000-2003 and the partial recovery in 2004-2005. In terms of corporate governance the period is characterized by rapid growth in government regulation, EU directives, new national laws and best practices codes, most of which started in the UK and spread subsequently to the rest of Europe. It can perhaps be characterized as the heyday of corporate governance and provides an excellent period for studying the effects of these new initiatives.

Based on the information from Thomson Financial/Worldscope we can distinguish between five types of delisting - merger, acquisition, bankruptcy, liquidation or going private. We classify the cause of delisting as merger if a firm is delisted because of merger with another firm. A firm is denoted as acquired if it is taken over by another firm. In M&A it is the target firms which become delisted. Going private firms are categorized as such if they are taken over and delisted by a private non-corporate buyer, for instance an individual or a private equity fund. Finally, we have direct information on whether a firm delists due to bankruptcy or liquidation. This key firm status variable published by Thomson Financial is based on their own research on company filings, press releases and other news available. A potential problem with this classification is overlap between groups due to misspecifications. For example it may be difficult to distinguish between an acquisition and a going private transaction in private equity buyouts where private equity funds set up a holding company (controlled by the fund) which buys the target firm. We checked for this and other measurement problems where we have good secondary information and found only two misspecifications in which going private firms were grouped as acquired. In the present study we combine the 5

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[8] The data consists of information from the following 21 countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

different types of delisting into 3 groups: merger and acquisition, going private and bankruptcy/liquidation. We do not have access to detailed information about buyers and so we cannot distinguish between private equity funds and incumbent blockholders in going private transactions or between foreign and domestic acquirers in M&A transactions.

Data on UK includes Alternative Investment Market (AIM) listings. AIM was launched in 1995 and AIM has been growing in terms of new listings since then. The AIM is regulatory flexible compared to the main London market. This could bias our analysis, however, AIM companies are encouraged to follow same corporate governance codes as companies listed on the main market are required to follow. The AIM actually seem to resemble the general patterns of other stock exchanges since about 30% of firms that had become listed during 1995-2005 became delisted (LSE, 2005), hence, indicating that including AIM companies does not seem to bias our results.

We only have information on where the primary issue trades. However, several firms do choose to cross-list and this could introduce a bias in data since we can not control for this. For instance, it is problematic when European firms cross-list in New York since they will have to apply to US corporate governance requirements etc. However, our scope is also different since we examine the decision to delist and not the decision to cross-list, or the IPO decision – and the determinants of these may differ greatly. We argue that examining delistings capture a more direct effect of the costs and benefits of corporate governance regulation. Moreover, firms that contemplate to go public can take current regulation into account, whereas listed firms need to adjust to the regulation. Which might explain the diverging impact of Sarbanes Oxley on cross-listings and delistings (e.g. Engel et al., 2005; Marosi and Massoud, 2005; Kamar et al., 2006; Doidge et al., 2007).

We have yearly observations of the standard accounting and market variables, for example company size in terms of assets or turnover, market value, return on assets (ROA), debt, cash flow, sales growth, ownership concentration, main industry[9], country

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[9] The Standard Industrial Classification (SIC) codes.

of origin etc. as well as the nature of the delisting (merger, acquisition, going private transaction, liquidation or bankruptcy). We correct for extreme observations by truncation (e.g. ROA < -100% is registered as ROA = -100%). By country of incorporation we link to country information on the LSSV investor protection index (updated by Pagano and Volpin, 2005b), and World Bank governance ratings, for which we have time series information. We can also link to structural variables like legal origin, self-dealing indices etc. Moreover, we link to GDP growth (OECD) and the aggregate volume of private equity investments (Deloitte, 2005).

We calculate a simplified proxy for the q ratio which is the ratio between market value plus book value of debt relatively to the book value of total assets as a proxy for the replacement value of the assets. Perfect and Wiles (1994) discuss that simple Tobin's q measures are probably to simplifying, however, the measure used here is applied in related studies (e.g. Doidge et al., 2007). The firm-specific q is measured by using annual data on market value and book values of debt and assets. Average firm value is the annual country averages equally weighted of the firm-specific q defined above.

We study the impact of alternative measures of governance regulation on delistings. One important and widely used measure is the investor protection index constructed by La Porta et al. (1998) and updated by Pagano and Volpin (2005b) to vary by country and year.[10] This measure is a sum of six dummy variables: 1) whether or not proxy by mail is allowed, 2) if shares are not blocked before a shareholder meeting or whether they are, 3) whether or not cumulative voting for directors is allowed, 4) whether or not oppressed minorities are protected, 5) whether the percentage of share capital required to call an extraordinary shareholder meeting is less than 10 percent, and 6) whether or not existing shareholders have pre-emptive rights at new equity offerings. We abbreviate this variable the LSSVPV investor protection index. Pagano and Volpin extend and revise the La Porta et al. survey from 1993. Based on a new survey questionnaire they are able to evaluate the interval from 1993 to 2002. In their questionnaire they ask how the regulation today (2002) is different from the previous La Porta et al. measure, and when and how the law changed. Hence, this index not only corrects some of the misspecifications of the previous index it also adds time-variation

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[10] The Pagano and Volpin (2005b) dataset is available at http://www.e-aer.org/data/sept05_data_pagano.zip.

to the index. Investor protection has increased over the observation period, but there are still substantial country differences. We lack information after 2002 and therefore assume no changes in 2003 (since we predict delistings one year ahead up to 2004 we do not need the 2004 figures).

There is a great debate about these measures being incomplete, mainly because of the indices ad hoc nature and for several conceptual ambiguities and outright mistakes in coding. However, as raised Pagano and Volpin (2005b) addresses these issues when revising the index. Another argument for using their revised index is that Pagano and Volpin introduces the time dimension in their measure – the investor protection index varies over time which is not the case for La Porta et al.'s index. This is relevant for our analysis since we investigate how the development in investor protection regulation has changed the delisting decision. Secondly, the revised index by Pagano and Volpin is highly correlated with other measures such as the revised anti-director index and the anti self-dealing index (about 0.75). This also suggests that the revised Pagano and Volpin measure is applicable in our analysis.

We regard the LSSVPV investor protection index as a proxy for minority investor protection in general including disclosure requirements, accounting standards and insider trading rules, which we believe to be correlated with the index.[11] We do not mean to imply that introducing mandatory cumulative voting or proxy by mail will have much of a direct effect on delistings or other economic variables. However, the LSSVPV index is correlated with other kinds of minority investor protection, for example the Djankov et al. (2007) anti self-dealing index, our measure of code adoption or a measure of regulatory costs (Jackson, 2005) and can therefore be used as a proxy for more general trends in governance regulation. Among the important changes during this period we can mention EU directives on transparency (2004), prospectus (2003), transparency, market abuse (2003), takeovers (2004), financial instruments (2004), which have to a large extent been implemented in the national law of EU member

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[11] Other related indices regarding securities laws such as disclosure requirements and liability standards (see La Porta et al., 2006) could also be used but they are also not time-varying. They also show to be strongly correlated (not reported) with our used measure of investor protection regulation (0.5-0.8).

countries and associated countries during our study period (Thuesen, 2007).[12] For example, the takeover directive enforces a mandatory bid rule (in control block trades all shareholders must get the same offer), which makes it difficult to undertake control block transactions without delisting companies. The disclosure directive obligates companies to disclose stock transactions for managers and large owners and to quickly disclose relevant inside information to all shareholders. This could reduce the private benefits of control for large owners. The prospectus directive implies an uncertain increase in the legal liability of board member for risk management and internal control. This new regulation applies only to listed companies, none of it applies to private equity funds and privately owned companies.

As a measure of general legal infrastructure the World Bank governance index is used. The index combines measures of political freedom (e.g. freedom of speech, association, voting), regulatory quality (e.g. costs of regulation, efficient enforcement, presence of generally accepted codes company law) and quality of the legal system (e.g. quality of contract enforcement and court system). Every second year since 1996 the World Bank has published a set of six different country level governance indicators for 209 countries; see Kaufman et al. (2005, 2006). The six governance indicators are: i) Voice and accountability, ii) Political instability and violence, iii) Government effectiveness, iv) Regulatory quality, v) Rule of law, and vi) Control of corruption. The governance indicators are constructed through 37 different data sources with more than 300 different underlying variables. More specifically, the main data sources cover information gathered from surveys of firms' and individuals' perception of governance, as well as assessments by commercial risk rating agencies. Basically, the advantage of this approach is that the World Bank governance indicators are more informative about unobserved governance characteristics than other comparable data sources. These governance indicators are measured in units ranging from -2.5 to 2.5, where higher values correspond to better governance. Since our focus is Europe we decide only to use the governance indicators which we find most important for our sample of (developed) countries. Thus we define a new World Bank governance indicator which

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[12] EU Directive on the market for financial instruments (2004/39/21. April 2004), EU Directive on prospectus (2003/71/4. November 2003), EU Directive on Market Abuse (2003/6/28. January 2003), EU directive on Transparency (2004/109/15. December 2004), EU directive on Takeovers (2004/25/21. April 2004).

is the sum of three indicators: voice and accountability, regulatory quality, and rule of law, i.e. our measure ranges from -7.5 to 7.5. We assume unchanged index values for years with no index values reported (1997, 1999 and 2001).

To examine the effect of informal corporate governance codes which have been an important element of corporate governance regulation we construct a code adoption variable based on information from the European Corporate Governance Network website. We use a simple binary variable (code adoption = 1 if a country has a corporate governance code in a given year and 0 otherwise). Hence, for example if a country introduces its first corporate governance code in 1999 then the code adoption variable is 0 until 1999 and 1 onwards. This measure is intended to measure the effect of corporate governance codes on delistings. A generally accepted aim for these codes is to improve investor confidence, which could increase incentives to remain listed (Cadbury Commission, 1992). But governance codes have also been criticized for leading to senseless box checking and for arbitrary restrictions on board membership, board organization etc. (Hermalin and Weisbach, 2005).

As we will argue later there is reason to believe that the World Bank governance and the LSSVPV indices measure different dimensions of corporate governance regulation. Whereas the World Bank is concerned with the overall quality of social institutions, the LSSVPV index more specifically measures minority investor protection. The two measures are not strongly correlated.

3.2. Descriptive Statistics

The first major finding in this data set is the magnitude of the changes. We register a total of 12612 companies listed at European exchanges during the period, of which an astounding 30 percent have been delisted. In market values this corresponds to approximately $3.7 trillion or 40 percent of total market value. Obviously firm dynamics are very important, and the studies which abstract from them by balanced panels or cross sections miss an important part of economic reality.

For an overview we begin with a few graphs. Figure 1 shows the number of listed firms, delistings and IPOs over the period 1996-2004. We observe a steady growth in the number of listed firms up to the year 2001, reflecting more listings than IPOs, a drop in 2002-2003 because of fewer newlists and more delistings with a pick up in numbers in 2004. The trend follows market trends (average firm value) with a lag: The number of listed firms increases when stock prices (and firm value) increase and decrease when stock prices decrease.

Figure 1: Listed firms, IPOs, Delistings, and average firm value

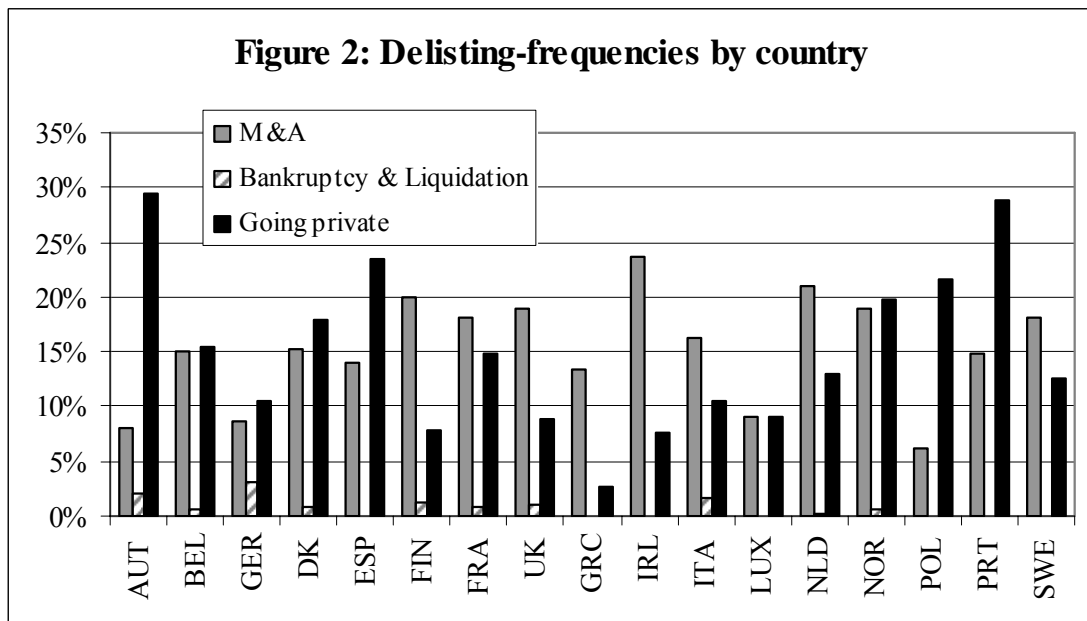**Figure 2: Delisting-frequencies by country**
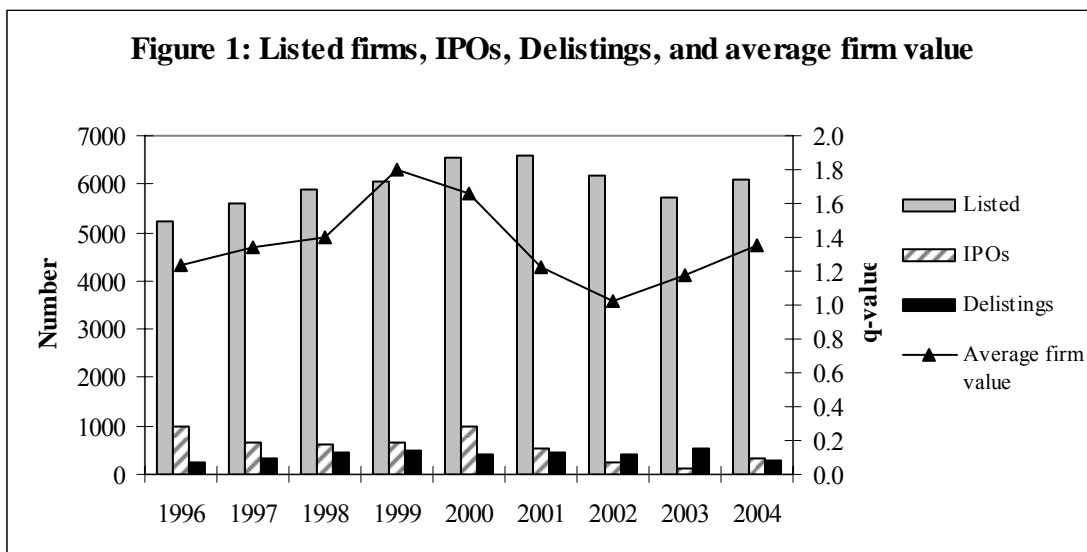
Figure 2 shows the incidence of delistings by countries. We observe a high incidence of M&A in the UK, Finland, and the Netherlands, which are on the top 5 in Europe measured by the LSSVPV investor protection index or by the World Bank governance index. In contrast, we observe particularly high going private frequencies in Austria and Portugal. These countries tend to be mid-level in terms of investor protection (La Porta et al., 1998), but both countries experienced an increase in minority protection in 1999-2000 (Pagano and Volpin, 2005b) prior to a massive increase in going private transactions. Johnson (2003, p. 36) describes how "Many Austrian managers clearly feel the attention a company receives from Austrian investors doesn't merit the growing burdens of maintaining a listing".

Finally, figure 3 tracks the evolution of delistings by type over time. We note a wave of M&A during the bull market up to 2000, after which the number of transactions dropped in the bear market, but picked up again in 2003. In contrast, there is a strong increase in the frequency of going private transactions over time, although with a drop in 2004. The frequency of bankruptcies and liquidations peaked when the bull market burst in 2000-2001, but stayed at a low level during the whole period.

Figure 3: Delisting-frequencies by type over time
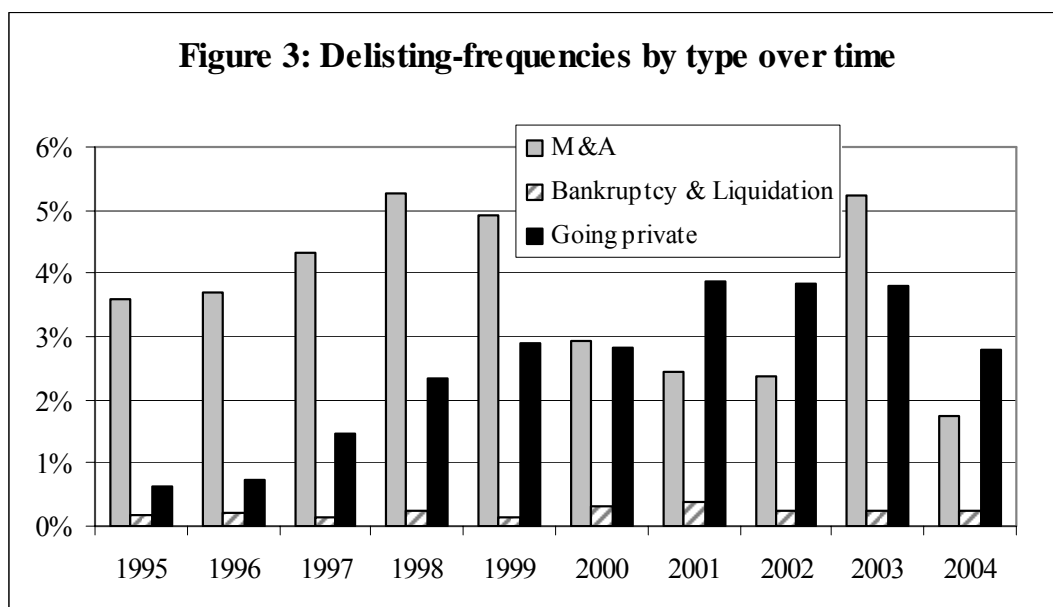
From table 1, which shows descriptive statistics by type of delisting, we observe that going private transactions tend to be preceded by significantly higher rates of

ownership concentration, 56%, against 44% on average for firms that continue as listed. One explanation could be that low stock liquidity makes it less attractive for firms with concentrated ownership to remain listed. Alternatively, it may be easier for insiders to take a company private if they already have substantial ownership. A typical scenario seems to be that insiders (e.g. a founding family) list their company by selling a minority stake to the public, but later for different reasons (low market valuation, financial problems) decide to go private again. Bankruptcy candidates tend to have lower ownership concentration, which is consistent with less risk aversion for more dispersed ownership. We define ownership concentration as the ratio between closely-held shares and common shares where closely-held shares represents shares held by insiders.

In terms of size (log accounting assets), M&A targets are typically larger than firms that continue to be listed which is a surprise since size has historically been regarded as a takeover deterrent. In contrast firms that go private are typically smaller than the firms that remain listed. And the subsequently bankrupted or liquidated firms are even smaller. It may be easier for insiders or equity funds to finance the acquisition of smaller firms which may also benefit less from remaining listed.

In terms of capital structure, firms going private or bankrupt have lower equity-to-assets ratios than firms that continue as listed. This is more consistent with expropriation of existing debtors than with efficiency gains of post transaction leveraging. The average equity ratio for merged and acquired firms is closer to the average for listed firms. Firms that subsequently go into liquidation or bankruptcy tend to have particularly low equity ratios as might be expected.

Growth rates (sales growth) tend to be highest among the firms which continue to be listed, slightly lower for M&A firms and lowest for firms that go private. It seems understandable that high growth firms would want to remain listed to finance their expansion more easily. In contrast low-growth firms will benefit less from being listed. Within the bankruptcy and liquidation group there is a big difference between

bankrupted firms which have high prior growth rates and liquidated firms which have zero growth rates, but the number of observations is small for both groups.

Accounting profitability tends to be higher among merged and acquired firms than among firms that remain listed, but lower for firms going private. In other words, the failing firms hypothesis (Dewey, 1961) is more convincing for going private transactions than for M&A. Following Jensen (1986) it may be easier to restructure companies which are privately held. Surprisingly, firms going private tend to have negative ROA[13] on average, while negative ROA is expected for bankrupted and liquidated firms. Apparently firms that go private tend to be low performers. Later in the paper we check for differences between profitable and unprofitable firms. Alternatively, accounting profitability may be manipulated by insiders to make companies cheaper which would then indicate expropriation of minority investors. Sales per employee is, however, higher for both M&A and going private transactions compared to remaining listed firms and the overall average.

Firm value, q,[14] is higher for firms that remain listed, which makes sense, since they are more expensive to buy or have better growth prospects, but the differences between delisted firms are small.

Being newly listed (IPO within the period 1996-2004) makes the firm a less likely M&A target, but a more likely target for going private or for bankruptcy/liquidation. 54-55% of the firms that subsequently went private or bankrupt were listed during the period whereas the percentage for firms remaining listed was 40% and 30% for merged/acquired firms.

In addition to the firm specific variables we include a number of country variables to capture the impact of country differences. We use average firm value by country and year[15] as a measure of general market sentiment/expectations (Shleifer and Vishny,

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[13] ROA is defined as netincome before preferred dividends plus interest expense on debt-interest capitalized after taxes relatively to last year's total assets.
[14] Firm value, q, is defined as the sum of market value and debt book value to book value of total assets.
[15] Average firm value is therefore the annual country averages of the firm-specific q-values.

2003; Rhodes-Kropf and Viswanathan, 2004). The decision to delist may for example be influenced by the value of the company relative to other listed firms. Average firm value does not vary much between exiting firms and firms that remain listed or by type of delisting. But it is slightly lower for going private firms compared to M&A firms. Perhaps a positive market sentiment (high average q) induces more M&A because acquiring companies have lower costs of capital or believe to have better growth prospects, while high average q leads to fewer going private transactions because it seems more expensive to buy listed companies in good times.

We use average market liquidity as an indicator of trends in liquidity, since there the firm level information is relatively scarce. It is measured as yearly country averages of the ratio between common shares traded and common shares outstanding. Stock market liquidity tends to be high for merged or acquired companies, but low for firms going private or bankrupt, if we compare to firms that remain listed. Apparently, low stock market liquidity is an incentive to delist (Bharath and Dittmar, 2006).

We also include aggregate measures of M&A activity (annual country M&A frequencies) and private equity investment (Deloitte, 2005) to be able to control for macro-trends which happen by chance to be correlated with corporate governance policies. For example it is well known that M&A tend to come in waves which appear to be serially correlated, but difficult to explain by standard economic variables (Harford, 2005). We find that merged or acquired companies are preceded by a high incidence of previous M&A, but going private transactions appear not to be preceded by a higher going private frequency. Since the surge of private equity investment are said to be partially motivated by a wish to get around governance costs in listed companies, this involves some risk of overcontrolling, but out results remain the same if we leave this variable out. We also see few differences between M&A and going private transactions related to the development of GDP.

As for the governance policy variables, M&A tends to occur in countries and time periods with slightly better investor protection and slightly better overall governance. Investor protection is also slightly higher in companies that later go private. Previous

increases in investor protection appear to be smaller among firms that subsequently delist, particularly among those delisting by bankruptcy/liquidation and M&A.

Summing up, companies being delisted by merger or acquisition are attractive in the sense that they tend to be larger, have higher accounting returns and growth rates than firms that remain listed. In contrast, the firms going private or into bankruptcy/liquidation are relatively unattractive measured on the same variables.

Table 1
Descriptive statistics

Variable explanations: Ownership concentration is defined as the ratio between closely-held shares and common shares outstanding. Closely-held shares represents shares held by insiders. Firm value, q, is defined as market value plus total debt to total assets. Average firm value is annual country averages based upon the firm-specific q's. The total private equity investment ratio is the ratio between total private equity investments and stock market value by year and country. Information on private equity investments is gathered from Deloitte (2005). Stock liquidity is measured as country averages (per year) of common shares traded relatively to common shares outstanding. The M&A frequency is the annual country averages. Newlist is a dummy variable which assigns a firm with the value one if the firm has become listed after 1995 otherwise zero. Growth in GDP is from OECD.

The World Bank governance variable is defined as the sum of three indicators: voice and accountability, regulatory quality, and rule of law. The LSSV Pagano-Volpin investor protection index (Pagano and Volpin, 2005b) is the updated investor protection index by La Porta et al. (1998). Code adoption is a dummy variable with the value of one (and onwards) when a country's first corporate governance code is adopted.

Number of observations and standard deviations are reported in brackets.

	Overall average	Remaining Listed	M&A	Going private	Bankruptcy & Liquidation
Ownership concentration, %	44.9	44.3	46.1	55.8	39.9
	[40511]	[36446]	[1571]	[853]	[86]
	[28.1]	[27.5]	[29.1]	[30.5]	[26.5]
Log of assets	5.153	5.114	5.698	4.553	4.229
	[64880]	[53477]	[1978]	[1324]	[125]
	[2.421]	[2.366]	[2.214]	[1.950]	[1.633]
Sales/employee, per million $	0.519	0.491	0.690	1.062	0.186
	[54617]	[47683]	[1828]	[1098]	[80]
	[4.252]	[3.763]	[7.174]	[13.021]	[0.205]
Equity to assets, %	39.2	40.6	38.6	30.1	27.5
	[61981]	[53437]	[1977]	[1324]	[125]
	[36.4]	[35.4]	[33.3]	[48.4]	[60.0]
One-year growth in sales, %	12.7	13.3	8.7	5.9	7.4
	[56949]	[49814]	[1937]	[1271]	[123]
	[34.2]	[34.5]	[31.0]	[38.6]	[44.3]
Return on assets, %	2.1	2.2	3.5	-3.9	-10.1
	[56690]	[49631]	[1935]	[1269]	[124]
	[23.7]	[23.9]	[16.9]	[25.5]	[26.4]
Firm value, q	1.334	1.354	1.106	1.107	1.238
	[55320]	[50665]	[1961]	[1312]	[125]
	[1.498]	[1.526]	[1.083]	[1.276]	[1.773]
Average firm value	1.343	1.340	1.408	1.271	1.304
	[65454]	[53798]	[1979]	[1326]	[125]
	[0.401]	[0.415]	[0.404]	[0.369]	[0.336]
Total Private Equity investments relative to market value, %	0.633	0.629	0.644	0.639	0.667
	[65080]	[50071]	[1914]	[1235]	[121]
	[0.381]	[0.388]	[0.335]	[0.399]	[0.261]
Stock liquidity	0.289	0.286	0.309	0.248	0.230
	[61441]	[50385]	[1918]	[1235]	[118]
	[0.222]	[0.223]	[0.217]	[0.193]	[0.155]
M&A frequency	0.038	0.037	0.053	0.037	0.039
	[65454]	[53798]	[1979]	[1326]	[125]
	[0.023]	[0.023]	[0.023]	[0.024]	[0.027]
Newlist	0.370	0.414	0.309	0.544	0.552
	[65454]	[53798]	[1979]	[1326]	[125]
	[0.483]	[0.493]	[0.462]	[0.498]	[0.499]
GDP growth	4.868	4.873	4.909	4.812	4.611
	[65080]	[53461]	[1979]	[1314]	[125]
	[1.956]	[1.992]	[1.885]	[2.166]	[1.474]
World Bank Governance index	4.260	4.235	4.367	4.173	4.284
	[59543]	[49349]	[1818]	[1292]	[116]
	[0.786]	[0.801]	[0.707]	[0.801]	[0.776]
LSSV Pagano-Volpin investor protection index	3.733	3.696	3.983	3.786	3.670
	[63369]	[51954]	[1959]	[1243]	[121]
	[1.163]	[1.153]	[1.164]	[1.087]	[1.227]
Code adoption	0.735	0.728	0.809	0.775	0.800
	[65454]	[53798]	[1979]	[1326]	[125]
	[0.441]	[0.445]	[0.393]	[0.418]	[0.402]

Table 2

Correlation matrix

Variable explanations: The World Bank governance variable is defined as the sum of three indicators: voice and accountability, regulatory quality, and rule of law. The LSSV Pagano-Volpin investor protection index (Pagano and Volpin, 2005b) is the updated investor protection index by La Porta et al. (1998). Code adoption is a dummy variable with the value of one (and onwards) when a country's first corporate governance code is adopted.

Ownership concentration is defined as the ratio between closely-held shares and common shares outstanding. Closely-held shares represents shares held by insiders. Firm value, q, is defined as market value plus total debt to total assets. Average firm value is annual country averages based upon the firm-specific q's. Stock liquidity is measured as country averages (per year) of common shares traded relatively to common shares outstanding. The M&A frequency is the annual country averages. The total private equity investment ratio is the ratio between total private equity investments and stock market value by year and country. Information on private equity investments is gathered from Deloitte (2005). Newlist is a dummy variable which assigns a firm with the value one if the firm has become listed after 1995 otherwise zero. Growth in GDP is from OECD. The * indicates statistical significance at the 5% level.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Delisting-dummy	1																			
2	M&A-dummy	0.7368*	1																		
3	Going private-dummy	0.6239*	-0.0298*	1																	
4	Bankruptcy & Liquidation-dummy	0.1876*	-0.0090*	-0.0076	1																
5	World Bank Governance index	0.0229*	0.0370*	-0.0093*	0.0064	1															
6	LSSV Pagano-Volpin investor protection index	0.0433*	0.0451*	0.0131*	0.0022	0.2627*	1														
7	Code adoption	0.0421*	0.0340*	0.0223*	0.0095*	0.1176*	0.5036*	1													
8	Ownership concentration	0.0438*	0.0115*	0.0604*	-0.0079	-0.2964*	-0.3651*	-0.1905*	1												
9	Log of total assets	0.0094*	0.0472*	-0.0371*	-0.0176*	-0.0637*	-0.1025*	-0.0486*	-0.0666*	1											
10	Sales per employee	0.0175*	0.0080	0.0189*	-0.0030	0.0012	-0.0332*	-0.0130*	0.0298*	0.0459*	1										
11	Equity to assets	-0.0384*	-0.0093*	-0.0441*	-0.0168*	0.0382*	0.0778*	0.0497*	-0.1019*	-0.1443*	0.0049	1									
12	Sales growth	-0.0399*	-0.0241*	-0.0314*	-0.0076	-0.0422*	0.0022	-0.0219*	-0.0197*	-0.0326*	0.0138*	0.0484*	1								
13	Return on assets	-0.0191*	0.0135*	-0.0391*	-0.0247*	-0.0580*	-0.0624*	-0.0558*	0.0182*	0.1495*	0.0294*	0.0839*	0.0687*	1							
14	Firm value, q	-0.0392*	-0.0303*	-0.0241*	-0.0033	0.0393*	0.0578*	0.0413*	-0.0396*	-0.2647*	-0.0151*	0.0605*	0.1689*	-0.0401*	1						
15	Average firm value	0.0032	0.0291*	-0.0281*	-0.0031	0.2027*	0.2936*	0.1781*	-0.2183*	-0.1057*	0.0005	0.0667*	0.1212*	0.0181*	0.2709*	1					
16	Stock liquidity	0.0073	0.0260*	-0.0174*	-0.0082*	0.0678*	0.0163*	-0.0566*	-0.0112*	-0.0263*	0.0080	-0.0140*	0.0088*	0.0274*	0.0192*	0.0418*	1				
17	M&A frequency	0.0756*	0.1162*	-0.0195*	0.0008	0.3011*	0.3824*	0.2476*	-0.2500*	-0.0543*	-0.0062	0.0268*	0.0105*	0.0018	0.0740*	0.2989*	0.1902*	1			
18	Total private equity investments ratio	0.0085*	0.0063	0.0037	0.0066	0.1954*	0.2893*	0.3028*	-0.1628*	-0.0720*	-0.0051	0.0366*	-0.0165*	-0.0468*	0.0221*	0.1430*	0.0192*	0.0650*	1		
19	Newlist	0.0090*	-0.0342*	0.0493*	0.0154*	-0.0988*	-0.0444*	0.0762*	0.0007	-0.2794*	-0.0155*	0.1245*	0.1016*	-0.1290*	0.1901*	-0.0348*	-0.0441*	-0.1339*	0.0280*	1	
20	GDP growth	-0.0033	0.0031	-0.0068	-0.0064	0.0540*	0.2780*	0.1147*	-0.2070*	-0.0471*	-0.0209*	0.0770*	0.0712*	-0.0005	0.0531*	0.1978*	0.0757*	0.0063*	0.1116*	-0.0296*	1

Table 2 presents the correlation matrix. For overall delistings we observe many significant, but small correlations with our explanatory variables. Delisted firms are slightly larger, have more concentrated ownership and higher sales per employee, but do worse in terms of equity-to-assets ratio, sales growth, return on assets, cash flow and firm value. The correlation analysis tends to confirm the impression that M&A targets are attractive, while firms going private are poor performers. Firms that are subsequently acquired or merged tend to be larger, have more concentrated ownership, be more profitable, be lower valued, to have been listed for longer, and to be listed in countries with better overall corporate governance (according to the World Bank index), but to grow slower than other firms. Firms that later go private tend to be smaller, have more concentrated ownership, to underperform in terms of sales growth, firm value and accounting profitability, and to be located in countries with better investor protection, but a poorer World Bank governance score. Firms that subsequently enter into bankruptcy or liquidation tend to be small and to have less equity. The correlations between explanatory variables are low so multicollinearity is not an important problem.

In previous analysis we found that the cash flow to sales ratio (a possible measure of free cash flow) was highly correlated with return on assets and decided to leave it out. We also experimented with a number of other firm specific variables (e.g. asset turnover, dividends) and national institutional variables (e.g. corporate tax rates, interest rates, the Djankov et al. (2007) anti self-dealing index), which turned out not to have significant effects or to be highly correlated with other explanatory variables. We therefore omitted them in subsequent analysis.

4. Results

4.1. Overall delistings

We begin by estimating determinants of overall delisting using logistic regression and determinants of delisting by type using multinomial logistic regression while taking into consideration clustering of residuals by firm. We estimate the probability of delisting in year t relative to remaining listed (or more precisely the log odds ratio) as a

function of a set of explanatory variables measured in the year prior to delisting (year t-1). We control for fixed industry effects[16] and (in subsequent models) for fixed country effects. We assume a linear relationship between the likelihood of delisting and measures of governance regulation mainly since the countries analyzed are all at a high investor protection level. However, we acknowledge that our main finding may imply a non-linear relationship.

We find that a higher level of investor protection is associated with more delistings (model 1), both by M&A and going private transactions (model 2), but fewer bankruptcy/liquidation cases. The positive effect on M&A transactions is consistent with previous results by Rossi and Volpin (2004), and Pagano and Volpin (2006) and can be regarded as an indication of a more active market for corporate control in nations with stronger protection of minority investors. Moreover, better minority investor protection also leads to more going private transactions which appear to support the overregulation hypothesis: apparently stronger protection of minority investors makes it *less* attractive to remain publicly listed.

We test the robustness of this result in subsequent tables. For example there are many dimensions of corporate governance policy and it is unclear whether they are all adequately captured by our policy variables, and we therefore examine the impact of fixed country effects and other governance policy measures. Moreover, theoretically corporate governance policy may be an endogenous variable which needs to be taken into account when estimating its effects. Finally, a complete analysis also needs to take into account new listings. It turns out that the frequency of new listings is insignificantly or negatively correlated with the available measures of corporate governance quality. We address these issues later in the paper after reviewing the impact of firm specific effects on both overall delistings and delisting types.

As for the control variables we find that firms are more likely to delist (regardless of type) if they grow slowly, have low firm value (q) and low liquidity (i.e. if market liquidity is low or ownership concentration is high).

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[16] We have information of the firms' main industry (SIC codes) affiliation from which we aggregate industry affiliation to 25 different industry groups.

Table 3
Determinants of Delisting

(1) is a logit regression where the response variable is delisting. (2) is a multinomial logit regression where the response variable outcomes (delisted) are either due to a merger or acquisition, going private transaction, or bankruptcy and liquidation.

Variable explanations: Ownership concentration is defined as the ratio between closely-held shares and common shares outstanding. Closely-held shares represents shares held by insiders. Firm value, q, is defined as market value plus total debt to total assets. Average firm value is annual country averages based upon the firm-specific q's. The (total) private equity investment ratio is the ratio between total private equity investments and stock market value by year and country. Information on private equity investments is gathered from Deloitte (2005). Stock liquidity is measured as country averages (per year) of common shares traded relatively to common shares outstanding. The M&A frequency is the annual country averages. Newlist is a dummy variable which assigns a firm with the value one if the firm has become listed after 1995 otherwise zero. Growth in GDP is from OECD. The LSSV Pagano-Volpin investor protection index (Pagano and Volpin, 2005b) is the updated investor protection index by La Porta et al. (1998).

Robust standard errors are reported below parameter estimates. ***, **, * indicate statistical significance at 1%, 5% and 10% respectively.

Explanatory variables	(1) Delisted	(2) M&A	Going private	Bankruptcy & Liquidation
		Delisting due to:		
Ownership concentration	1.243 ***	1.247 ***	1.641 ***	-0.738
	0.106	0.127	0.202	0.615
Log of assets	0.053 ***	0.122 ***	-0.078 ***	-0.077
	0.012	0.015	0.022	0.089
Sales/employee	0.006	0.004	0.009 **	-2.889 *
	0.004	0.004	0.004	1.532
Equity to assets	-0.003 ***	0.001	-0.006 ***	-0.014 ***
	0.001	0.001	0.001	0.003
Growth in sales	-0.005 ***	-0.005 ***	-0.003 ***	0.000
	0.001	0.001	0.001	0.005
Return on assets	-0.005 **	0.002	-0.011 ***	-0.018 **
	0.001	0.001	0.002	0.008
Firm value, q	-0.157 ***	-0.170 ***	-0.176 ***	-0.135
	0.026	0.035	0.044	0.142
Average firm value	0.078	0.197 **	-0.141	0.473
	0.080	0.097	0.147	0.516
Stock liquidity	-0.604 ***	-0.292 **	-1.240 ***	-2.518 *
	0.129	0.145	0.263	1.325
M&A frequency	19.046 ***	27.823 ***	1.752	-13.722
	1.126	1.368	2.125	11.211
Private equity investment ratio	14.489 **	4.328	26.791 **	21.267
	6.109	7.858	11.213	20.643
Newlist	0.011	-0.170 **	0.305 ***	-0.006
	0.058	0.073	0.097	0.375
GDP growth	0.043 ***	0.072 ***	0.021	-0.028
	0.014	0.016	0.027	0.067
LSSV Pagano-Volpin investor protection index	0.098 ***	0.128 ***	0.105 **	-0.654 ***
	0.028	0.036	0.050	0.198
Industry dummies	YES	YES	YES	YES
Observations (firm-year)	31607	31607		
Log pseudolikelihood	-7348	-8625		
Pseudo R2	0.042	0.069		

According to the recent delisting wave there is a possibility of a time trend in delistings which should be controlled for in the analysis. We therefore control for trend or wave effects on M&A and going private transactions by including past M&A delisting frequency by country and aggregate private equity investments in the country as control variables. Both appear to lead to more delistings. We believe that these measures are able to control for the potential time trend since they individually captures the disaggregated time effects on the type of delisting. Regarding, our focus on going private transactions we would argue that our measure of volume of private equity investments relatively to public stock market value would capture the main time trend in this period.

In our model both firm valuation and country valuation (average firm value) serve as controls. The delisting decision is thus controlled for the firm-specific value relatively to the average value of other listed firms.[17] The reason why we employ both measures is that they capture a firm and market valuation effect on the likelihood of delisting.

There are interesting differences between types of delistings. Companies going private are smaller and less profitable than merged or acquired companies.

Relatively few companies exit by bankruptcy or liquidation and the two groups are not homogenous which implies that it may be difficult to find significant results, but we choose to estimate only one set of determinants for them given their limited numerical significance. Nevertheless, the results conform well to our a priori expectations. We find that bankrupted and liquidated companies are likely to be less profitable, to have lower equity-to-asset ratios, and to be more common when stock market liquidity is low. Finally – as expected – better investor protection is found to reduce the probability of bankruptcy and liquidation.

4.2. Analysis of going private transactions

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[17] Instead if the difference between firm-specific q and country average q is employed as an explanatory variable we find that when a firm is relatively 'overvalued' compared to country average it is less likely to delist (results not reported).

In table 4 we focus on going private transactions which is our primarily focus. The impact of the control variables is broadly similar to what was found in table 3 so we comment only on the measures of corporate governance regulation. We include more regulatory measures and break down the sample to get more information on how regulation affects going private transactions.

In table 4 model 1, we introduce a measure of general legal infrastructure (a modified version of the World Bank governance index) in addition to the investor protection index. It could be interpreted as an overall governance measure. We also control for fixed country effects to capture country differences apart from governance regulation. We find that the World Bank governance index is associated with a lower probability of going private, while a high level of minority investor protection tends to increase this probability (as we reported in table 3). The World Bank governance index combines measures of political freedom (e.g. freedom of speech, association, voting), regulatory quality (e.g. costs of regulation, efficient enforcement, presence of generally accepted codes company law) and quality of the legal system (e.g. quality of contract enforcement and court system). Apparently, better overall governance measured in this way makes it more attractive to stay listed, for example because of lower transaction costs, better monitoring and higher investor confidence. Measuring these effects using odds ratios (not reported) the odds of going private go up by approximately 90 percent when the minority investor protection index increases by one unit. The odds of favour of going private go down by approximately 60 percent when the overall governance index increases by one unit. Large year-on-year changes in these specific indices are quite rare, but there are still large cross-country differences.[18]

In table 4 model 2 we add code adoption as an additional independent (binary) variable indicating whether a country has adopted a corporate governance code in a given year and a value of 0 if it has not. Our estimates indicate that the adoption of corporate governance codes has led to more going private transactions which could be seen as a response to increased corporate governance bureaucracy. However, code adoption is

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[18] If a cumulative measure of changes in the LSSVPV index is used as an explanatory variable a significantly positive impact from this variable is found on the likelihood of going private (results not reported).

highly correlated (+0.5) with the LSSVPV index, so it may be difficult to disentangle the effect of these two variables.

In table 4 model 3 we break down the sample by period (before and after the stock market high in 2000). We find that our measures of investor protection regulation had no significant impact in the pre-2001 period when stock prices were increasing rapidly. In contrast, the effects are significant in the post-2000 period and somewhat stronger in magnitude than for the overall period (c.f. model 1). Apparently both investor protection and overall governance regulation are less important for delisting decisions in a favourable stock market climate when stock price increases outweigh governance costs.

In table 4 model 4 we check for differences between newly listed firms, i.e. firms listed after 1995 and firms listed before the beginning of the period (1995). It turns out that the impact of the governance regulation variables is significant with the same signs for both groups, although the effect of overall governance regulation is stronger for newly listed firms.

In table 4 model 5 we check for differences between small and large firms. We define firms as large if they have above average sales (per country and year), and small if they have sales below average. We find that the effects of governance regulation are weaker and insignificant for large firms, while it is stronger and significant for small firms.[19] Presumably, the benefits of being listed are larger for large firms while fixed administration costs are easier to carry for large firms. Marginal variations in corporate governance regulation therefore have less of an impact on large firms, while the costs can more easily come to exceed the benefits for small firms. This is similar to Block (2004), Engel et al. (2005) and Kamar et al. (2006), who find a particularly significant effect of the Sarbanes-Oxley act on going private for small firms.

In table 4 model 6 we examine differences between companies with low and high rates of return on accounting assets (defined by ROA > 0 and ROA ≤ 0). We find that the

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[19] This results hold if instead of the mean, as robustness check, a similar test is performed using the 75% percentile.

effect of investor protection is insignificant for companies with negative rates of return whose delisting probably has more to do with firm specific financial difficulties. Apparently, higher protection of minority investors leads more well-performing companies to go private. In contrast, the high overall governance standards appear to lead to significantly fewer delistings for both profitable and unprofitable companies. In contrast, Leuz et al. (2006) find that there is more of a Sarbanes-Oxley effect among poorly performing firms in the US.

We also examined whether the influence of governance regulation differed by ownership concentration (not reported). It might be that companies with high levels ownership concentration are more likely to go private when the private benefits of control are lower, particularly if the owners are insiders as is common in continental Europe. We do find that investor protection has a positive significant impact on going private transactions among companies with a concentrated ownership but no impact on companies with dispersed ownership.[20]

Finally, we also find that the effects of governance regulation are robust if we drop the Eastern European countries in the sample.

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[20] Concentrated ownership is defined as either above the mean or median ownership concentration.

Table 4

Determinants of Going private

(1) - (6) are logit regression models where the response variable equals zero if listed and one if going private.

Variable explanations: Ownership concentration is defined as the ratio between closely-held shares and common shares outstanding. Closely-held shares represents shares held by insiders. Firm value, q, is defined as market value plus total debt to total assets. Average firm value is annual country averages based upon the firm-specific q's. The (total) private equity investment ratio is the ratio between total private equity investments and stock market value by year and country. Information on private equity investments is gathered from Deloitte (2005). Stock liquidity is measured as country averages (per year) of common shares traded relatively to common shares outstanding. The M&A frequency is the annual country averages. Newlist is a dummy variable which assigns a firm with the value one if the firm has become listed after 1995 otherwise zero. Growth in GDP is from OECD. The World Bank governance variable is defined as the sum of three indicators: voice and accountability, regulatory quality, and rule of law. The LSSV Pagano-Volpin investor protection index (Pagano and Volpin, 2005b) is the updated investor protection index by La Porta et al. (1998). Code adoption is a dummy variable with the value of one (and onwards) when a country's first corporate governance code is adopted.

Newly listed are firms listed after 1995. If firm-specific sales are above or equals the average sales per year and country in the delisting year they are characterized as large firms. Otherwise as small firms. Firms with ROA above zero are denoted as positive ROA firms, otherwise as negative ROA firms.

Robust standard errors are reported below parameter estimates. ***, **, * indicate statistical significance at 1%, 5% and 10% respectively.

Explanatory variables	(1)	(2)	(3) Before 2001	(3) After 2000	(4) Newly listed	(4) Listed before 1995	(5) Large	(5) Small	(6) Positive ROA	(6) Negative ROA
Ownership concentration	1.813 ***	1.807 ***	1.955 ***	1.782 ***	0.881 ***	2.440 ***	2.864 ***	1.669 ***	2.211 ***	0.924 ***
	0.210	0.210	0.335	0.267	0.322	0.280	0.765	0.221	0.276	0.339
Log of assets	-0.078 ***	-0.080 ***	-0.118 ***	-0.058 **	-0.047	-0.087 ***	-0.301 **	-0.003	-0.060 **	-0.112 **
	0.023	0.023	0.037	0.029	0.038	0.031	0.138	0.032	0.029	0.044
Sales/employee	0.024 ***	0.024 ***	0.033 ***	0.023 ***	0.025 **	0.020 ***	0.016	0.034 ***	0.026 ***	0.030
	0.007	0.007	0.012	0.008	0.013	0.004	0.017	0.011	0.007	0.038
Equity to assets	-0.006 ***	-0.006 ***	-0.009 ***	-0.004 ***	-0.004 ***	-0.006 ***	-0.008 *	-0.006 ***	-0.005 **	-0.006 ***
	0.001	0.001	0.002	0.001	0.001	0.002	0.005	0.001	0.002	0.001
Growth in sales	-0.003 **	-0.003 **	-0.003	-0.002	-0.002	-0.004 *	0.009 *	-0.004 ***	-0.007 ***	0.000
	0.001	0.001	0.002	0.002	0.002	0.002	0.005	0.001	0.002	0.002
Return on assets	-0.011 ***	-0.010 ***	-0.015 ***	-0.007 **	-0.006 **	-0.019 ***	0.013	-0.012 ***	-0.004	-0.008 ***
	0.002	0.002	0.004	0.003	0.003	0.006	0.017	0.002	0.007	0.003
Firm value, q	-0.164 ***	-0.164 ***	-0.227 ***	-0.096 *	-0.117 **	-0.200 ***	-0.146	-0.157 ***	-0.043	-0.275 ***
	0.045	0.045	0.072	0.055	0.056	0.072	0.180	0.046	0.067	0.064
Average firm value	-0.869 ***	-0.825 ***	0.738	-2.469 **	-1.877 ***	-0.440	-2.484 **	-0.789 ***	-1.134 ***	-0.280
	0.244	0.243	0.459	0.995	0.434	0.307	0.986	0.252	0.306	0.404
Stock liquidity	-1.136 ***	-1.011 ***	-2.408 ***	0.185	-0.681	-1.375 ***	-0.998	-1.159 ***	-1.073 ***	-1.972 **
	0.375	0.385	0.719	0.730	0.775	0.484	1.683	0.378	0.409	0.827
M&A frequency	3.205	2.894	6.325	5.395	0.283	7.976 **	19.272 *	2.109	7.802 **	-1.053
	2.464	2.460	4.732	3.519	3.867	3.388	10.225	2.567	3.074	4.240
Private equity investment ratio	14.169	12.015	51.881 *	0.901	16.788	11.905	54.291 **	9.116	3.838	28.309 *
	11.252	11.514	30.492	12.897	14.663	17.062	21.378	12.875	17.294	15.123
Newlist	0.118	0.097	-0.118	0.087	-0.959 ***		-0.344	0.184 *	0.245 **	-0.130
	0.100	0.101	0.198	0.123	0.299		0.483	0.103	0.118	0.176
GDP growth	0.017	0.014	0.029	0.004	0.084	-0.008	-0.122	0.028	0.020	0.011
	0.032	0.032	0.050	0.062	0.057	0.040	0.125	0.034	0.039	0.061
LSSV Pagano-Volpin investor protection index	0.618 ***	0.576 ***	0.138	1.058 ***	1.114 ***	0.656 ***	0.613	0.636 ***	0.832 ***	0.184
	0.183	0.196	0.212	0.409	0.387	0.254	0.386	0.210	0.257	0.203
World Bank Governance index	-1.010 ***	-1.056 ***	-0.285	-1.817 ***	-1.915 ***	-0.640 **	-0.946	-1.038 ***	-0.789 ***	-1.288 ***
	0.211	0.215	0.385	0.495	0.397	0.263	0.793	0.221	0.250	0.403
Code adoption		0.294 *								
		0.154								
Country dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations (firm-year)	26939	26939	15255	11576	9297	17509	3618	22523	20821	5927
Log pseudolikelihood	-2758	-2756	-1140	-1569	-1108	-1596	-214	-2507	-1812	-875
Pseudo R2	0.071	0.072	0.100	0.056	0.066	0.100	0.163	0.066	0.082	0.088

4.3. Endogenous politics

Recent advances in the political economy of corporate governance have emphasized that corporate governance policies are to some extent endogenously determined (Rajan and Zingales, 2003; Pagano and Volpin, 2001, 2005b; Perotti and von Thadden, 2006; Roe, 2006). Among other factors such as legal origin, cultural, ideology, demography are believed to shape corporate governance regulation (e.g. La Porta et al., 1998; Roe, 2003; Alesina and Glaeser, 2004). This implies that statistical estimates of the effects of these policies need to take into consideration how the policies are determined. In this section we attempt to take a step in this direction. Following the literature we focus on the legal system, the voting system and unionization as likely determinants of corporate governance policies.[21]

The importance of history in shaping corporate governance has been emphasized by La Porta et al. (1998), who argue that the legal origin (civil vs. common law) remains a key determinant of corporate governance policies. It is documented that (market-supporting) common law countries are associated with stronger investor protection (e.g. La Porta et al., 1998; Djankov et al., 2007). Roe (1994a, 1994b) and Bebchuck and Roe (1999) argue that rent seeking and transaction costs can contribute to path dependency. Furthermore, La Porta et al. (1998) state that "in principle a strong system of legal enforcement could substitute for weak rules". Hence, according to this legal systems are formed by both legal design (origin) and legal enforcement. Empirically in Western Europe enforcement seems to be greater in civil law countries compared to common law countries (La Porta et al., 1998; Djankov et al., 2003b). Supporting this Pagano and Volpin (2001) argue that both regulatory design and enforcement activity affect financial regulation and capital markets development. Hence, it could be that only focusing on legal design (origins) as determinant of investor protection neglects other legal structures, especially within civil law countries, which might affect investor protection.

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[21] The legal origin variable equals 0 when common law country and 1 if civil law country (La Porta et al., 1998). The proportionality index (Pagano and Volpin, 2005b) equals 3 if 100 percent of seats are assigned via a proportional rule, 2 if the majority of seats are assigned by this rule, 1 if a minority of seats are assigned proportionally, and 0 if no seats are assigned this way. For example Scandinavian countries are given the value of 3, while UK's measure is 0. Unionization is measured as annual labor union density rates (Visser, 2006).

The voting system is another relevant governance determinant since Pagano and Volpin (2005b) argue that the design of political voting systems (proportionality) affects investor protection.[22] Proportionality of the voting system may influence the political bargaining game between investors and employees (Pagano and Volpin, 2005a). The argument here is that proportional voting pushes political parties to cater more to the preferences of social groups with homogeneous preferences (e.g. employees), while politicians in non-proportional voting systems have to do more to please the pivotal district dominated by residual groups (e.g. rentiers), which are not ideologically committed. Pagano and Volpin (2005b) empirically found that proportional electoral systems are associated with weaker investor protection. They further propose that other relevant political variables (e.g. competition between political parties and democratic tenure) affect a country's overall system. In addition, Perotti and von Thadden (2006) maintain that the behaviour of voters is important since if the wealth of the median voters increase political support should move towards favouring equity markets.

Roe (2003) suggested that concentrated ownership emerges as a counterweight to organized labor in social democratic countries. Unionization can be regarded as a proxy for social democracy. For example, strong unions may have a vested interest in takeover defenses, which protect firms and their employees against takeovers contrary to the best interests of minority investors. Pagano and Volpin (2005a) also argue that managers use employees as "shark repellents" which lower firm attractiveness and through that presumably prevent takeovers. Naturally, this is not necessarily in the interests of the shareholders. Therefore it could be argued that countries with strong unions have poorer investor protection. This is also suggested by Pagano and Volpin (2005b) who found that employment protection is usually higher in countries with proportional voting system (countries with low investor protection).

Besides using unionization as instrument we also construct two combined variables following the arguments given above: legal origin combined with rule of law (legal system), and proportionality combined with voice and accountability (voting system).

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[22] If the electoral system is proportional winning a majority of the votes is crucial, whereas it is majoritarian when winning a majority of districts ensures victory.

Rule of law and voice and accountability (both published by the World Bank) add additional elements to our policy measures as highlighted in the literature. Rule of law measures for instance the quality of contract enforcement while voice and accountability measures political behaviour, for example whether a country's population tends to vote in elections or has freedom of speech.

The rationale for the combined legal variable is as argued earlier that legal design and enforcement may substitute each other (La Porta el., 1998). Hence, legal origin can be considered as the legal design of a country while rule of law is a proxy for enforcement. Note that legal origin is often perceived as exogenous due to its historical origin. This interaction between legal origin and rule of law should then capture a broader measure of the legal system quality in both civil and common law countries. For example this measure whether a civil law country, with arguably a poorer legal design (could be debated), compensates by having greater public enforcement. Data also suggests that the civil law countries with better rule of law (enforcement) have better investor protection (Scandinavian countries) than other civil law countries. Common law countries seem to have strong enforcement which might indicate that enforcement especially has an impact in civil law countries.

The proportionality of the voting system can be seen as the design of a country's electoral system. This is largely historically determined and therefore exogenous. According to the literature the voting system jointly interacts with other political determinants such as state of democracy, electoral participation etc. Therefore we suggest that a more precise estimate of the system is the combined effect of political proportionality of the voting system and "voice and accountability" within a country. The idea is that a country might have an acknowledged voting system design but if democracy is weak and people do not vote then the overall voting system is not necessarily well functioning. The combined variable takes both dimensions into account.

We regard these background variables as suitable econometric instruments of investor protection policy because they are unlikely to have a direct impact on the going private

frequency but affects investor protection. Specifically we would argue that legal origin, rule of law, proportionality, voice and accountability and unionization affects a firm equally whether it is listed or not.

Table 5 provides correlation coefficients with observations by country and year. It turns out that delisting frequencies at the country level are not significantly correlated with investor protection, regardless of type. We note also that investor protection and overall governance are not significantly correlated (in fact the numerical correlation is negative at the country level). It may be meaningful therefore to talk about different dimensions of corporate governance regulation. Investor protection is positively associated with the anti self-dealing index proposed by Djankov et al. (2007) and with a measure of regulatory costs (Jackson, 2005).

Table 5

Correlation matrix of alternative policy measures

Variable explanations: The delisting frequencies are determined by country and year. The LSSV Pagano-Volpin investor protection index (Pagano and Volpin, 2005b) is the updated investor protection index by La Porta et al. (1998). The World Bank governance index is defined as the sum of the indices of voice&accountability, regulatory quality, and rule of law. The anti self-dealing index is from Djankov et al. (2007). Regulatory costs and staff information is from Jackson (2005). The proportionality index and unionization is from Pagano and Volpin (2005b) and measures the proportionality of a country's voting system. It equals 3 if 100 percent of the seats are assigned proportionally, and 0 if no seats are assigned this way. Legal origin equals 0 if it is a common law country and 1 if it is a civil law country (constructed by La Porta et al. (1998)). The combined voting system variable is the proportionality index multiplied by the voice and accountability index (World Bank). Whereas the combined legal system variable is legal origin multiplied with rule of law (World Bank). Unionization is measured as annual labor union density rates (from Visser (2006)). The * indicates statistical significance at the 5% level.

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Total delisting-frequency	1												
2	M&A delisting-frequency	0.3852*	1											
3	Going private delisting-frequency	0.8497*	-0.1433*	1										
4	Bankruptcy & Liquidation delisting-frequency	0.3174*	-0.0818	0.2591*	1									
5	IPO-frequency	-0.1403	-0.0402	-0.1232	-0.0555	1								
6	LSSV Pagano-Volpin investor protection index	0.1505	0.1095	0.1108	-0.1110	-0.0203	1							
7	World Bank Governance index	-0.0445	0.3278*	-0.2200*	-0.1362	-0.1450	-0.1563	1						
8	Anti self-dealing index	0.1462*	0.4291*	-0.0861	-0.0169	-0.0729	0.4767*	0.2490*	1					
9	Regulatory cost	0.1483	0.3400*	-0.1061	-0.0663	-0.0632	0.2956*	0.3544*	0.6552*	1				
10	Regulatory staff	0.1247	0.2460*	-0.0513	-0.0697	-0.0783	0.3260*	-0.0998	0.3073*	0.5834*	1			
11	Proportionality index	-0.0417	-0.1364	0.0827	-0.0992	-0.0773	-0.4445*	0.1455	-0.5605*	-0.2104*	0.1651*	1		
12	Unionization	-0.0896	0.0474	-0.1261	-0.1003	0.1108	-0.2228*	0.4459*	-0.1516	-0.0131	-0.0603	0.5568*	1	
13	Legal origin	-0.0844	-0.3465*	0.1068	0.0137	0.0400	-0.5210*	-0.2530*	-0.7030*	-0.9147*	-0.5411*	0.4287*	0.1259	1
14	Combined voting system variable	-0.0469	-0.0864	0.0342	-0.1116	-0.0665	-0.4589*	0.4381*	-0.4441*	-0.1107	0.0943	0.9316*	0.6666*	-0.3512*
15	Combined legal system variable	-0.0794	0.0373	-0.0999	-0.0670	-0.0659	-0.5807*	0.6271*	-0.3181*	-0.6471*	-0.6123*	0.4782*	0.3953*	0.5621*

Interestingly, the frequency of new stock exchange listings appears to be significantly influenced neither by the LSSVPV investor protection measure nor by the modified World Bank governance index. Although we do not have the firm specific information to analyze IPOs in this paper, this indicates that higher corporate governance standards lead to fewer, rather than more IPOs. This is contrary to the findings of Pagano and Volpin (2006), perhaps because they analyze a larger data set which includes developing countries while we confine our attention to European countries which generally have a higher level of investor protection.

We find that both legal origin and the combined legal variable are highly significantly correlated with investor protection. Further, notice that the combined legal variable is not strongly correlated with the going private frequency which justifies the use as an instrument.

Proportionality of the voting system has been suggested as an explanation of low investor protection (Pagano and Volpin, 2005b) and we do observe that this variable is negatively correlated with the LSSVPV investor protection (and anti self-dealing indices). However, it is not significantly correlated with the World Bank governance index. The combined voting (and maybe more precise) variable is also negatively correlated with investor protection, yet not correlated with the going private frequency.

Finally, unionization could be an important determinant of political pressure to protect labor (Roe, 2003), perhaps at the cost of minority investors. In accordance with this hypothesis we observe that unionization (Visser, 2006) is in fact strongly positively correlated with the World Bank governance index, but strongly negatively correlated with the LSSVPV investor protection index. Interestingly, unionization is positively correlated with proportionality of the voting system (which should point in the direction of less investor protection according to Pagano and Volpin, 2005a). Also notice that the correlation between unionization and going private frequency is low.

In principle, it should be possible to obtain better estimates of the effects of corporate governance policy on delistings by including these variables, particularly to the extent

that they can be regarded as econometric instruments which influence policy without a direct influence on delisting frequencies. In practice, however, our endogenous policy models tend to be quite sensitive to specification. With this caveat table 6 present estimates of the effect of investor protection regulation on the going private frequency, while treating the policy variable as endogenously determined. We now aggregate our information to country averages per year. According to the Hausman tests performed we estimate fixed effects models.

Table 6

Determinants of Going Private frequency: Two stage least squares instrumental variable regressions on going private frequencies

Variable explanations: The LSSV Pagano-Volpin investor protection index (Pagano and Volpin, 2005b) is the updated investor protection index by La Porta et al. (1998). The combined legal system variable is legal origin (civil law equals 1 and common law equals 0) multiplied by rule of law (Wold Bank). Legal origin is based on La Porta et al. (1998). The combined voting system variable is the proportionality index Pagano and Volpin (2005b) multiplied with the voice and accountability index (World Bank). Proportionality measures the proportionality of a contry's voting system. Proportionality equals 3 if 100 percent of seats are assigned via a proportional rule, 2 if the majority of seats are assigned by this rule, 1 if a minority of seats is assigned proportionally, and 0 if no seats are assigned this way. Unionization is measured as yearly labor union density rates, 1995-2004 (Visser, 2006). Robust standard errors are reported below parameter estimates. ***, **, * indicate statistical significance at 1%, 5% and 10% respectively.

	Going private frequency				
Endogenous policy variable	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
LSSV Pagano-Volpin investor protection index	0.0597 *	0.1644 *	0.0735 ***	0.0736 **	0.0521 **
	0.0309	0.0957	0.0233	0.0300	0.0234
Controls					
Annual country average ownership concentration					0.2845 **
					0.1194
Annual country average sales growth					-0.0007 **
					0.0003
Instrumental variables					
Combined legal system variable	x			x	x
Combined voting system variable		x		x	x
Unionization			x	x	x
Firm effect	FIXED	FIXED	FIXED	FIXED	FIXED
F-value	3.70	2.93	9.81	5.97	3.54
P-value	0.057	0.090	0.002	0.017	0.018
Hansen J Chi-square p-value	0.000	0.000	0.000	0.158	0.007
Observation (country years)	134	134	111	98	98

Table 6 represents different two stage least squares instrumental variable regressions. Model 1 to 3 represents regressions using the instruments separately, while model 4 and 5 uses all three instruments jointly. In the first model the combined legal system variable is employed as instrument. We find that the LSSVPV investor protection variable leads to a higher frequency of going private transactions when the index is instrumented by the combined legal variable, however, it is only significant on a 10 percentage significance level. The usefulness of the instrument is further tested and found valid (the Hansen J test). In the second model where the combined voting system variable is used as instrument we also find a positive effect from investor protection regulation (10 percentage significance level). Also note that the test of overidentification accepts the instrument. When unionization is used as the instrument for investor protection regulation (model 3) we obtain a stronger positive significant result compared to previous models. Again the Hansen J test also accepts the validity of this instrument.

Finally, we employ the three instruments jointly (model 4 and 5) and both models suggests that higher investor protection index is associated with higher going private frequencies (at a 5 percentage significance level). However, the instruments are only accepted when controls are added to our econometric specification. Hence, the result seems less robust when all instruments are jointly applied. In the last model we control for ownership structure (the fraction of closely held shares) and sales growth, but drop other control variables which become insignificant when aggregated to the country level. Countries with high ownership concentration tend to have a significantly higher frequency of going private transactions, whereas countries with high sales growth seem to have a significantly lower going private frequency. Altogether, these results support our previous finding but we acknowledge that these are sensitive to specification. Finally, we do acknowledge that we face the same limitations in finding suitable instruments for governance policy as the remaining governance literature.

5. Discussion

Delistings are an important phenomenon. From 1995 to 2005 30% of the population of listed European firms was delisted for one reason or another. Along with IPOs delistings can be regarded as a measure of the attractiveness of being listed. The hypothesis we test relates to the costs and benefits of investor protection regulation. For example, if new corporate governance regulation – e.g. investor protection or codes – increase bureaucracy and transaction costs without adding sufficient value to minority investors – it may be profitable to take companies private or to merge them to spread the fixed costs of governance over a greater volume. This we would call the overregulation hypothesis. In contrast if the costs of corporate governance regulation are exceeded by increasing efficiency of listed companies, less expropriation of minority investors and greater transparency, companies and their owners will find it more attractive to remain listed. This we think of as the efficiency hypothesis.

Overall delisting frequencies are positively correlated with the measure of investor protection, the classical anti-director rights index updated by Pagano and Volpin (2005b) and with the World Bank governance index. Investor protection also leads to more going private transactions, but higher levels the World Bank index are associated with fewer going private transactions. The positive association between investor protection and delisting by M&A or by going private continues to hold after controlling for relevant control variables in multinomial logistic regression. Thus, better protection of minority investors appears to lead to more going private transactions. The adoption of corporate governance codes also appears to lead to more going private transactions. This is consistent with the overregulation hypothesis, i.e. when costs of investor protection regulation outweigh the benefits. Bruno and Claessens (2007) also found support for the overregulation hypothesis while investigating the effects of corporate governance regulation on firm valuation. We did find some indication that better overall governance (as measured by the World Bank governance index) was associated with fewer going private transactions, which tends to support the efficient regulation hypothesis with regard to overall governance: regulation improves the functioning of stock markets and therefore strengthens the market for corporate control and increases the incentive to remain listed.

Taking into consideration that corporate governance regulation may be an endogenous variable makes the relationship more ambiguous since it is difficult to identify proper economic instruments which influence investor protection without possibly also influencing the going private decision. Nevertheless our best estimates indicate that investor protection regulation tends to increase the frequency of going private transactions.

Obviously, we cannot deduce from this that protecting minority investors is harmful. It may be that gains in investor confidence are well worth the costs of some delisted companies. But our findings do indicate that there are costs as well as benefits of being listed and that these relates to corporate governance regulation. One of the costs might be that lower private benefits of control and more formalized corporate governance practices will lead some companies to delist. While some regulation is necessary and beneficial to stock market development, there may also be limits to regulation, for example how much minority investors should be protected in a zero sum game with other interest groups such as large shareholders, employees or creditors. Moreover, it is not difficult to understand how political processes can sometimes lead to socially wasteful regulation (Djankov et al., 2003; Olson, 2000).

Cross sectional empirical studies in the law and finance tradition indicate that a high level of investor protection is correlated with large stock markets (e.g. La Porta et al., 1998). It is also noteworthy that a country like UK with high investor protection scores does not have particularly many going private transactions whereas Austria and Denmark – which have only recently begun to update their corporate governance policies – experienced a wave of delistings in the 1995-2005 period. It may be necessary to distinguish between short term adjustments and long term cross sectional effects. An alternative interpretation is that the increase in investor protection is a proxy for a series of other regulatory changes relating to self dealing, corporate governance codes and a host of EU directives which in combination may have increased the costs of governance beyond the optimum.

We would not claim that overregulation is the only or even the main cause of delistings in the European stock markets since 2000. One important driver is clearly changes in market value during the boom and bust of the 2000 stock market bubble. Another driver is the emergence of private equity funds in Europe during the same period. We have controlled for both of these factors in our regressions and find that both of them have an important impact. We note, however, that overregulation would influence both market valuations and the emergence of private alternatives to the stock market in a way which would also tend to lead to more delistings. A complete model of the effects of stock market regulation would have to take these complex combined effects of regulation into account.

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