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Wealth effects of delistings announcements in Europe

Abstract

Using a European dataset of 478 delistings, the authors investigate the role of corporate governance in the short-term performance of European stocks around a delisting decision. In order to achieve this, the authors utilize the event study methodology in multiple contexts and cross-sectional regression analysis. This is particularly evident in high shareholder protection environments in a finding, related with investors' perception of the security they experience in the particular market, as well as the afterlife of the under delisting stock and the potential of value creation or destruction. In high investor protection environments the delisting event causes negative abnormal returns both for voluntary and involuntary delistings. The authors conjecture that these delistings, whether referring to LBOs, delistings from secondary listings or BOSOs, are strategic decisions, and in this respect pre-delisting shareholders acknowledge that there is life after delisting. Under low investor protection the above holds only for involuntary ones. Companies failing to meet capital market criteria and voluntary delistings appear to have significantly smaller losses than under bankruptcy firms, on average, on the eve of the delisting event. These abnormal returns are basically affected by the firms' financial soundness and the corporate governance level pertaining in the host market. Cross-sectional regression analysis shows also the inverse relationship between the degree of governance structures and market reaction to delistings announcements.

Keywords: delistings, corporate governance, voluntary, involuntary, public-to-private.
JEL Classification: G30, G33, G34.

Introduction

A spate of delistings from European capital markets has been documented in recent years raising concerns about the advantages of remaining public. Croci and Del Guidice (2014) find a startling 5,579 of delistings during the period 1997-2005, while Thomsen and Vinten (2014) report that out of the 12,612 companies that listed in European exchanges during 1996-2004, 30% were delisted. Pattitoni, Petracci and Zhu (2015) report an increasing number of "hit and run" strategies, implemented by newly issued IPOs in Italy opting to become private few years after an IPO. This tendency is attributed to the tightening of the regulatory framework, tougher listing criteria and unavoidable bankruptcies (Thomsen and Vinten, 2014). Europe is also the epicenter of delistings "at the company's request", customarily referred to as voluntary, primarily via a squeeze out transaction (Martinez and Serve, 2011). At the same time, an increasing number of voluntary buyouts has spurred the introduction of legislation in the German market, calling for new rules and greater costs with respect to voluntary delistings[1].

Martinez and Serve (2011) argue that the decision to go private is made, when the listing costs exceed the benefits of staying public. This means that the first incentive to go private is the costs and the administrative burden of maintaining the listing, which is, for some companies, disproportionate to the benefits thereof[2].

The delisting decision of a public firm is the last important corporate event in the listed life of a firm before the actual exit. For the US companies, delisting takes the form of deregistering with the SEC and becoming "dark companies" (Park, Lee and Park, 2014). In the UK and Continental Europe, a delisted firm remains private and illiquid (Pour and Lasfer, 2013). In this respect, the investigation of the impact of the delisting decision announcement on the short-term stock price behavior, given the differing reasons that may lead to this announcement, is an event that calls for further analysis. Corporate governance may have a great influence on the decision of a firm to go private, the reason being the "over-regulation hypothesis", that is the strengthening of corporate governance regulation that has increased the costs of compliance. We offer unique evidence by relating short-term market reaction to delisting decisions with corporate governance mechanisms in the markets where the firms under scrutiny trade.

The relevant literature identifies three main categories of delisting decision motives; bankruptcy filing (Dawkins, Bhattacharya and Bamber, 2007), failure to meet listing criteria (Harris, Panchapagesan and

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[1] In November 2015, the Act on the implementation of the revised EU Transparency Directive (Revised Transparency Amendment Directive Transposition Act) came into force in Germany.

[2] Nielsson (2013) claims that the declining number of IPOs in the US exchanges has triggered a gradual easing of the regulatory burden with the primary aim to attract small cap firms.

Werner, 2008)[3] and, most importantly during the last 15 years, voluntary delistings (see Das, Shahrokh and Ranjan, 2004; Leuz, Triantis and Wang, 2008). We contribute to the pertinent literature by investigating all main streams of research related to delistings, namely voluntary and involuntary delistings across European countries, and we attempt to relate corporate governance and the going private decision. Finally, we delve into the factors that explain stock price behavior separately for each category of delistings.

To the best of our knowledge this is the first study that investigates a sample of delistings on a Pan-European level and unveils short-term wealth effects at the announcement date in relation to the strength of corporate governance structures that prevail in countries, were delistings take place. The role of corporate governance is highlighted provided the idiosyncrasies of voluntary versus involuntary delistings and their heterogeneous impact on all stakeholders' portfolio value.

Our results demonstrate that delisting decisions are associated with significant stock price losses on the announcement date, as well as several days prior to it. The market reaction is more adverse in delistings attributed to bankruptcies, rather than to company's request. Moreover, the negative market response to delistings announcements is inversely associated with the strength of auditing and reporting standards, the protection of minority shareholders interest, and the strength of investor protection. These results underline the necessity for harmonization of stock exchange regulation in treating all stakeholders, affected by companies' decision to exit capital markets.

Section 1 provides the literature review on delistings and the main research hypotheses. Section 2 describes the dataset and methodology of the research, while section 3 presents the main empirical results of the study. Final section provides the main conclusions of the study.

1. Related literature and hypotheses development

The relevant literature follows three main strands. The first one attempts to investigate the reasons that drive involuntary delistings of firms that are attributed to either the violation of the listing requirements or the poor financial performance (e.g, bankruptcy). Amongst the indicative literature we find the seminal paper by Sanger and Peterson (1990), Baker and Kennedy (2002) and more recently, Dawkins, Bhattacharya and Bamber (2007) and Harris, Panchapagesan and Werner (2008) in the US context, and Park, Lee and Park (2014) in Korea. The second strand of the literature investigates voluntary delistings, including Marosi and Massoud (2007) and Leuz, Triantis and Wang (2008) that examined a mixed sample of deregistrations, Bartlett (2009) that focused exclusively on the US delistings, and Geranio and Zannotti (2012), and Croci and Del Guidice (2014) that explored European delistings, while more recently we find Chaplinsky and Ramchand (2012). The last part of the pertinent literature focuses on the ties between corporate governance and delistings (Thomsen and Vinten, 2014).

Within the first strand of the literature, that of involuntary delistings, the basic distinction made is between firms that went bankrupt (Dawkins, Bhattacharya and Bamber, 2007), and those that failed to meet listing criteria primarily as a result of financial distress (Park, Lee and Park, 2014). Prior research on market reactions to bankruptcy filings reported plunging prices before and at the bankruptcy filing date (Dawkins, Bhattacharya and Bamber, 2007). In Park, Lee and Park (2014) the information effect of the delisting is revisited, using a sample of firms that were involuntarily delisted from the Korean Stock Exchange during the period 2003-2012. Their main findings showed that during one year prior to the involuntary delisting event the price of delisted stocks falls, which suggests that most of the delisted firms were in financial distress and this was already depicted in the market's perception.

Based on the prior research, we conjecture that the involuntary delistings announcements prompted by bankruptcy filings are conceived negatively by the market and, therefore, they are related with significant stock price depreciations. Consequently, we formulate our first hypothesis:

H_1: Involuntary delistings triggered by bankruptcy filings are associated with negative market reaction around the announcement of the delisting decision.

In the case of failure to meet listing criteria, the delisting event can also be perceived as a permanent loss of the public status with its ensuing disadvantages (i.e. lack of liquidity). Harris, Panchapagesan and Werner (2008) documented that in the US, even though there is a significant deterioration in market quality after delisting, the pre-delisting impact is concentrated on the delisting date. In the same respect, we expect losses from delistings due to failure to meet listing criteria to be lower compared to those, following a bankruptcy filing. In the latter case the bad signal transmitted to the market is stronger and could lead to a permanent loss of mar-

[3] Harris, Panchapagesan and Werner (2008) identified three main categories of violations leading to involuntary delisting; corporate governance including timely reporting and core and non-core issues of violations of markets' regulations, including size, profitability, ownership dispersions and trading issues.

ket value making the impact to the investor to be irreversible. We, therefore, formulate our second hypothesis as follows:

H_2: Voluntary delistings triggered by failure to meet listing criteria, are associated with weaker market reaction compared to that triggered by bankruptcy filings around the announcement of the delisting decision.

Voluntary delistings is a topic that has attracted considerable attention in recent years with their motives, mainly found in the excessive costs of remaining cross-listed (Chaplinsky and Ramchand, 2012) or even retaining a single listing status (Marosi and Massoud, 2007), the tightening regulatory framework (Bessler, Kaen, Kurmann and Zimmermann, 2012) and the diminishing shareholder interest and corresponding benefits (Liu and Stowe, 2005). According to Marosi and Massoud (2007), investors sustain significant negative cumulative average abnormal returns (CAARs) upon the announcement of deregistration, while Leuz, Triantis and Wang (2008) similarly reported that the market reaction of a going-dark decision is, on average, negative. Croci and Del Guidice (2014) found that short-term CAARs before the announcement are positive and statistically significant. The underlying hypothesis in the related literature is that in an efficient market publicly available information like the volume of transactions, and the diminishing number of shareholders should result in the voluntary delisting announcement to have minimal impact on the stock price, since all the information should have normally been incorporated in the current price (Liu and Stowe, 2005). In this context we conjecture that the companies' decision to exit public markets are innocuous for their shareholders and are not associated with stock price volatility around the announcement date. Our third hypothesis is as follows:

H_3: Voluntary delistings, initiated by companies' request do not elicit significant excess returns around the announcement of the delisting decision.

The third strand of the literature examines the ties between corporate governance and delistings mainly in terms of the reasons, associated with investor protection and regulatory requirements that may affect firms' willingness or ability to remain public or cross-listed. While UK samples appear to have higher abnormal returns, than non-UK deals, Croci and Del Guidice (2014) found that the differences are not significant. On the other hand, Andres, Betzer and Weir (2007), and Dasilas and Grose (2016) also ended up with contrasting findings, suggesting that, despite the common notion, it is not clear, whether there is any economically significant difference in returns in Continental Europe and the UK.

Higher investor protection is normally viewed as a factor reducing the potential for significant losses as a result of a delisting. Andres, Betzer and Weir (2007) underlined the role of corporate governance attributes on short-term returns. In this respect, the strength of corporate governance plays significant role in the impact of delistings announcements on shareholders' wealth. Hence, the fourth hypothesis is as follows:

H_4: The strength of corporate governance is inversely related with the market reaction around delisting announcement dates.

In recent years a growing literature in Europe further addresses the link between delistings and corporate governance. In this context Croci and Del Giudice (2014) examined the role of controlling shareholders in European firms that were going private. When the authors controlled for firm characteristics, the CAARs around the announcement of going private, are not associated with the controlling shareholders that delisted their firms.

Martinez and Serve (2011) claimed that the existence of organized OTC markets limits the negative effect resulting from a company delisting, since shares continue to be traded. Park, Lee and Park (2014) posited though that within less developed capital markets, characterized by weak or non-existent OTC markets, a soon to-be-delisted firm could be considered a lost cause for a stock market investor. In this case there is a complete loss of liquidity. In this respect, we postulate the following hypothesis:

H_5: When taking into account the degree of corporate governance strength, the magnitude of market reaction around a delisting announcement is more prominent in the case of involuntary versus voluntary delistings.

2. Research design

2.1. Sample selection. The sample of delistings was culled from Thomson One database taking into consideration all three main criteria for the delistings of firms, that is, bankruptcy, failure to meet the stock exchanges' requirements and companies' request to delist. Initially, we identified 830 delistings that occurred between 2000 and 2010 in Europe. 233 firms had delisted due to bankruptcy, 273 due to failure to meet market requirements and 320, following a company's request, including buyout offers with squeeze out (BOSO) cases. To form our final sample, we required firms to have closing stock, bid and ask prices, available for 250 days prior to the delisting announcement date. After catering for the availability of data, we ended up with 151 firms that had filed for bankruptcy, 166 that delisted following market regulations,

and 161 that delisted by their own initiative, a total sample of 478 delistings. Stock prices, benchmark index data and fundamentals of the delisted firms were collected from Bloomberg.

Table 1 displays the distribution of our sample of delistings by year and country of origin. 29% of delistings comprising our sample took place in 2003. After peak year the number of delistings experienced a slowdown with figures gradually picking up again after 2008. We observe that the majority of delistings (342 cases) took place in German exchanges. As illustrated in Croci and Del Guidice (2014), there exist significant differences in sample compositions, depending on the sources of information used. The dominance of Germany and France in Continental European delistings is also documented in Andres, Betzer and Weir (2007), where over 40% of LBOs eventuated there.

Table 1. Distribution of delistings per year and type

Panel A. Distribution of delistings by year								
Year	Full sample	%	Bankruptcy	%	Failure	%	Request	%
2000	12	3%	5	3%	2	1%	5	3%
2001	33	7%	19	13%	1	1%	13	8%
2002	46	10%	22	15%	13	8%	11	7%
2003	139	29%	18	12%	98	59%	23	14%
2004	65	14%	9	6%	25	15%	31	19%
2005	35	7%	13	9%	4	2%	18	11%
2006	38	8%	10	7%	6	4%	22	14%
2007	9	2%	6	4%	0	0%	3	2%
2008	20	4%	8	5%	1	1%	11	7%
2009	45	9%	24	16%	7	4%	14	9%
2010	36	8%	17	11%	9	5%	10	6%
Total	478	100%	151	100%	166	100%	161	100%
Panel B. Distribution of delistings by country								
Country	Full sample	%	Bankruptcy	%	Failure	%	Request	%
Belgium	11	2%	4	3%	0	0%	7	4%
Denmark	9	2%	7	5%	1	1%	1	1%
Finland	1	0%	1	1%	0	0%	0	0%
France	20	4%	4	3%	3	2%	13	8%
Germany	342	72%	100	66%	157	95%	85	53%
Greece	5	1%	0	0%	0	0%	5	3%
Iceland	9	2%	1	1%	0	0%	8	5%
Italy	5	1%	2	1%	0	0%	3	2%
Luxemburg	5	1%	0	0%	1	1%	4	2%
Netherlands	12	3%	6	4%	0	0%	6	4%
Norway	7	1%	5	3%	0	0%	2	1%
Spain	3	1%	0	0%	0	0%	3	2%
Sweden	29	6%	15	10%	0	0%	14	9%
Switzerland	6	1%	3	2%	0	0%	3	2%
UK	14	3%	3	2%	4	2%	7	4%
Total	478	100%	151	100%	166	100%	161	100%

Notes: The table shows the distribution of delistings across time and country of origin during our sample period.

We collected the corporate governance data from the Global Competitiveness Report, issued by the World Economic Forum. The variables employed are the strength of auditing and reporting standards, the protection of minority shareholders interest, the efficacy of corporate boards and the strength of investor protection.

2.2. Methodology. We employ the classical event study analysis (Brown and Warner, 1985) in order to capture possible wealth effects, stemming from delistings announcements. Dutta and Dutta (2015) and Soongswang (2013) underline the prevalence of the approach despite its known deficiencies. We attempt to capture differences in the wealth effects, arising from the different subcategories of delistings that we identified. The event window for calculating excess returns consists of 250 days, that is, from day t = -249 to t = 0. We calculate abnormal returns in the days preceding the announcement of delisting (day 0), using the market model as a return-generating approach. According to the market model, abnormal returns are calculated as follows:

$$AR_{it} = R_{it} - (a_i + b_i R_{Mt}), \quad (1)$$

where AR_{it} is the abnormal return, R_{it} is the security return i at time t, R_{Mt} is the market return at time t as provided by each country's main stock index.

The parameters a_i and b_i are estimated, using the Scholes and Williams (1977)[4] technique, which accounts for the thin trading problem, a commonly detected problem in companies with infrequent or low trade. Market model parameters are estimated by regressing (using OLS) the stock returns on the market return for the estimation period that ranges from t = 249 to t = 0, where t = 0 is the delisting announcement date. We also compute Cumulative Abnormal Returns (CARs) for each company that are averaged among all the sample companies to obtain Cumulative Average Abnormal Returns (CAARs). We test the statistical significance of AARs and CAARs, using parametric t-tests by Campbell et al. (1997).

In unreported results[5] we calculated abnormal returns using the market-adjusted model ($AR_{it} = R_{it} - R_{Mt}$) for robustness purposes. No significant differences between the market-adjusted return model and the market model can be detected.

To capture wealth effects in different event windows prior to delisting announcement date (day 0), we compute CAARs for 250 days (t = −249 to t = 0), 5-days (t = −4 to t = 0), 4-days (t = −3 to t = 0), 3-days (t = −2 to t = 0) and 2-days (t = −1 to t = 0). We then attempt to detect the determinants of the delisting wealth effects to shareholders by using pooled cross-sectional regression analysis. We regress the three-day CAAR (-2, 0) against the following explanatory variables:

- Firm size defined as the logarithm of the firm's total assets in the fiscal year-end preceding delisting (Dawkins, Bhattacharya and Bamber, 2007; Croci and Del Guidice, 2014).
- Z-score measuring a firm's financial condition at the fiscal year-end preceding delisting computed using Altman's (1968) Z-score.
- Profitability, as measured by ROA (earnings before interest and taxes divided by total assets) in the fiscal year-end preceding delisting (Croci and Del Guidice, 2014).
- Corporate governance impact using a corporate governance index (CGI) which is constructed by equally weighting the four employed governance indicators (i.e. the strength of auditing and reporting standards, the protection of minority shareholders interest, the efficacy of corporate boards, and the strength of investor protection) as provided by the annual World Economic Forum's Global Competitiveness Report Index. Croci and Del Guidice (2014) also use a variable measuring minority shareholder protection.
- A dummy variable taking the value of one for Germany given the large portion of German delistings and zero otherwise.

3. Empirical results

3.1. Short-term abnormal returns. In Table 2 the results from the stock price reaction to the delisting announcements is displayed. CAARs for most event windows are negative and statistically significant. In specific, the average abnormal return is -2.12% on the announcement day, while on the day before the announcement the abnormal return is -2.79%, statistically significant at the 5% level. Since returns are negative on all four days before the event (-4, -3, -2, -1), as expected the CAARs are also larger the further away we move from the actual delisting announcement. In this way the five-day CAAR (-4, 0) is -8.96% (t-statistic = -4.12), while the two-day CAAR is -4.63% (t-statistic = -2.90). In untabulated results, we corroborate the above results for ARs and CAARs using bid, ask and midpoint prices instead of closing prices. Overall, these results show that the announcement of the delisting causes significant losses to pre-announcement shareholders.

The investigation of the full sample alone does not allow us to make the appropriate inferences on the wealth effects of delistings since these have heterogeneous characteristics, depending on their inner motives. For this reason, we delve into the impact of the delisting announcements on stock prices, taking into account the voluntary and involuntary trait of delistings. Therefore, we partition our full sample of delistings on three subcategories as already defined. As expected, the bankruptcy subsample exhibits the highest negative CAARs in all event windows. The failure to meet market criteria subsample and the company request subsample appear to have smaller losses, than the overall sample. The former exhibits a five-day CAAR (-4, 0) of -8.27% (t-statistic = -2.59) and a two-day CAAR (-1, 0) of -5.04% (t-statistic = -2.44), while the latter has a five-day CAAR (-4, 0) of -5.25% (t-statistic = -1.76) and a three-day CAAR (-2, 0) of -2.02% (t-statistic = -2.52)[6]. The comparable five-day CAAR in Liu and Stowe (2005) is only marginally negative. Interestingly, in our sample the 250-day pre-

[4] Based on Scholes and Williams (1977) returns are calculated as follows:
$R_{it} = \alpha_{1t} + \beta_{1t}(R_{mt-1}) + \varepsilon_{it}, R_{it} = \alpha_{2t} + \beta_{2t}(R_{mt}) + \varepsilon_{it}, R_{it} =$
$= \alpha_{3t} + \beta_{3t}(R_{mt+1}) + \varepsilon_{it},$
$\hat{\beta}_{SW} = \frac{\hat{\beta}_{1t} + \hat{\beta}_{2t} + \hat{\beta}_{3t}}{1 + 2\hat{\rho}_m},$
where ρ_m is the first-order autocorrelation of R_m.

[5] The results are upon request.

[6] The two-day CAR (-1, 0) for the company request sample is not statistically significant.

announcement CAAR is positive and significant both for the bankruptcy, as well as for the failure to meet market criteria subsamples. Unreported statistics on differences between the pairs of CAARs in all windows corroborate the economic meaningfulness of our results.

Table 2. Average abnormal returns and cumulative average abnormal returns around delistings announcement days

Panel A. Full sample (N = 478)										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-1.64%	-1.38%	-0.71%	-2.79%**	-2.12%*	5.49%*	-8.96%**	-7.20%***	-5.24%***	-4.63%***
t-statistic	-1.55	-1.13	-0.83	-2.14	-1.90	1.89	-4.12	-3.37	-2.90	-2.90
Panel B. Bankruptcy sample (N = 151)										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.89%	-4.52%**	0.01%	-6.23%*	-2.45%	18.00%**	-16.07%***	-13.18%**	-8.67%*	-8.68%**
t-statistic	-1.29	-2.04	0.01	-1.72	-0.90	2.12	-3.22	-2.52	-1.73	-1.98
Panel C. Fail sample (N = 166)										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.48%	0.91%	-1.66%	-2.15%	-2.89%	4.56%*	-8.27%***	-5.79%*	-6.70%***	-5.04%**
t-statistic	-1.58	0.50	-1.10	-1.35	-1.57	1.69	-2.59	-1.92	-2.82	-2.44
Panel D. Company request sample (N = 166)										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-0.65%	-2.57%	-0.43%	-0.45%	-1.14%	0.12%	-5.25%*	-4.60%*	-2.02%**	-1.59%
t-statistic	-0.39	-1.14	-0.39	-0.52	-1.21	0.08	-1.76	-1.84	-2.52	-1.49

Notes: Average abnormal returns (AARs) in the four days preceding the announcement of delisting (day 0) using the market model as a return-generating approach. Cumulative average abnormal returns (CAARs) are computed for the following event windows: (-249, 0), (-4, 0), (-3, 0), (-2, 0), and (-1, 0). *, ** and *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

These results combined with those of the full sample lead us to conclude that delistings are partly expected by the market, as observed by the growing negative ARs, culminating on the day before the announcement, which can be explained by possible information leakages and insider trading (Park, Lee and Park, 2014).

In general, the first hypothesis is supported for the bankruptcy filings subsample. Moreover, our results are also consistent with the second hypothesis, which posits that the failure to meet listing criteria for delisting subsample should have sustained smaller losses than the bankruptcy filing subsample in line with Harris, Panchapagesan and Werner (2008). In the same rationale our evidence lends support to the third hypothesis as well, since the company request subsample exhibits marginal losses around the delisting decision announcement in a finding apparently impacted by the voluntary nature of the decision. Similar negative market reaction after voluntary delistings was reported in Leuz, Triantis and Wang (2008), while Marosi and Massoud (2007) reported significantly negative pre-delisting CAARs.

3.2. The role of corporate governance in short-term abnormal returns. Another objective of the present study is to explore whether heterogeneous levels of corporate governance prevailing in European markets affect market reaction to voluntary (company request) and involuntary (bankruptcy and fail to meet listing criteria) delistings. Table 3 reports the impact of auditing and reporting standards on the wealth effects of delistings. We observe that stock price losses are significantly higher during the period preceding the announcement of the delisting event for the subsample of firms with higher levels of auditing and reporting standards. More specifically, the five-, four- and three-day CAARs are -12.62%, -12.05% and -8.03%, compared to -8.44%, -6.52% and -4.72% respectively, for the weaker corporate governance subsample. Unreported results also show statistical differences in all CAARs between the two subsamples. When comparing these results with the findings of Table 2, we observe that five-, four- and three-day CAARs are smaller for the subsample of stronger corporate governance characteristics markets, relative to the full sample results. The same applies for abnormal returns one day prior to the event announcement.

Table 3. Average abnormal returns and cumulative average abnormal returns around delistings announcement days, based on the strength of auditing and reporting standards

Panel A. Full sample (N = 74) and high strength of auditing and reporting standards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-0.56%	-4.02%	-3.45%**	-2.87%**	-1.72%	8.15%*	-12.62%**	-12.05%**	-8.03%***	-4.58%**
t-statistic	-0.44	-0.77	-1.96	-1.96	-0.87	1.71	-2.27	-2.15	-3.48	-2.02

Table 3 (cont.). Average abnormal returns and cumulative average abnormal returns around delistings announcement days, based on the strength of auditing and reporting standards

Panel B. Involuntary sample (Bankruptcy + fail sample) (N = 39) and high strength of auditing and reporting standards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	0.35%	0.15%	-3.61%*	-5.00%**	-2.60%	15.07%*	-10.71%*	-11.06%**	-11.21%***	-7.61%**
t-statistic	0.17	0.03	-1.66	-2.00	-0.81	1.91	-1.86	-2.01	-2.72	-2.18
Panel C. Voluntary sample (Company request) (N = 35) and high strength of auditing and reporting standards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-1.59%	-8.67%	-3.28%	-0.48%	-0.73%	0.43%	-14.74%	-13.16%	-4.49%***	-1.21%
t-statistic	-1.05	-0.89	-1.15	-0.39	-0.34	0.09	-1.49	-1.29	-2.97	-0.44
Panel D. Full sample (N = 404) and low strength of auditing and reporting standards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-1.83%	-1.36%	-0.25%	-2.77%*	-2.20%*	4.70%	-8.44%***	-6.52%***	-4.72%**	-4.64%**
t-statistic	-1.50	-1.27	-0.26	-1.82	-1.73	1.42	-3.56	-2.82	-2.25	-2.51
Panel E. Involuntary sample (Bankruptcy + fail sample) (N = 278) and low strength of auditing and reporting standards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.62%*	-1.69%	-0.47%	-3.84%*	-2.65%	6.95%	-11.58%***	-8.55%***	-6.56%**	-6.06%**
t-statistic	-1.75	-1.14	-0.36	-1.78	-1.48	1.46	-3.60	-2.60	-2.17	-2.30
Panel F. Voluntary sample (Company request) (N = 126) and low strength of auditing and reporting standards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-0.39%	-0.89%	0.36%	-0.44%	-1.25%	0.04%	-2.61%	-2.22%	-1.33%	-1.69%
t-statistic	-0.19	-0.84	0.31	-0.42	-1.20	0.02	-1.00	-1.50	-1.44	-1.49

Notes: Average abnormal returns (AARs) in the four days preceding the announcement of delisting (day 0), using the market model as a return-generating approach. Cumulative average abnormal returns (CAARs) are computed for the following event windows: (-249, 0), (-4, 0), (-3, 0), (-2, 0).and (-1, 0). *, ** and *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Table 4 summarizes the results for the efficacy of corporate boards variable that measures the extent of management accountability to investors and the Board of Directors (BoD). We find that a higher level of management accountability is associated with more notable losses. However, when examining the involuntary delistings subsample the two-day CAAR is once again greater for the high accountability subsample.

Table 4. Average abnormal returns and cumulative average abnormal returns around delistings announcement days based on the degree of efficacy of corporate boards

Panel A. Full sample (N = 85) and high efficacy of corporate boards										
Full sample	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
Days	-0.66%	-3.47%	-2.83%*	-2.58%**	-1.51%	7.37%*	-11.05%**	-10.39%**	-6.92%***	-4.10%**
AAR	-0.58	-0.76	-1.83	-2.02	-0.88	1.74	-2.28	-2.12	-3.39	-2.07
Panel B. Involuntary sample (Bankruptcy + Fail sample) (N = 43) and highefficacy of corporate boards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	0.11%	0.20%	-3.03%	-4.55%**	-2.36%	14.39%**	-9.62%*	-9.74%*	-9.93%***	-6.91%**
t-statistic	0.06	0.04	-1.52	-2.00	-0.81	1.98	-1.83	-1.93	-2.62	-2.17
Panel C. Voluntary sample (Company request) (N = 42) and highefficacy of corporate boards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-1.45%	-7.22%	-2.62%	-0.57%	-0.65%	0.18%	-12.52%	-11.07%	-3.84%***	-1.22%
t-statistic	-1.14	-0.89	-1.10	-0.54	-0.36	0.04	-1.51	-1.30	-2.91	-0.53
Panel D. Full sample (N = 393) and low efficacy of corporate boards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.07%	-1.49%	-0.26%	-2.84%*	-2.27%*	4.86%	-9.00%***	-6.77%***	-5.07%**	-4.80%**
t-statistic	-1.65	-1.35	-0.26	-1.82	-1.73	1.42	-3.70	-2.85	-2.35	-2.53
Panel E. Involuntary sample (Bankruptcy + Fail sample) (N = 274) and low efficacy of corporate boards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.63%*	-1.73%	-0.52%	-3.90%*	-2.68%	6.94%	-11.77%***	-8.72%***	-6.69%**	-6.15%**
t-statistic	-1.73	-1.15	-0.39	-1.78	-1.48	1.44	-3.60	-2.62	-2.19	-2.30
Panel F. Voluntary sample (Company request) (N = 119) and low efficacy of corporate boards										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-0.37%	-0.94%	0.35%	-0.41%	-1.31%	0.10%	-2.68%	-2.32%	-1.38%	-1.72%
t-statistic	-0.17	-0.84	0.28	-0.37	-1.19	0.06	-0.97	-1.49	-1.41	-1.43

Notes: Average abnormal returns (AARs) in the four days preceding the announcement of delisting (day 0) using the market model as a return-generating approach. Cumulative average abnormal returns (CAARs) are computed for the following event windows: (-249, 0), (-4, 0), (-3, 0), (-2, 0), and (-1, 0). *, ** and *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Table 5 reports the impact of the delistings announcement on stock prices, when minority shareholder interests are considered. In high minority shareholder protection environments the produced cumulative losses are analogous to those, found in low investor protection environments. This is mainly the case when examining the involuntary delistings subsample, where the two-day CAAR(-1, 0) is marginally higher in the low investor protection markets.

Table 5. Average abnormal returns and cumulative average abnormal returns around delistings announcement days, based on the degree of protection of minority shareholder interests

Panel A. Full sample (N = 87) and high degree of protection of minority shareholder interests										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.00%*	-1.38%	-2.52%	-3.19%**	0.02%	8.12%*	-9.08%*	-7.08%	-5.70%***	-3.18%*
t-statistic	-1.67	-0.31	-1.63	-2.42	0.01	1.88	-1.93	-1.48	-3.33	-1.83
Panel B. Involuntary sample (Bankruptcy + fail sample) (N = 47) and high degree of protection of minority shareholder interests										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.46%	3.95%	-2.61%	-5.33%**	0.49%	14.82%**	-5.96%	-3.50%	-7.45%***	-4.84%**
t-statistic	-1.29	0.98	-1.35	-2.40	0.29	2.10	-1.30	-0.76	-2.55	-1.96
Panel C. Voluntary sample (Company request) (N = 40) and high degree of protection of minority shareholder interests										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-1.45%	-7.66%	-2.40%	-0.69%	-0.54%	0.24%	-12.74%	-11.29%	-3.63%***	-1.23%
t-statistic	-1.10	-0.90	-0.96	-0.62	-0.29	0.06	-1.46	-1.26	-2.60	-0.51
Panel D. Full sample (N = 391) and low degree of protection of minority shareholder interests										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-1.78%	-1.95%*	-0.31%	-2.70%*	-2.61%**	4.68%	-9.43%***	-7.49%***	-5.34%**	-5.01%***
t-statistic	-1.42	-1.76	-0.31	-1.72	-1.96	1.37	-3.85	-3.14	-2.45	-2.61
Panel E. Involuntary sample (Bankruptcy + fail sample) (N = 271) and low degree of protection of minority shareholder interests										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.40%	-2.03%	-0.45%	-3.74%*	-3.27%*	6.74%	-12.20%***	-9.38%***	-7.05%**	-6.57%**
t-statistic	-1.56	-1.29	-0.34	-1.69	-1.75	1.38	-3.68	-2.77	-2.27	-2.42
Panel F. Voluntary sample (Company request) (N = 121) and low degree of protection of minority shareholder interests										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-0.38%	-0.90%	0.22%	-0.37%	-1.34%	0.08%	-2.77%	-2.39%	-1.49%	-1.71%
t-statistic	-0.18	-0.82	0.19	-0.34	-1.24	0.05	-1.02	-1.56	-1.55	-1.45

Notes: Average abnormal returns (AARs) in the four days preceding the announcement of delisting (day 0), using the market model as a return-generating approach. Cumulative average abnormal returns (CAARs) are computed for the following event windows: (-249, 0), (-4, 0), (-3, 0), (-2, 0), and (-1, 0). *, ** and *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

The findings related to the overall investor protection levels in countries, where the sample firms are domiciled, are reported in Table 6. Once again, in high investor protection markets cumulative losses are slightly higher as found from the three-day CAAR of -6.93% relative to the three-day CAAR of -5.36% for the low investor protection environment. However, there is notable difference in the case of voluntary delistings when investigating the relevant three-day CAAR in low investor and high investor protection environments. In this case the events occurring in low investor protection environments elicit a larger loss relative to their high investor protection counterparts.

Table 6. Average abnormal returns and cumulative average abnormal returns around delistings announcement days, based on the strength of investor protection

Panel A. Full sample (N = 111) and high strength of investor protection										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-0.90%	-0.63%	-1.27%	-5.10%	-0.57%	20.00%*	-8.46%*	-7.56%	-6.93%*	-5.66%
t-statistic	-0.92	-0.18	-1.05	-1.58	-0.49	1.81	-1.66	-1.46	-1.79	-1.44
Panel B. Involuntary sample (Bankruptcy + fail sample) (N = 50) and high strength of investor protection										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-1.15%	4.26%	-1.52%	-10.72%	-1.14%	20.46%*	-10.28%	-9.13%	-13.39%	-11.87%
t-statistic	-0.61	1.13	-0.86	-1.52	-0.56	1.81	-1.15	-1.01	-1.58	-1.40
Panel C. Voluntary sample (Company request) (N = 61) and high strength of investor protection										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-0.70%	-4.63%	-1.06%	-0.48%	-0.09%	0.77%	-6.96%	-6.27%	-1.63%*	-0.57%
t-statistic	-0.77	-0.83	-0.63	-0.63	-0.07	0.26	-1.20	-1.06	-1.69	-0.36

Table 6 (cont.). Average abnormal returns and cumulative average abnormal returns around delistings announcement days, based on the strength of investor protection

Panel D. Full sample (N = 367) and low strength of investor protection										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.10%	-2.21%*	-0.55%	-2.73%**	-2.61%*	3.74%**	-9.94%***	-7.73%***	-5.36%***	-4.97%***
t-statistic	-1.57	-1.88	-0.52	-1.96	-1.85	2.15	-4.17	-3.36	-2.62	-2.89
Panel E. Involuntary sample (Bankruptcy + fail sample) (N = 267) and low strength of investor protection										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-2.46%	-2.55%	-0.74%	-3.60%*	-2.92%	5.25%**	-12.11%***	-9.30%***	-6.53%**	-6.01%***
t-statistic	-1.59	-1.65	-0.54	-1.95	-1.56	2.30	-4.00	-3.01	-2.35	-2.61
Panel F. Voluntary sample (Company request) (N = 100) and low strength of investor protection										
Days	-4	-3	-2	-1	0	CAAR (-249 0)	CAAR (-4 0)	CAAR (-3 0)	CAAR (-2 0)	CAAR (-1 0)
AAR	-0.62%	-1.33%	-0.04%	-0.43%	-1.78%	-0.28%	-4.20%	-3.58%**	-2.25%**	-2.21%
t-statistic	-0.24	-1.00	-0.03	-0.33	-1.36	-0.15	-1.28	-1.96	-1.96	-1.55

Notes: Average abnormal returns (AARs) in the four days preceding the announcement of delisting (day 0), using the market model as a return-generating approach. Cumulative average abnormal returns (CAARs) are computed for the following event windows: (-249, 0), (-4, 0), (-3, 0), (-2, 0), and (-1, 0). *, ** and *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Overall, it appears that the strength of investor protection on a country level, as illustrated from the World Economic Forum Global Competitiveness Report, decisively influences the magnitude of losses, arising from delisting announcements. This finding allows us to infer that an inverse relationship between the strength of corporate governance and the magnitude of losses arising from a delisting is present, lending support to our fourth hypothesis. High protection environments are largely seen as safe havens for investors, wishing to protect themselves from such incidents of involuntary, unpredictable delistings, resulting in smaller liquidity and most probably capital losses. On the contrary, in low investor protection environments an involuntary delisting is clearly less of a surprise to investors.

When a BOSO is a prerequisite, the delisting process in a low investor protection environment could be rigged and minority shareholders rights might not be properly protected[7]. Pattitoni, Petracci and Zhu (2015) highlight the need for the introduction of legislation, limiting opportunistic behavior that may misuse the BOSO process by forcing minority shareholders to accept low tender offer prices and sustain losses.

Martinez and Serve (2011) further reinforce our claim by positing that there is an active market for firms that delist following LBOs, especially amongst private equity funds. Thus, one can deduce that an investor in a high investor protection environment is not viewing a voluntary delisting of all that catastrophic event. In contrast, within less protected environments, where usually OTC markets are less active or, most commonly, non-existent, the involuntary delistings precipitate a collapse of prices of the delisted stocks (Park, Lee and Park, 2014).

We also conjecture that shareholder activism may have a role in this apparent difference in wealth effects in heterogeneous corporate governance environments. According to Kim, Liao and Wang (2015), active investors tend to have a more pivotal role in markets with stronger investor protection regulation. In this respect, the presence of active investors or, even better, private equity funds in a to-be delisted firm may provide some reassurance that minority shareholder interests will be respected.

3.3. Cross-sectional regression results examining the forces affecting abnormal losses. We attempt to delve deeper into the forces affecting short-term returns by regressing cumulative abnormal returns of target firms over the (-1, 0) window, against firm size, as proxied by the logarithm of assets, Z-score measuring a firm's financial condition at the fiscal year-end preceding delisting, ROA measuring the firm's profitability, a corporate governance index (GCI) and a dummy variable testing if the delisting took place in the German exchange given the large portion of German delistings included in our dataset.

Correlations among variables are outlined in Table 7. The overall sample results highlight the high correlation between the firm size variable and all other explanatory variables.

Table 7. Correlation between regression estimates variables

Panel A. Correlations for the full sample						
	CAAR (-1, 0)	SIZE	Z-SCORE	ROA	Germany	CGI
CAAR (-1, 0)	1.000					
	-					

[7] BOSOs' critics claim that under this process minority shareholders are somewhat forced to hand over their stocks for a predefined price, potentially not representing the actual value of the firm. If they don't, they risk remaining shareholders of an extremely less liquid private company.

Table 7 (cont.). Correlation between regression estimates variables

Panel A. Correlations for the full sample						
	CAAR (-1, 0)	SIZE	Z-SCORE	ROA	Germany	CGI
SIZE	0.081	1.000				
	1.68*	-				
Z-SCORE	-0.117	-0.130	1.000			
	-2.44**	-2.72***	-			
ROA	0.044	0.324	0.079	1.000		
	0.91	7.09***	1.64	-		
Germany	-0.018	-0.348	0.003	-0.131	1.000	
	-0.37	-7.68***	0.07	-2.73***	-	
CGI	0.023	0.385	-0.002	0.042	-0.033	1.000
	0.47	8.63***	-0.03	0.86	-0.69	-
Panel B. Correlations for the bankruptcy sample						
	CAAR (-1, 0)	SIZE	Z-SCORE	ROA	Germany	CGI
CAAR (-1, 0)	1.000					
	-					
SIZE	0.029	1.000				
	0.33	-				
Z-SCORE	-0.054	-0.237	1.000			
	-0.63	-2.83***	-			
ROA	0.032	0.294	0.247	1.000		
	0.37	3.56***	2.95***	-		
Germany	0.006	0.203	-0.179	-0.078	1.000	
	0.07	2.40**	-2.11**	-0.90	-	
CGI	-0.027	-0.057	0.049	0.077	-0.533	1.000
	-0.31	-0.66	0.57	0.89	-7.30	-
Panel C. Correlations for the failure to meet listing criteria sample						
	CAAR (-1, 0)	SIZE	Z-SCORE	ROA	CGI	
CAAR (-1, 0)	1.000					
	-					
SIZE	0.189	1.000				
	2.34**	-				
Z-SCORE	-0.160	-0.067	1.000			
	-1.97**	-0.81	-			
ROA	0.146	0.490	0.105	1.000		
	1.79*	6.83***	1.28	-		
CGI	0.020	0.156	-0.060	0.048	1.000	
	0.24	1.92*	-0.73	0.59	-	
Panel D. Correlations for the request sample						
	CAAR (-1, 0)	SIZE	Z-SCORE	ROA	Germany	CGI
CAAR (-1, 0)	1.000					
	-					
SIZE	0.125	1.000				
	1.50	-				
Z-SCORE	-0.310	-0.090	1.000			
	-3.89***	-1.08	-			
ROA	0.082	0.290	0.059	1.000		
	0.98	3.62	0.71	-		
Germany	-0.049	-0.455	0.056	-0.134	1.000	
	-0.58	-6.09***	0.67	-1.61	-	
CGI	0.003	0.050	-0.151	0.016	-0.290	1.000
	0.04	0.60	-1.82	0.19	-3.61***	-

We calculate cumulative average abnormal returns as the percentage difference between the closing price on the day, preceding the first day of the event window, and the closing price on the event day of the event window. Size is the logarithm of the firm's total assets as of the fiscal year-end preceding delisting. Z-score measures a firm's financial condition at the fiscal year-end preceding delisting, computed using Altman's Z-score (1968), where higher scores indicate stronger financial condition. ROA is the return on assets measured earnings before interest and taxes by total assets as of the fiscal year-end preceding delisting. Germany is a dummy variable equal to 1, if the delisted firm is from Germany, and 0 otherwise. CGI is a corporate governance index, which is based on the annual World Economic Forum's Global Competitiveness Report Index. t-statistics appear in parentheses.

Table 8 presents the cross-sectional regression results. The Z-score has a negative impact on the abnormal returns for the overall sample. Its significant role is also spotted when examining the subsamples of involuntary delistings. This result suggests that the lower the probability of default, as evidenced by the higher Z-score, the lower the market reaction to delistings announcements. ROA is a positive and significant determinant of abnormal returns, highlighting the role of profitability in affecting the magnitude of losses before the delisting announcement. The coefficient of CGI is statistically negative in all regressions apart from company's request sample, corroborating our earlier findings regarding the inverse relationship between the degree of governance structures and market reaction to delistings announcements.

In line with Croci and Del Guidice (2014), who used a dummy for the UK, dominating their sample of delistings, we observe that our dummy variable capturing the dominant country of origin is not statistically significant. On the other hand, the profitability variable, appearing to have a positive and significant impact on the pre-announcement abnormal returns of voluntary deals, comes in contrast with a negative, but not significant profitability variable found in Croci and Del Guidice (2014).

Table 8. Cross-sectional regression results

	Full sample		Bankruptcy		Failure to meet		Company request	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-0.049	-0.018	0.048	0.154	-0.033	0.091	-0.011	0.087
	(-1.65)	(-0.53)	(0.35)	(0.25)	(-0.68)	(0.42)	(-0.24)	(0.81)
SIZE	0.014*	0.013*	0.007	-0.001	0.024	0.025	0.006	0.006
	(1.66)	(1.79)	(0.17)	(-0.02)	(1.52)	(1.50)	(0.83)	(0.79)
Z-SCORE	-0.041**	(-0.042)***	-0.074*	-0.070	-0.051*	-0.051*	-0.038	-0.039
	(-2.55)	-2.57	(-1.76)	(-1.62)	(-1.93)	(-1.93)	(-1.57)	(-1.61)
ROA	0.001	0.000	0.002**	0.002**	0.001	0.001	0.001*	0.001*
	(1.20)	1.20	(2.01)	(2.05)	(0.99)	(0.98)	(1.69)	(1.71)
Germany	0.006		-0.072				0.005	
	0.12		-0.54				(0.22)	
CGI		-0.031*		-0.025**		-0.024***		-0.018
		(-1.91)		(-2.22)		(-2.58)		(-1.00)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted-R^2	0.019	0.020	0.023	0.020	0.046	0.039	0.086	0.088
F-statistic	2.08**	2.12**	1.76*	1.68*	3.37***	2.52**	4.36***	4.46***
No. of Obs.	430	430	136	136	150	150	144	144

As dependent variable we use the CAAR of two days surrounding the delisting event, that is, days -1 and 0. Size is the logarithm of the firm's total assets in the fiscal year-end preceding delisting. Z-SCORE measures a firm's financial condition at the fiscal year-end preceding delisting. ROA is the return on assets, as measured by earnings before interest and taxes, divided by total assets as of the fiscal year-end preceding delisting. Germany is a dummy variable equal to 1, if the delisted firm is from Germany, and 0 otherwise. CGI is a corporate governance index, which is based on the annual World Economic Forum's Global Competitiveness Report Index. t-statistics based on White's (1980) heteroscedasticity-consistent standard errors are in parentheses beneath coefficient estimates. *, ** and *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Conclusions

Delistings have steadily increased over the 2000s, representing in many cases a comparable to new listings percentage of the overall size of public markets. Amongst the reasons that we find for this resurgence of delistings, we focus on the strong regulatory framework that results in some companies being unable to meet the listing criteria. We place particular focus on voluntary delistings, caused by the high costs of retaining a listing status the gradual loss of benefits from cross-listings and private equity backed buyouts that have been scarcely explored in the European context.

This paper contributes to the delisting literature in Europe by investigating the impact of corporate governance on the wealth effects, emanating from all known types of delistings motives. We investigate delistings for a large European sample with particular emphasis on the impact of corporate governance characteristics on the magnitude of derived short-term returns. We aim at quantifying shareholder wealth losses before the announcement of the delisting and identifying the sources of these losses.

Cumulative capital losses in the period preceding the delisting announcement are the dominant finding underlying the delisting decision of European listed firms, regardless of being voluntary or involuntary. This finding, in sharp contrast with the US evidence, is mainly attributed to the thin OTC market, especially in Continental Europe. In some European

countries after a delisting event, liquidity completely disappears in line with the liquidity hypothesis posited in other studies.

As expected, we find a significant difference in the magnitude of abnormal losses sustained for involuntary versus voluntary delistings. Cumulative capital losses are found on the days before the delisting announcement underlying the fact that information leakages and insider trading affect stock prices even before the actual announcement.

We delve deeper into the wealth effects of delistings by taking into account the role of corporate governance in countries that host delistings. We posit the derived losses are greater in high shareholder protection environments. This finding potentially shows delistings, causing awe in high shareholder protection environments seen as safe havens by investors because, amongst other reasons, of this greater protection offered through stronger corporate governance rules. This finding holds for involuntary delistings, whether caused by bankruptcy filings or failure to meet the criteria set by the capital market, where they operate. However, this is not true for voluntary delistings. In this case the environment, where a firm operates, is highly valued by investors.

Our research does not lack limitations, since our research is confined to the relationship between delistings wealth effects and macro corporate governance variables. However, corporate governance characteristics on a firm level (i.e. number of independent directors, duality, CEO compensation, etc) could further explain the determinants of delisting decisions.

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