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Why Do Companies Delist Voluntarily from the Stock Market?

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Abstract

We analyse the motives and market valuation of voluntarily delisting from the London Stock Exchange. We show that firms that delist voluntarily are likely to have come to the market to rebalance their leverage rather than to finance their growth opportunities. During their quotation life, their leverage and insider ownership remained very high, they didn't raise equity capital, and their profitability, growth opportunities, and trading volume declined substantially. They also generate negative pre-event and announcement date excess returns. These results hold even after controlling for agency, asymmetric information, and liquidity effects, and suggest that firms delist voluntarily when they fail to benefit from listing. Overall, these firms destroyed shareholder value and they shouldn't have come to the market.

Keywords: Small firms; AIM; London Stock Exchange; Leverage; Delisting; IPO

JEL classification: G14, G32

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Why Do Companies Delist Voluntarily from the Stock Market?

1. Introduction

Over the last few years, an increasing number of quoted firms delist from the London's Alternative Investment Market (AIM). The most common method, accounting for nearly half of the delisted firms, is "*at the request of the company*", referred to thereafter as voluntary delisting,¹ where firms notify the London Stock Exchange to cancel their trading on the exchange at least 20 days before the actual event, get an approval from no less than 75% of shareholders at a general meeting, and then become private. Unlike other forms of delisting, such as transfer to the more regulated Main market, takeovers, or breach of regulation, existing shareholders have two options in voluntary delisting: sell their shares before the delisting date, or retain them in what becomes a privately owned firm. In contrast to the US where firms that deregister with the SEC become "dark companies" and their shares continue trading on the Pink Sheets over-the-counter (OTC) (Marosi and Massoud, 2007; Leuz et al., 2008), in the UK, the delisted firms' shares remain private and illiquid.²

¹ The Financial Times dated April 28, 2011 reports that "the first quarter saw 30 delistings, down from 51 in the first quarter of 2010. But ... two more companies asked shareholders for permission to leave. Both have been on AIM for several years...." The number of listed firms on AIM reached a peak of 1,694 in 2007, including 394 international companies, but in February 2012 there are only 1,122 split into 897 domestic and 225 foreign firms. The total market valuation also decreased over the same period from £98bn to £71bn.

² In the US, the delisting process takes up to 60 days. Firms may file a Form 15 if they intend to deregister from the Securities and Exchange Commission (SEC), after the approval of the company's board of directors, in which case they are not required to provide public information (Macey et al., 2008; Marosi and Massoud, 2007). The process is relatively longer in the UK as firms need to get approval from their shareholders. See www.londonstockexchange.com/companies-and-advisors/aim/advisers/rules/aim-rules-for_companies.pdf and www.londonstockexchange.com/companies-and-advisors/main-market/documents/brochures/admission-and-disclosure-standards.pdf for for AIM and Main market rules, respectively.

The reasons and consequences of such delisting decision remain an open question. In this paper, we assess whether firms trade off the costs and benefits of being listed in the stock market when they decide to delist voluntarily, as shown by Maupin et al. (1984), Kaplan (1991) and Bharath and Dittmar (2010) in the case of going private. We test the hypothesis that firms delist voluntarily because they are unable to obtain funding from the stock market to rebalance their capital structure. We use hand-collected data from prospectuses to assess whether the delisting decision can be predicted at the IPO date, and identify the delisted firms that came to the market specifically to raise equity capital, which is considered to be one of the major motivations for stock market listings (e.g., Aslan and Kumar, 2011; Bharath and Dittmar, 2010; Kim and Weisbach, 2005; Marosi and Massoud, 2007). We also collect stock prices and liquidity data to evaluate whether such a decision destroys shareholder value and is pre-empted by long-run stock returns underperformance and illiquidity.

We find that voluntarily delisting is more likely to occur about 4 years after the IPO date. Moreover, voluntary delisted firms exhibit significantly higher leverage at the IPO date than their control groups, defined as size and IPO-date matched non-delisted firms. However, the remaining IPO fundamental characteristics, including first day return and venture capital backing, cannot predict their probability of delisting. During their quotation life and compared to their control group, they are less likely to have raised equity capital. They remain highly levered, with low growth opportunities, profitability, liquidity and financial visibility, as measured by stock turnover, trading volume and stock volatility. They generate significantly lower excess stock returns and their insider ownership remained significantly high throughout their quotation period. When we compare changes in these characteristics between the IPO and delisting year, we find a significant increase in leverage and a decrease in firm value and trading volume. Their insider ownership increased from 44% to 56%, suggesting that their owners maintain significant control, and probably didn't want to keep

their firm public indefinitely. Overall, our results are consistent with the market access hypothesis, as voluntary delisted firms are likely to have come to the market to rebalance their capital structure, but, during their public life, they failed to raise additional capital, and to create growth options and shareholder value.

We test for robustness by using the Cox proportional hazard model to investigate the determinants of the delisting decision given the changes that happened to the firms' characteristics over time. We find that growth opportunities, as measured by market-to-book ratio or capital expenditure, leverage, and the lack of seasoned equity offerings explain significantly the decision to delist voluntarily. The hazard rates show that leverage is the most important factor in the voluntary delisting. Unlike going private through buyouts where firms have high free cash flow (Lehn and Poulsen, 1989), and in contrast to Pagano et al. (1998), Brav (2009) and Aslan and Kumar (2011), we show that firms delist when they are not able to rebalance their leverage mainly because they are not able to raise additional equity capital during their quotation life, in line with Bancel and Mittoo (2008) survey evidence.

In relation to firms that delist using alternative methods, we show that our delisted firms are relatively similar to those that delist because of breach of regulation. However, they are significantly different from firms that transfer to Main market or taken over, which are more likely to delist within the first 2 years after their IPO. Moreover, firms that transfer to Main market are more likely to be larger, more profitable, have lower underpricing and beta, and generate significantly higher excess stock returns than size and IPO-date control firms or voluntary delisted firms. They also have higher growth opportunities, in line with Bharath and Dittmar (2006), Marosi and Massoud (2007), and Aslan and Kumar (2011), but they appear to prefer to move to a bigger and more regulated market to raise further capital.

Finally, we investigate the market reaction to the delisting announcement. We find that, over one year pre-event period, voluntary delisted firms, like firms that delist because of

breach of regulation, generate significant negative returns of about 2%, compared to +14% for firms that transfer to the Main market. On the event period [-5, +5] their excess returns are -10%, in line with the -9% and -12% reported by Leuz et al. (2008) and Marosi and Massoud (2007), respectively. In addition, we report that over-levered firms generate significantly lower returns on the announcement date, suggesting that the market reaction depends on the severity of leverage, i.e., the inability of firms to raise equity capital.

To our knowledge, we are the first to analyse this unusual form of delisting under the UK institutional setting. However, we relate our results to previous studies that analyse other forms of delisting. Croci and Del Giudice (2012) show that across a sample of European countries, minority shareholders do not earn lower abnormal returns when the controlling shareholder takes the company private, and there is no evidence of performance improvement after the delisting. In the U.S., Marosi and Massoud (2007) find that the Sarbanes-Oxley Act (SOX) and the compliance cost are the major determinant of the delisting decision. Leuz et al. (2008) find a large impact of the SOX and the free cash flow problem associated with the agency cost are highly significant. They also include leverage as a control variable but they provide mixed evidence as leverage is only significant in the post-SOX period. Both these studies include financial firms for which leverage is difficult to measure and its interpretation is affected by capital requirements and investor insurance schemes, making the comparison with non-financial companies difficult (e.g., Rajan and Zingales, 1995). Other studies report that IPOs' survival time increases with age, size, and initial return, while it decreases with risk factors.³ However, many of these studies do not distinguish in depth between the types of

³ See, for example, Hensler et al. (1997), Jain and Kini (1999, 2000), and Fama and French (2004) in the US, and Vismara et al. (2012) in Europe. Carpentier and Suret (2011) find that non-surviving IPOs are less likely to be backed by VC, but the impact of VC on the failure risk is not significant, and the probability of survival is

delisting, as they mainly assess the characteristics of companies which survive compared to firms that delist from the trading exchange for negative reasons. Unlike Bharath and Dittmar (2010) and Mehran and Peristiani (2010), we find that the voluntary delisting is not driven by financial visibility and liquidity in the stock market. Moreover, since our sample firms have low free cash flow, high debt and insider ownership throughout their quotation period, our results do not provide support to the Jensen (1986) free cash flow problem. However, since these firms destroy shareholder value, our results imply that insiders may have come to the market to extract private benefits, highlighting new agency conflicts between managers and shareholders.

The rest of the paper is structured as follows. Section 2 presents the data and methodology. Section 3 discusses the results, and the conclusions are in Section 4.

2. Data and Methodology

2.1. Sample

We focus on AIM where young, risky and high growth firms with high asymmetric information and low liquidity, chose to be quoted to finance their growth opportunities. Since its creation in 1995, the number companies quoted on AIM kept increasing, but from early 2000s, a significant number of firms delist. In the last few years, the net flow of companies to AIM is negative, as shown in Figure 1. We use the *London Stock Exchange (LSE)* website⁴ to classify the reasons for delisting into four main categories: (i) voluntary delisting if the firm states that it is delisting at its own request; (ii) transfers to the relatively more regulated Main market; (iii) takeovers, which occurs, in our case, when our delisted firm takes over a private

significantly affected by the initial listing requirements, such as prestigious underwriters and audit firms. In the UK, Espenlaub et al. (2012) show that the tightening of AIM's listing requirements increased the survival rate.

⁴ New Issues and IPO Summary spreadsheet in www.Londonstockexchange.co.uk.

firm, changes its name and becomes private, making the delisted firm a bidder;⁵ and (iii) market regulation, a case where the firm listed on AIM is asked to delist because of breach of listing requirements, such as the loss of the nominated advisor. We exclude financial companies because of their specific characteristics. We also exclude 69 firms for which we could not find data. We screen all sample firms in *DataStream* to verify that these delisted firms are no longer listed on AIM under their old name. Our final sample includes 380 delisted firms in 1995-2009, out of which 155 (44%) are voluntary delisted firms, our main sample (see Figure 2).

[Insert Figure 1 and Figure 2 here]

2.2. *Definition of the proxy variables*

Bharath and Dittmar (2010) argue that since the decision to go public is a trade-off between the costs and benefits of listing, the delisting decision is also likely to be taken when the costs of listing exceed the benefits. We define in Table 1 a number of proxy variables to measure these costs and benefits. We focus on access to financing, agency costs, asymmetric information, financial visibility, and enhanced liquidity.

Getting access to public markets and enhanced transparency enables firms to have a greater bargaining power with banks, resulting in lower borrowing constraints and diversification of sources of finance (Ritter, 1987; Pagano et al., 1998; Bharath and Dittmar, 2006). Some firms use this funding to finance their growth opportunities while others go public to rebalance their leverage (Pagano et al., 1998). Aslan and Kumar (2011) find that leverage has a positive effect on the going-private decision. However, US survey evidence shows that financing is not the primary determinant of listing, as firms go public primarily to

⁵ They are reverse takeovers where shell firms are created to takeover private firms and then to trade under the target's name. We find and exclude only two cases of normal takeovers where the delisted firm is a target.

create public shares to use in future acquisitions (Brau, 2010), but in Europe they do so to enhance their bargaining power with bankers and to reduce their leverage, while firms that are not able to rebalance their leverage decide to go private (Bancel and Mittoo, 2008). Therefore, we expect firms to delist if they cannot raise equity capital to rebalance their capital structure. We test these arguments by including the probability of seasoned equity offering, leverage and growth opportunities, measured by market-to-book, and capital expenditure intensity. We expect low growth firms with high leverage and low probability of raising equity capital to be more likely to delist voluntarily.

Publicly listed companies potentially suffer from the agency conflict between managers and shareholders that emanates from the free cash flow problem, particularly in large firms with low growth opportunities (Jensen, 1986). The literature on the going-private decision suggests that the agency conflict between managers and shareholders would be mitigated through concentrating residual claims among management. Thus firms with significant free cash flow as well as low growth opportunities are more likely to go private. However, empirical studies report mixed results. Lehn and Poulsen (1989) find that free cash flow is a significant factor affecting the going-private decision, in contrast to Aslan and Kumar (2011). Marosi and Massoud (2007) report that free cash flow is significant for firms with high undistributed cash flow and low growth opportunities. High growth companies are likely to benefit from listing on a market as they will overcome their financial constraints by getting access to low-cost external financing (e.g. Pagano et al., 1998; Fischer, 2000; Bharath and Dittmar, 2006). Bharath and Dittmar (2006), Marosi and Massoud (2007), and Aslan and Kumar (2011) find that firms with high growth opportunities prefer to stay in the market to raise further capital. Using surveys, Bancel and Mittoo (2008) show that CFOs of European firms consider the financing growth opportunities to be a significant determinant of the going-public decision, while Brau and Fawcett (2006) report that US firms come to the

market for takeover purposes. We, thus, test whether firms with low growth opportunities, high free cash flow, and high insider ownership choose to delist voluntarily.

When a company is publicly traded, investors are less informed than insiders about the true value of their firm, resulting in an adverse selection problem. This problem inversely affects firms' quality as well as their share prices. Therefore, firms with asymmetric information are more likely to go private to avoid the cost of adverse selection (Bharath and Dittmar, 2010). Previous studies use size and the proportion of intangible assets over total assets to proxy for the adverse selection problem. The evidence is mixed. Pagano et al. (1998) and Bharath and Dittmar (2010) provide support for this hypothesis, but Marosi and Massoud (2007) find that the estimated coefficients for intangible asset ratios are insignificant, implying that information asymmetry is not a factor in the delisting decision. We use these two proxy variables to control the asymmetric information. We expect small firms with high intangible assets to be more likely to delist.

Mehran and Peristiani (2010) and Bharath and Dittmar (2010) argue that financial visibility and investor interest are crucial factors over firms' life cycle. They suggest that IPOs that fail to attract investors' interest because of their lack of financial visibility tend to have higher stock price volatility and are more likely to go private. Mehran and Peristiani (2010) use analysts' forecasts, stock turnover, and stock volatility to proxy for financial visibility. They find that IPOs that fail to attract investor interest because of lack of financial visibility have higher stock price volatility, and are more likely to go private. They show that financial visibility is more significant after the 1990s. Bancel and Mittoo (2008) confirm that investor recognition is a major factor affecting the listing-decision. We expect firms with high stock volatility and low stock turnover to have low financial visibility, and, hence a higher probability of delisting.

Enhanced liquidity is an additional benefit for publicly listed firms as IPOs demand ownership dispersion and higher level of liquidity driven by low transaction costs (Pagano et al., 1998). Survey evidence also documents that share liquidity is an important motivation for the decision to go public, and its significance is greater in the UK than in Continental Europe (Bancel and Mittoo, 2008). Bharath and Dittmar (2010) find that firms with less liquidity are more likely to go private. We, thus, expect voluntarily delisted firms to have lower liquidity.

2.3. *Data sources of the proxy variables*

We use the LSE website to gather information on subsequent raising capital in the post-IPO period and *investegate.co.uk* website to find the announcement date of the delisting. For the missing firms, we hand collect the relevant data from *Factiva* database. We collect the accounting data on balance sheets and income statements from *Thomson One Banker* database. We extract the stock market data, which includes daily stock prices and indices to compute the stock returns, market capitalization, and market-to-book ratio from *DataStream*. We download the prospectuses from *Perfect Filings* database and hand-collect data at the time of IPO, including total debt, total assets, directors' ownership, venture capital, underpricing, and market capitalisation.

[Insert Table 1 here]

2.4. *Methodology*

We first use a logit model to predict the factors that affect the delisting decision. The dependent variable is equal to one for voluntary delisted firms and zero for control firms. We match each delisted firms (test sample) with a firm that remained public (control sample) using the date of the IPO and the firm's first day market capitalisation within 15% range. We also use the Cox's Proportional hazard model to investigate the factors that contribute to the

delisting decision. Following Mehran and Prestiani (2010) and Bharath and Dittmar (2010), we predict the length of time it takes to delist, after controlling for related factors, as follows:

$$h(t, X(t)) = h(t, 0) \exp(B'X(t)) \quad (1)$$

where $h(t, X(t))$ is the hazard rate at time t for a firm with covariates $X(t)$. This model controls for the effects of differences between firms as well as changes over time. The hazard ratio ($\exp(B)$) indicates the change in the hazard for a unit increase in the independent variable. It measures the marginal effect of a unit increase in the independent variable for continuous explanatory variables, and the marginal effect when the event occurs for discrete explanatory variables. A hazard ratio higher than (equal to) one indicates that the delisted firm has a shorter (same) time to the event than the control firm.

Finally, we use the standard event study methodology to assess the market reaction to the delisting announcement. We collect stock prices from the *DataStream* and the announcements date are from *investigate.co.uk*. In addition, we use *Factiva* and hand-collect delisting announcements for firms with missing data. The market model coefficients α and β are computed over the estimation period which spans -270 to -21 days relative to the announcement date, with a minimum of 60 observations if the firm is delisted in the first 270 days relative to its IPO date. We use the FTSE AIM index as a proxy for the market return. We control for thin trading by using lead and lagged values the market return.

3. Empirical Results

3.1. Descriptive statistics

Table 2 shows the time series distribution of our sample firms. Panel A, Column 2 presents the year our sample firms delist and Column 3 the IPO year. The results indicate that delisting is relatively higher in 2006 and 2009, and that IPOs that came to the market in 2004 and 2005 are more likely to delist voluntarily. Panel B shows that, on average, firms are

quoted for about 3 years before they delist voluntarily, in contrast to 13 years reported by Bharath and Dittmar (2010) for firms that go private through leverage buyouts. However, delisting through transfers to Main market is more likely to occur within two years of IPOs, probably when the firm satisfies the 3 year trading statements requirements, while 61% of takeovers occur during the IPO year or one year after the IPO date.

[Insert Table 2 here]

Table 3 provides the characteristics of our voluntary delisted firms. In the first three columns, we measure the variables over the quotation period as the average of the variables from the IPO to the delisting date. Consistent with the access to capital markets hypothesis, the results show that, compared to control firms, our delisted companies are over-levered, suggesting that they are less likely to have raised equity capital during their public life. They also have lower growth opportunities, as measured by the market-to-book ratio. Interestingly, their average capital expenditure intensity (*Capex/Sales*) is similar to the control firms. In non-tabulated results, we find that firms that transfer to the Main market and those which were taken over have relatively high leverage, but they have significantly higher capital expenditure intensity and market-to-book ratios than their respective control firms and our voluntarily delisted firms. Overall, these findings imply that voluntary delisted firms are likely to finance their capital expenditure with debt, but the market does not value such investments, given their relatively low market-to-book ratio.

In terms of agency conflicts, Table 3 shows that over the IPO period, our voluntary delisted firms have significantly higher managerial ownership than the control firms, but their profitability and cash flows are relatively the same. Since the average free cash flow and ROA are negative, our results indicate that our test firms are less likely to delist because of the Jensen (1986) free cash flow problem. The relatively higher average level of insider

ownership of our test firms during their public life suggests that these firms may have come to the stock market with the intention of becoming private in the near future.

In line with the US evidence (Marosi and Massoud, 2007), our results show that voluntary delisted firms have higher intangible assets, but a relatively lower market value of equity, used as a proxy for size, than the control firms, implying that they have a higher probability of asymmetric information, particularly since small firms are less likely to be followed by a large number of financial analysts. The results also show that voluntary delisted firms have lower liquidity and financial visibility as measured by stock turnover, trading volume and stock volatility, although the economic significance of these factors is likely to be small. Overall, our results suggest that voluntary delisted firms have low growth opportunities, liquidity and financial visibility, but high leverage, and information asymmetries, suggesting that their delisting decision is likely to emanate from the relatively higher costs of listing.

Compared to firms that use alternative delisting methods, we find, but not report for space considerations, that firms which transfer to the Main market or taken overs are more likely to increase their funding opportunities to finance their high growth potentials. They are larger, and they have higher stock turnover and trading volume, but lower stock price volatility. Our results imply that firms transfer to a bigger and more regulated market to finance their growth options, when they satisfy the listing requirements. In contrast, low growth firms that cannot raise funds prefer to delist voluntarily and become private.

We test for robustness of our results by using data at the IPO date and one year before the effective delisting. The results reported in the next 6 columns of Table 3 are qualitatively similar. Our test firms have higher leverage, profitability, and insider ownership, but lower market-to-book ratio. They have the same underpricing, and size, by construction, than the control firms. The last column of Table 3 tests for differences in means and medians between

the IPO date and one year before the delisting date, following Bharath and Dittmare (2010). The results show that leverage of the voluntary delisted firms increased significantly over the two periods from 16% to 21%. At the same time, their market to book declined from 2.35 to 1.72, their market value went down from 2.37 to 2.02 and their trading volume from 2.60 to 1.89, but their insider ownership and proportion of intangible assets went up from 46% to 58% and 24% to 38%, respectively. The results based on the medians are qualitatively similar. The results suggest that during their quotation life, firms that delisted voluntarily came up to the market as high growth firms but drifted towards maturity. These firms may, thus, have less need for additional capital to finance their investments, and, consequently, they prefer to delist. Alternatively, they were not able to access the financial market to raise capital to create new investment opportunities and to maintain their high growth status. Interestingly, their capital expenditure, free cash flow, return on assets and stock turnover declined but not significantly. The increase in managerial ownership and the decrease in the free cash flow do not provide support for the agency costs explanation of the decision to delist voluntarily, unlike the going private through buyout (Lehn and Poulsen, 1989). Overall, our results suggest that although our test firms may have come to the market for other reasons than financing their growth opportunities, they are less likely to have used their quotation to rebalance their capital structure and to generate shareholder value.

[Insert Table 3 here]

In unreported results, we find that firms that delist for other reasons exhibit significantly different characteristics. In particular, although leverage of firms that transferred to the Main market did not change significantly over the two periods, and it is relatively similar to that of voluntary delisted firms, they maintained their high investments, growth opportunities, free cash flow and profitability, and their insider ownership is lower and declined over their listing period. Moreover, their market value, stock turnover and trading

volume increased significantly from their IPO to the delisting date. Overall, these results suggest that firms transfer to the Main market to finance their growth opportunities, and to mitigate their free cash flow problems, as in the Main market the corporate governance requirements are much higher than AIM's.

In Figure 3, we trace the changes in some of these fundamental factors two years after the IPO date. In line with the results reported above, Panel A shows that, relative to the control firms, leverage at the time of the IPO, and in the first two years of quotation, is higher for voluntary delisted firms and carried on increasing in the first two years after their IPO, while it remained relatively stable for the control firms. We assess further whether this increase in leverage is due to losses. Panel B reports the post-IPO date ROA. The results indicate that, overall, the voluntary delisted firms made relatively similar losses than the control firms. This suggests that the increase in leverage is likely to be driven by the fact that voluntary delisted firms did not raise equity after their IPOs, and thus they probably had to use more debt to finance their investments.

Panel C shows that growth opportunity as measured by market-to-book increased and then declined for voluntary delisted firms. In contrast, it was higher at the time of IPO for the control firms; it then decreased and rose significantly in year 3. The results suggest that the market may have expected our voluntary delisted firms to grow in the first year after the IPO but this growth did not materialise in the second year. We find, but not report for space considerations, that this decline in growth opportunities carried on up to their delisting year. Consequently, the market value of our sample firms is relatively smaller than the control firms', as reported in Panel D. We also find but not report that firms that transferred to the Main market have constantly created value since their IPO date. Overall, these results are in line with our findings from the univariate analysis, and suggest that firms delist voluntarily from AIM because of their inability to raise equity finance and to reduce their leverage.

[Insert Figure 3 here]

3.2. *The regression results*⁶

Table 4 reports the results based on the logit and Cox proportional hazard models. The first three columns are based on the logit model and investigate whether the inherent characteristics of the firm at the time of the IPO could predict the ultimate delisting decision. The dependent variable is a dummy set to one for delisted firms and zero for size and IPO date control firms. The marginal effect relates to the partial effect of each explanatory variable on the probability of delisting. In the first three columns the data is measured at the IPO date. In line with our univariate findings reported above, the results provide strong evidence of the impact of leverage and growth opportunities on the voluntary delisting decision. The proxy measures for agency conflicts, including profitability, size and insider ownership, do not appear to explain the decision to delist voluntarily.

The level of underpricing is also not significant, inconsistent with previous evidence which suggest that firms with higher degree of asymmetric information offer their share at a discount to their true market value to entice less informed investors (e.g., Michaely and Shaw, 1994). Therefore, since our voluntary delisted firms did not generate lower initial returns, they do not have lower adverse selection problem and do not signal stronger future performance. We find, but not report, that these arguments are consistent only with firms that delist to transfer to the Main market, whose underpricing is negative and significant, suggesting that they underprice less to signal their better future performance and their higher probability of issuing seasoned equity offerings. The remaining variables, including VC

⁶ We use, but not report, two goodness-of-fit tests, Hosmer and Lemeshow (1989) and Andrews (1988) to compare the fitted expected values to the actual values *by group*. If these differences are large, we reject the model as providing an insufficient fit to the data. We report Deviance statistics which support the goodness-fit in all our regressions.

backing, nomad (nominated adviser in AIM equivalent to underwriter in Main market) reputation, and insider ownership, do not affect the decision to delist voluntarily. Overall, our results suggest that mature IPOs with high leverage, which appear to come to the market to raise funding to rebalance their accounts, rather than to invest in growth opportunities, are more likely to delist voluntarily few years after their quotation.

In the next three columns, we test for robustness of our results by measuring our explanatory variables one year before the delisting date. The results confirm the strong positive impact of leverage, and the negative effect of growth opportunities. The probability of delisting increases by 5 times if voluntary delisted companies increase their leverage by one unit. The results also show a number of other significant factors that contribute to the decision to delist voluntarily. In particular, firms that have lower operating (ROA) or stock price ($CAR_{365,0}$) performance are more likely to delist, in line with Hansen and Öqvist (2012). Moreover, firms that delist voluntarily are more likely to have a higher insider ownership, in line with Amihud et al. (1990), who find that firms controlled by major shareholders are reluctant to use equity, and thus prefer to delist. They also have a lower probability of a seasoned equity offering.⁷

Overall, our results support the market access hypothesis, since leverage and market-to-book as a proxy for growth opportunities, are the only constantly significant coefficients in our regression, in line with Marosi and Massoud (2007) and Leuz et al. (2008) who find that delisted companies in the US have significantly higher leverage. However, these firms are not likely to have a higher risk as the variable beta is not significant. The recent literature on going private report mixed evidence for the impact of leverage, with Mehran and Peristiani

⁷ In unreported results, we find that firms that transfer to the Main market are likely to be large, to have raised equity capital, and to have high free cash flow, profitability, and pre-delisting stock returns, and lower stock price volatility, in line with Arcot et al. (2007) who find that AIM companies are encouraged to join to the Main market when they demonstrate their profitability.

(2010) finding a positive and significant effect, while Witmer (2005) shows that size and stock turnover are the key determinants of cross-delisting as smaller firms with low stock turnover are more likely to delist, suggesting that the factors which affect the cross-delisting are different from the voluntary delisting decision.

Our results do not provide strong support for the agency conflicts as free cash flow and return on assets, used as proxies for the agency conflict between shareholders and managers, are negative and statistically significant. Similarly our results do not provide strong support for the information asymmetry, liquidity and financial visibility hypothesis. In particular, at the time of the IPO, these hypotheses cannot forecast the determinants of the delisting decision. Our results are not consistent with Liu et al. (2012) who find the delisting from the Tokyo Stock Exchange is driven by liquidity.

The last three columns report the results based on the Cox proportional hazard model. The results show that voluntary delisted companies have a higher hazard rate of delisting if they have greater leverage and lower market-to-book ratio. These results are in line with the market access prediction. The hazard rate of the voluntary delisting increases by about 1.52 for a unit increase in leverage. In addition to the results based on the logit model, size is negative while intangibility is positive and significant, supporting the asymmetric information hypothesis. These results suggest that firms that remained small during their period of quotation are more likely to opt for voluntary delisting.

Following Mehran and Peristiani (2010), we also include stock volatility and stock turnover to assess the liquidity and financial visibility effects. The impact of stock turnover on the voluntary delisting decision is negative but not significant. We also use the log of trading volume as an additional proxy for liquidity and, in contrast to the stock turnover evidence, the coefficient is significant. Moreover, in contrast to our prediction, the relationship between stock volatility and the probability of the delisting decision is not

statistically significant. Mehran and Peristiani (2010) also do not support the impact of stock volatility, whose coefficient is negative, which is not consistent with the financial visibility hypothesis. They suggest that firms with higher probability of failure are less likely to delist voluntarily, supporting the financial distress notion.

[Insert Table 4 here]

In unreported results, we find that voluntary delisted firms are more likely to be similar to those that delist because of breach of regulation. In particular, they are both smaller, less likely to have raised equity capital during their quotation period, and have a higher leverage and intangible assets than their respective size and IPO date control firms. The only difference is that firms that delist because of breach in regulation generate similar operating and stock returns, have comparable market-to-book ratios, and are less likely to be from the high tech industries, than their control group. In contrast, our voluntary delisted firms are significantly different from firms that transfer to the Main market or delist because of takeovers. We find that firms that transfer to the Main market have similar leverage, growth opportunities, and likelihood of raising equity during their listing period, but they generate significantly higher operating and stock returns, and trading volume, and are larger than their control group. Firms that delist through takeovers are smaller, more likely to have significantly lower leverage (Hazard ratio of 2.81), and insider ownership, but more likely to have raised equity capital (Hazard ratio of 1.32) and to be from non-high tech industry, than their control group.

3.4. *Analysis of the ex-post market access*

We expand these arguments by investigating further the consequences of leverage and external financing over the IPO life cycle of our sample firms. We follow Pagano et al. (1998) and assess how leverage, equity and debt financing of our voluntary delisted firms,

compared to control firms, evolves over the IPO life cycle. We also investigate the impact of return on assets over the quotation period to expand further our results. We use the following specification to compare the ex-post performance of the voluntary delisted and control firms:

$$y_{it} = \alpha + \sum_{j=0}^3 \beta_j IPO_{t-j} + \beta_4 IPO_{t-n} + u_i + d_t + e_{it} \quad (2)$$

where the dependent variable, y_{it} , stands for leverage, defined as total debt divided by total assets, return on assets (ROA), calculated as earnings before interest and tax over total assets, or new debt or equity issues scaled by total capital employed. u_i , and d_t are firm and calendar year specific effects, respectively. IPO_{t-j} is dummy variable equal to one if the IPO was year $t-j$, and IPO_{t-n} is a dummy variable set to one if the IPO occurred more than 4 years before. This estimation is based on the fixed-effects model, which controls for the effect of the IPO and the four subsequent years by dummy variables.

Table 5 shows that our voluntary delisted firms reduced their leverage at the IPO date, probably by using the IPO proceeds, but then raise it significantly in their 2nd and 3rd year of listing. This increase in leverage is likely to have occurred through raising debt as the third row indicates that they recurred to debt financing in their 2nd, 3rd and 4th year of quotation. They did not have any seasoned equity offerings, and in year 2 and 3, their new equity issues is negative, probably due to share repurchases. Their return on assets also declines, but mainly in the second year after the IPO.

In contrast, the control firms deleveraged significantly after their IPO, in line with Pagano et al. (1998) and Aslan and Kumar (2011), who find that leverage decreases in the post-IPO period due to substantial equity issued. The results indicate that these control firms have not increased their debt financing, but raised equity roughly every year of their listing, in line with Pagano et al. (1998), who find that equity issuance increases significantly over three years after the IPO. Their return on assets increased throughout their quotation period, but it is statistically significant only in the first year of listing.

[Insert Table 5 here]

3.5. *The market valuation of the delisting decision*

Table 6 reports the cumulative abnormal returns over various event windows. On the announcement date $[0, 1]$, voluntary delisted firms generate excess returns of -8.32%, in line with the -9% and -12% observed by Leuz et al. (2008) and Marosi and Massoud (2007), respectively, in the US. Similarly, Liu (2005) finds that foreign companies that delist from the US stock exchange markets because of involuntary reasons experience abnormal return of -4.5%, statistically higher than the -8.5% experienced by domestically-delisted companies in the US reported by Sanger and Peterson (1990). This negative performance of delisted firms is different from the positive excess returns observed for firms that go private through leveraged buyouts, as the event period excess returns amount to +11% in the UK (Renneboog et al., 2007), and +14% in the US (Leuz et al., 2008). In the pre-announcement period, the excess returns are also negative. This negative performance appears to be permanent as the post-event period excess returns are negative, but not significant.

These results do not control for firm characteristics. Given that we focus the impact of leverage on the voluntary delisting decision, we distinguish between the delisted firms with an increase, compared to those with a decrease in leverage in the year prior to the delisting decision. The results reported in Table 6, Panel B, show that firms that increased their leverage in the year of delisting experience significantly lower excess returns, suggesting that their lack of raising capital constraints lead them to underperform much more than their counterparts that decrease their leverage.

For comparative purposes, we report also the results based on alternative delisting methods. We find that the announcement dates abnormal returns are not significant. However, we note that firms that delisted because of breach of regulation are similar to our voluntary delisted firms; they generate significant negative excess returns one year before the

delisting date. In addition, this negative performance is also observed up to 20 days after the announcement date. In contrast, firms that transfer to the Main Market generate positive returns throughout the event period, but unlike Jenkinson and Ramadorai (2008), who find that the announcement date excess returns amount to +5%, our results indicate that the excess returns for our sample firms are limited to the pre-event period. In contrast, firms that delist through takeovers generate strong negative returns 20 days before and 20 days after the announcement date. As stated above, these are reverse takeovers where the delisted firm is the bidder acquiring a target and trades subsequently under the name of the target.

[Insert Table 6 here]

4. Conclusions

We provide evidence that firms delist voluntarily from AIM when their leverage is relatively high, partly because they were unable to raise equity, their growth opportunities and profitability are low, and they generate negative returns during their quotation period. These firms are likely to have come to the market to rebalance their accounts, rather than to raise funding to finance their growth opportunities. During their quotation life, they are less likely to achieve this aim. Therefore, the lack of financing opportunities, which makes the costs of listing higher than the benefits, is likely to motivate managers to delist voluntarily from the stock market.

In contrast, firms that transfer to the Main market have good investment opportunities, generate positive returns, are able to raise additional equity capital when they are quoted on AIM, and they are more likely to transfer to a larger and more regulated stock market to increase their financing alternative, even though this entails higher regulatory costs. Therefore, unlike Gerakos et al. (2011), not all AIM firms underperform. Some that do appear to use AIM quotation as a backdoor to enter the Main market, when they prove that they can perform well and they can comply with its requirements. Thus, our results imply that

AIM does not cater for IPOs that need funding to finance their high growth prospects and those that came to rebalance their balance sheet.

The recent US literature distinguishes between the going private decision, which happens mainly through leverage buyout and the voluntary delisting decision (Leuz et al., 2008; Marosi and Massoud, 2007). To the best of our knowledge, no previous study investigates the determinants and the consequences of the specific voluntary delisting decision under the UK institutional setting, where firms are allowed to delist and still to have their shares traded in the private market. We focus on the effects of leverage on the delisting decision, as previous studies suggest that access to capital markets is the main motivation for the going-public decision. We show that firms that are unable to raise further equity capital are more likely to opt for voluntary delisting. We do not have full data to determine what happens to these firms after they become private. Further research will assess the extent to which voluntary delisting increases the survival rate of these firms and leads them to become more profitable and to come back to the stock market.

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Table 1: Definition of the Proxy Variables and the Hypotheses Tested

Variables	Description	Hypothesis	Sign
Leverage	Total Debt/Total Assets	Access to capital/ Raising capital	+
MB	Market value over book value of equity	Access to capital/ Raising capital	-
Capex/Sales	Capital Expenditure/ Total Sales	Access to capital/ Raising capital	-
SEO Dummy	A dummy equal to one if the company raised equity capital, and zero otherwise	Access to capital/ Raising capital	-
ROA	EBIT/Total Assets	Agency (Free cash flow problem)	+
Free Cash Flow	Free Cash Flow/Total Assets	Agency (Free cash flow problem)	+
Insider Ownership	Directors' ownership/Outstanding shares	Agency (Free cash flow problem)	+
ROA	EBIT/Total Assets	Agency (Free cash flow problem)	+
Size	Log market value of equity	Asymmetric information	-
Intangibility	Intangible Assets/Total Assets	Asymmetric information	+
Ln(Trade Volume)	Natural Logarithm of daily shares traded in past 12 months	Liquidity	-
Stock Turnover	Volume/Outstanding Shares	Liquidity/ Financial visibility	-
Stock Volatility	Stock returns' annual standard deviation	Financial visibility	+
CAR _{-365,0}	Cumulated average abnormal returns one year before the delisting date	Financial visibility	—
Beta	The sensitivity of shares to general market movements collected from Bloomberg	Risk/ Financial visibility	+
Under-pricing	(1st Day Price - Price Offer)/ Price Offer	Asymmetric information	+

Table 2: Time Series Distribution of Delisted Companies

Year	Voluntary delisting		Transferred firms to Main market		Takeovers		Delisted due to regulation			
Panel A. annual distribution of our sample firms by event and IPO years										
	Event Year	IPO Year	Event Year	IPO Year	Event Year	IPO Year	Event Year	IPO Year		
1995		4							1	
1996		14		5		2			4	
1997		16		5		2			7	
1998	0	4	1	3	1	3			5	
1999	8	13	5	2	2	2			2	
2000	12	20	6	2	8	11			12	
2001	8	7	1	1	2	5	2		6	
2002	5	8	3	1	2	2	4		3	
2003	13	6	1	3		3	8		5	
2004	10	24	3	5	7	18	1		29	
2005	13	26	0	2	24	17			27	
2006	24	10	1		15	9	2		13	
2007	13	3	3		9	7	24		1	
2008	13		3		9		42			
2009	36		2		2		32			
Total	155	155	29	29	81	81	115		115	
Panel B. Number of years that delisted firms were publicly trading										
	Voluntary delisting		Transfers to Main market		Takeovers		Delisted regulations		All delisted	
	N	%	N	%	N	%	N	%	N	%
IPO	1	1	2	4	23	28	0	0	26	7
+1	14	9	4	14	27	33	3	3	48	13
+2	23	15	8	28	11	14	20	17	62	16
+3	27	17	7	24	7	9	25	22	66	17
+4	40	26	5	17	7	9	23	20	75	20
+5	19	12	1	3	3	4	18	16	41	11
6-12	31	20	2	7	3	4	26	23	62	16
Total	155	100	29	100	81	100	115	100	380	100

This table presents the annual distribution of our sample firms by event and IPO years and by delisting method in Panel A, and the number of years that firms stayed public before delisting in Panel B. The sample includes 155 firms that delisted voluntarily. For comparative purposes, we also present the distribution of firms that delist using alternative methods.

Table 3: Characteristics of Delisted and Control Firms

	Quotation period (1)			IPO date (2)			One year before delisting (3)			(2) – (3)
	Delisted Firms	Control Firms	t-test MW	Delisted Firms	Control Firms	t-test MW	Delisted Firms	Control Firms	t-test MW	t-test MW
<i>Market Access</i>										
Leverage	0.16 (0.09)	0.13 (0.04)	3.52*** 4.02***	0.16 (0.08)	0.12 (0.03)	2.25** 1.99**	0.21 (0.16)	0.11 (0.04)	2.99*** 3.01***	-2.35** (1.91)*
Capex/Sales	0.46 (0.04)	0.40 (0.03)	0.56 1.05	0.35 (0.05)	0.48 (0.06)	-1.75* 1.49	0.25 (0.04)	(0.69) (0.10)	-2.74*** 1.98**	1.68* (0.25)
MB	2.35 (1.40)	4.04 (1.88)	-2.46** 3.82***	2.22 (1.91)	4.33 (2.80)	-3.58*** 5.25***	1.72 (1.30)	3.41 (1.95)	-4.02** 1.92*	2.44** (1.69)*
<i>Agency Conflicts</i>										
Free Cash Flow	-0.03 (0.03)	-0.40 (0.00)	1.02 1.90*	0.05 (0.01)	-0.07 (-0.03)	0.80 1.16	-0.07 (-0.03)	-0.02 (0.00)	-1.04 0.25	0.82 (1.14)
ROA	-0.22 (0.00)	-0.56 (0.00)	1.32 1.05	-0.10 (0.02)	-0.27 (0.01)	1.98** 0.13	-0.18 (-0.04)	-0.08 (0.00)	-1.95** 1.35	1.28 (1.25)
Insider Ownership	46.65 (49.11)	25.48 (15.11)	9.95*** 15.05***	51.35 (54.50)	44.81 (45.11)	3.56*** 4.89***	57.67 (57.15)	45.70 (44.63)	2.02** 2.75***	-1.99** (2.02)**
<i>Asymmetric Information</i>										
Intangibility	0.30 (0.07)	0.22 (0.13)	2.88*** 1.99**	0.24 (0.07)	0.20 (0.03)	0.25 0.80	0.38 (0.25)	0.23 (0.13)	3.21** 2.11**	-2.55** (3.51)***
Size	2.40 (2.37)	2.88 (2.52)	-2.56*** 1.78*	2.70 (2.08)	2.56 (1.95)	1.28 0.89	2.02 (2.15)	2.71 (2.79)	-2.55** 1.99**	2.51** (2.20)**
<i>Liquidity and Financial Visibility</i>										
Stock Turnover	0.37 (0.17)	0.52 (0.29)	-1.75* 3.02***	0.29 (0.11)	0.56 (0.32)	-1.56 2.58***	0.11 (0.09)	0.35 (0.23)	-3.87*** 4.25***	1.99** (0.84)
Ln(Trade Volume)	2.98 (2.55)	4.49 (4.00)	-4.89*** 3.57***	2.60 (1.90)	3.88 (3.98)	-2.25** 1.98**	1.89 (1.00)	3.97 (3.95)	-4.31*** 2.87***	3.00*** (1.66)*
Stock Volatility	0.03 (0.03)	0.04 (0.03)	-1.98* 3.00***	0.03 (0.02)	0.03 (0.02)	0.70 1.20	0.04 (0.03)	0.04 (0.03)	-0.51 0.11	-1.45 (1.20)
CAR _{-365,0}							-0.50 (-0.30)	-0.12 (-0.08)	-5.28*** 3.41***	
Under-pricing				0.12 (0.13)	0.10 (0.08)	0.82 (1.08)				

The table presents the means (medians) of the characteristics of the delisted and IPO date and size matched control firms. The total sample includes 155 voluntarily delisted firms between 1995 and 2009. The control firms are IPO date and size matched surviving firms. The data for the *Quotation period* column is the average over the period spanning from the IPO date to the delisting date. The data in columns entitled *Quotation period* and *One year before delisting* is based on the reported financial statements, while that in *IPO date* column is hand-collected from the prospectuses. Data on financial visibility and liquidity (stock turnover, trade volume, and stock volatility) in *IPO date* column are calculated for one year after IPO. The t-statistics for the differences in means (*t-test*) and the Wilcoxon-Mann-Whitney test (*MW*) of the differences in medians are reported for each period. The *t-test* and *MW* reported in the last column are for voluntary delisted firms' characteristics at *IPO date* and *One year before delisting*. The remaining variables are defined in Table 2. ***, **, * indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.

Table 4: Determinants of the Delisting Decision

	Logit Model						Cox Proportional Hazard Model		
	IPO date (1)			One year before delisting (2)					
	(1)	(2)	Marginal Effect	(1)	(2)	Marginal Effect	(1)	(2)	Hazard Ratio
Leverage	0.34*** (0.005)	0.33*** (0.007)	1.40	1.59** (0.034)	1.60** (0.033)	4.99	0.44** (0.048)	0.44** (0.039)	1.552
MB	-0.04* (0.090)	-0.04* (0.092)	0.96	-0.02** (0.048)	-0.01** (0.048)	0.98	-0.03* (0.057)	-0.01** (0.044)	0.990
ROA	0.02 (0.439)	0.02 (0.437)	1.72	-0.63* (0.083)	-0.64* (0.081)	0.53	-0.06 (0.218)	-0.06 (0.179)	0.935
Insider Ownership	0.54 (0.243)	0.57 (0.222)	1.02	0.00** (0.020)	0.00* (0.084)	0.99	0.01** (0.021)	0.01** (0.037)	1.008
Intangible				0.37 (0.355)	0.39 (0.342)	1.45	0.15* (0.098)	0.15** (0.011)	1.162
Size	-0.15 (0.961)	-0.20 (0.946)	1.01	-0.02 (0.997)	-0.02 (0.997)	1.00	-0.11*** (0.000)	-0.19*** (0.000)	1.006
Under-pricing		-0.00 (0.446)	0.99						
Foreign IPOs	0.42 (0.432)	0.46 (0.409)	1.59						
VC backing	0.33 (0.168)	0.41 (0.147)	1.51						
Nomad Reputation	-0.37 (0.395)	-0.33 (0.410)	1.39						
Stock Turnover				-0.04 (0.813)			-0.03 (0.789)		
Log. Trade Volume					-0.01 (0.951)	1.00		-0.14** (0.047)	0.864
CAR _{-365,0}				-0.37** (0.034)	-0.34** (0.040)	0.68			
Stock Volatility				-2.94 (0.552)	-3.27 (0.525)	0.58	-0.45 (0.392)	-0.58 (0.336)	1.308
Beta				-0.34 (0.477)	-0.41 (0.440)	0.04	-0.25 (0.655)	-0.37 (0.527)	0.688
SEO Dummy				-0.55* (0.060)	-0.55* (0.060)	0.65	-0.87*** (0.000)	-0.91*** (0.000)	0.401

Quotation Life				0.12*	0.11*	1.12			
				(0.062)	(0.064)				
High-tech	-0.33	-0.33	0.71	-0.71*	-0.70*	0.48	-0.29	-0.35	0.627
	(0.255)	(0.228)		(0.054)	(0.054)		(0.212)	(0.151)	
Constant	-1.03	-0.96	0.56	-0.75	-0.72	0.42			
	(0.156)	(0.156)		(0.252)	(0.747)				
Nagelkerke R ²	0.331	0.354		0.150	0.177				
H.L. test: (p-value)	(0.154)	(0.125)		(0.520)	(0.301)				
Likelihood Ratio							1645**	1551***	

This table presents the results of the determinants of the voluntary delisting decision. The sample includes 155 voluntarily delisted firms in 1995-2009. In the logit model, the dependent variable is equal to one for firms that delisted voluntarily and zero for size and IPO date control firms. In the Cox Proportional Hazard model, the dependent variable is time to delisting, assuming that there is a probability of delisting every year to satisfy the assumption of proportional hazard in which all explanatory variables are time-invariant. In (1), the data is measured at the date of the IPO. In (2) the explanatory variables are at the year prior to the delisting. Foreign IPOs are overseas companies listed on AIM. VC backing is a dummy variable set to one for a venture capitalist. Nomad Reputation is a dummy indicating whether the Nomad is among the top 20% advisors ranked according to numbers of IPOs. SEO Dummy is a dummy variable equal to one if the company raised capital and zero otherwise. Quotation life is the number of years from IPO date to the delisting date. High-tech is a dummy variable equal to one if a firm is in computer manufacturing, electronic equipment, computer and data processing services, and optical, medical, and scientific equipment. We hypothetically assume the same delisting date for the control firms. The remaining variables are as defined in Table 2. The Hosmer and Lemeshow (H.L) test shows the goodness-of-fit of the subsequent models. Its significance shows that the model does not fit the data. The last column reports the Hazard Ratios of Model (1) which indicates the marginal effect of a unit increase in the independent variable for continuous explanatory variables, and the marginal effect when the event occurs for discrete explanatory variables. If the hazard ratio is greater than one, the reference category (here 1) has a shorter time to event, and if it is equal to one there is no difference between the groups. The p-values are reported in parentheses. ***, **, * indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.

Table 5: Leverage and External Financing of Delisted Firms

	Sample	Year 0	Year +1	Year +2	Year +3	Year >3	F-test
Leverage	Delisted	-0.054** (-2.16)	0.004 (0.17)	0.030** (1.78)	0.002*** (2.25)	0.016 (0.35)	0.000***
	Control	-4.699* (-1.94)	-8.241 (-1.00)	-8.131** (-1.97)	-11.018 (-1.28)	-10.509* (-185)	0.000***
New Debt Issues	Delisted	-2.278 (1.41)	3.462** (2.05)	1.331* (1.72)	0.067* (1.69)	3.018 (1.13)	0.036**
	Control	0.000 (0.20)	-0.000 (-0.25)	-0.000 (-0.37)	0.000 (0.41)	0.001 (1.08)	0.275
New Equity Issues	Delisted	0.004 (1.49)	-0.007 (-0.68)	-0.005* (-1.78)	-0.009* (-1.69)	0.001 (0.26)	0.000***
	Control	0.020** (2.18)	0.021** (2.10)	0.026** (2.37)	0.013 (1.58)	0.030* (1.77)	0.001***
ROA	Delisted	0.012 (1.44)	-0.234** (-2.03)	-0.134 (-1.03)	-0.019 (-0.147)	-0.100 (-1.59)	0.000***
	Control	0.525 (0.31)	3.355* (1.85)	0.745 (0.36)	1.367 (0.599)	-0.190 (0.09)	0.991

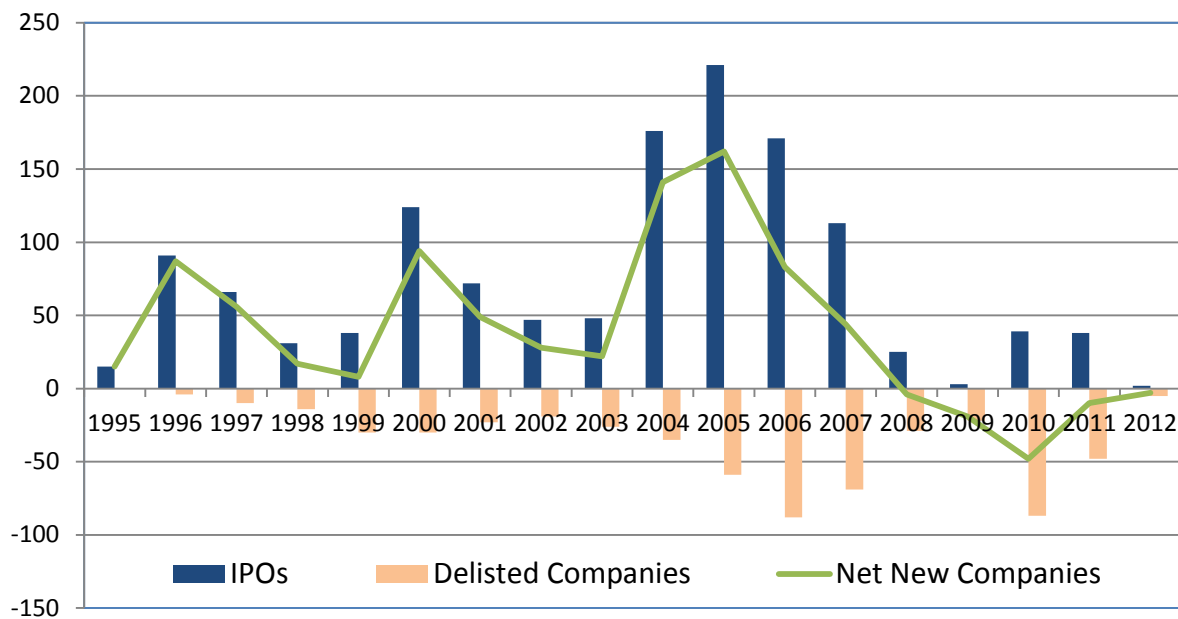
The table presents the results of $y_{it} = \alpha + \sum_{j=0}^3 \beta_j IPO_{t-j} + \beta_4 IPO_{t-n} + u_i + d_t + e_{it}$ where the dependent variable, y_{it} , stands for leverage, defined as total debt divided by total assets, new debt or equity issues, scaled by capital employed, or return on assets (ROA), calculated as earnings before interest and tax over total assets. u_i , and d_t are firm specific and calendar year specific effects. IPO_{t-j} are dummy variables equal to one if year $t-j$ was the IPO year, IPO_{t-n} is a dummy variable set to one if the IPO took place more than 3 years before. The table reports the coefficients on the IPO and the post IPO periods. The t-statistics are reported in parentheses. The last column reports the p-value of f-test of the hypothesis that the sum of the coefficients of all the post-IPO dummies is equal to zero. ***, **, * indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.

Table 6: Market Reaction to the Delisting Announcement

	Delisting Method			
	Voluntary	Transfer	Takeovers	Legislation
Panel A. Excess Returns Around Announcement Dates				
N	153	27	75	115
CAR _{-360,-2}	-1.57%	13.77%	4.95%	-6.19%
P-value (Z-test)	(0.045) ^{**}	(0.001) ^{***}	(0.526)	(0.000) ^{***}
%Positive	45.22	51.85	42.67	23.48
CAR _{-20,-2}	-2.69%	1.59%	-9.48%	-3.32%
P-value (Z-test)	(0.231)	(0.474)	(0.002) ^{***}	(0.221)
%Positive	45.10	43.35	32.00	34.35
CAR _{-5,+5}	-10.05%	0.50%	-4.58%	-1.17%
P-value (Z-test)	(0.000) ^{***}	(0.704)	(0.020) ^{**}	(0.570)
%Positive	43.14	40.74	33.33	37.04
CAR _{-1,+1}	-7.39%	0.59%	-0.90%	-0.27%
P-value (Z-test)	(0.000) ^{***}	(0.506)	(0.445)	(0.834)
%Positive	47.06	48.15	46.67	37.91
CAR _{0,+1}	-8.32%	0.37%	-0.71%	-0.61%
P-value (Z-test)	(0.000) ^{***}	(0.572)	(0.452)	(0.499)
%Positive	47.06	37.04	46.67	37.91
CAR _{+2,+20}	-1.93%	1.67%	-9.60%	-4.95%
P-value (Z-test)	(0.664)	(0.267)	(0.007) ^{***}	(0.037) ^{**}
%Positive	32.03	43.75	34.67	26.96
Panel B. Panel B. CAR _{-1,+1} of voluntary delisted firms split into changes in leverage				
	N	CAR _{-1,+1}	P-value (Z-test)	%Positive
Voluntary delisting - increase leverage	40	-10.57%	(0.020) ^{**}	47.76
Voluntary delisting - decrease leverage	80	-4.77%	(0.018) ^{**}	35.29
Increase – Decrease leverage			(0.045) ^{**}	

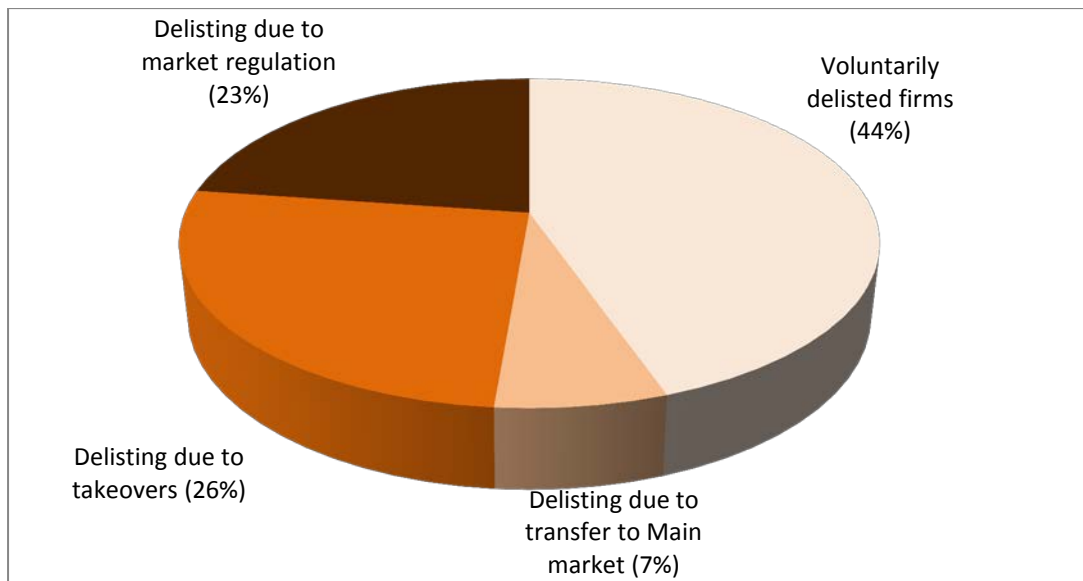
The abnormal returns are based on the market model with the coefficients α and β computed over the -257 to -21 days relative to the announcement date of the delisting. The FTSE AIM share index is used as a proxy for the market return. The sample excludes 2 voluntary delisting firms, 2 firms that transferred to the Main market, 6 takeovers because their stock price data was not available on DataStream. ^{***}, ^{**}, ^{*} indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.

Figure 1: Non-Financial IPOs and Non-Financial Delisted Companies



This graph shows the annual distribution of the number of listed and delisted of IPO companies in AIM during the sample period (1995-2012). The sample excludes financial companies because of their specific characteristics. IPOs are the newly listed firms. Delisted are firms that ceased trading on AIM either voluntarily, transferred to the Main market, taken over, or for market regulations reasons. *Net New Companies* is the difference between the number of IPOs and the Number of delisted companies.

Figure 2: Delisting Reasons



This figure shows the proportion of reasons for delisting on AIM. The sample includes non-financial firms. The data is extracted from the AIM statistics provided by the London Stock Exchange over the period 1995 to 2009.

Figure 3: Trend in Firms' Characteristics in Post-IPO Period



The sample includes 155 firms that delisted voluntarily. The Remained Public Companies are the control firms based on the IPO date and size as measured by market value of equity at the IPO date. The sample period spans from 1995 to 2009. The data for the IPO date is extracted from the prospectuses and the market value of the firm used in Panel C. and Panel D. is based on the issue price times the number of shares issued. In year 1 and year 2 after the IPO, the data is extracted from DataStream. In Panel A. Leverage is total debt divided over total assets. In Panel B. ROA is the ratio of earnings before interests and taxes over total assets.