The Impact of Leverage on the Delisting Decision of AIM Companies

Eilnaz Kashefi Pour[1] and Meziane Lasfer

Cass Business School, City University, 106 Bunhill Row, London EC1Y 8TZ

Abstract

We analyse the characteristics of firms that chose voluntarily to delist from the stock market between 1995 and 2009. We find that, compared to matched firms that remained publicly quoted, the delisted firms have significantly higher leverage and are unable to raise additional capital. The results are strong after controlling for agency conflicts, liquidity, and asymmetric information. On the announcement date, stock prices decrease by an average of 8% compared to positive excess returns for firms that switch to a more regulated market, and firms that increased their leverage in the year prior to the delisting decision generate significantly lower excess returns than other firms.

Keywords: Small firms; AIM; London Stock Exchange; Leverage, and Delisting

JEL classification: G14, G32

[1] *Corresponding author*. Tel. +44 20 7040 8634; Fax: +44 20 7040 8648 Email:Eilnaz.Kashefi-Pour.1@cass.city.ac.uk, and m.a.lasfer@city.ac.uk (Lasfer).

This paper was presented at Lancaster University and City University. We thank Professor Lambrecht and Dr. Pawlina at Lancaster University and seminar participants at both universities for their useful comments. All remaining errors are our own responsibility.

1 Introduction

Previous studies report that access to public markets for additional capital is the major motivation for firms to undertake IPOs (e.g., Aslan and Kumar, 2011; Bharath and Dittmar, 2010; Kim and Weisbach, 2005 and Marosi and Massoud, 2007).[2] For example, Kim and Weisbach (2005) report that raising capital is the key determinant for going public as firms raise substantial amount of new capital through IPOs in order to rebalance leverage. Similarly, extensive studies analyse going private transactions especially through leverage buyout (LBO), mainly in the US markets, focussing on how firms trade-off the costs and the benefits of being a public in order to go private (e.g., Maupin et al., 1984; Kaplan, 1991; and Bharath and Dittmar, 2010).

However, the literature has paid relatively less attention to the determinants and consequences of the voluntary delisting decision, which is a situation where a company stops trading in the market at its own request. Earlier studies suggest that the firms go private substantially differ from those that decide to delist. Leuz et al. (2008) show that delisting-companies are smaller and they have lower free cash flow compared to going private companies. Marosi and Massoud (2007) and Leuz et al. (2008) investigate the voluntary delisted firms referred to as *dark companies*. They suggest that firms decide to delist when the costs of being a public firm exceed the benefits.

However, these studies do not focus on the impact of financing decision and they are predominantly US, where the delisting transaction is different from other markets and firms deregister with the SEC but remain publicly traded over-the-counter (OTC) on the Pink Sheets (Marosi and Massoud, 2007), while, in the UK firms that delist, and do not to change their market quotation, become private. In this circumstance, investors have two options; either sell their shares before the delisting date or remain shareholders in what will become a privately owned company. Moreover, those studies mainly look at the impact of the corporate governance and the regulatory compliance of the Sarbanes-Oxley Act on July 31, 2002 on the going-dark decision using larger companies. 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 but the free cash flow problem associated with the agency cost is also highly significant. They also include leverage as a control variable but they provide mixed evidence as leverage is only significant in the

[2] However, Brau and Fawcett (2006) survey financial managers of IPOs and report that their main reason for coming to the market is to create a currency to finance takeovers.

post-SOX period. Moreover, these two studies include financial companies for which leverage is difficult to measure and may have different interpretation, as it is strongly affected by capital requirements and investor insurance schemes, and, hence their level of leverage is not comparable with that of non-financial companies (e.g., Rajan and Zingalas, 1995). Other studies also investigate delisted companies in the US (Hensler et al., 1997; Jain and Kini, 1999, 2000; and Fama and French, 2004) but they do not distinguish between the types, as they mainly assess the characteristics of companies which survive compared to those companies that delist from the trading exchange for negative reasons.[3]

In this paper, we analyse the impact of debt financing on the voluntary decision to delist. We focus on the delisting from the Alternative Investment Market (AIM) where younger and high growth firms chose to be quoted to finance their growth opportunities. Gerakos et al.(2011) find that AIM companies are less likely to generate positive returns in the post-IPO period than companies listed on other markets, including the UK Main market, and AIM is subject to higher asymmetric information and lower liquidity, suggesting that AIM firms are more likely to fail than firms in other markets

Since its launch in 1995, it has been attracting a large number of companies, reaching a peak in 2007 at 1,694 companies, including 394 international companies. Despite the substantial attention of AIM in attracting listings, the reasons and consequences of the delisting decision remains an open question. We identify a total of 445 non-financial IPOs that delisted over the period 1995 to 2009. We exclude 137 takeovers, 119 involuntary delisted firms (e.g., breach of market regulations), and those with missing data. Our final sample includes 184 delisted companies, split into 158 that went private and 26 that transferred to the Main market. We match each delisted firm (the test sample) with a control firm on the basis of their IPO date and the firm's size measured by market capitalisation at the time of the IPO.

We first compare the characteristics of each test firm with its control peer at the time of the IPO to predict whether firm's initial characteristics impact its delisting decision. We download all prospectuses to collect by hand data on debt, equity, market capitalisation, and

[3]Jain and Kini (2000) investigate the impact of VCs and underwriters' prestige on the IPO survival. They find that the post IPO survival time increases with the VC backing and with the prestige of investment bank. Fama and French (2004) focus on profitability and growth, as new listed companies have higher growth and lower profitability. However, those characteristics change over the IPO life cycle and would result in a decrease in survival rates of newly listed companies. Recently, Espenlaub et al. (2011) investigate the impact of the regulation on the survival AIM IPOs. They compare survivors to companies that delist due to merger and acquisition and other negative reasons, but they do not distinguish between voluntary delisting and delisting due to market regulations, which is important to the propose of their study.

ownership structure at the IPO date. We find that the delisted companies have higher leverage and lower growth opportunities, in line with the market access hypothesis. However, other factors, such as insider ownership, under-pricing, and profitability, used to proxy for the agency costs and information asymmetry effects, are not statistically different across the two samples. We find similar results when we use a multivariate logit regression model.

We use the logit model to forecast the determinants of the delisting decision at the exact time of the IPO. We find that firms with higher leverage and less growth opportunities are more likely to delist supporting the market access hypothesis. In contrast, we do not find evidence that agency costs and information asymmetry can predict delisting at the time of the IPO. Therefore, given the results at the time of IPO, we could only predict that firms are more likely to delist if they have high leverage and low growth opportunities.

We then use the Cox proportional hazard model to investigate the determinants of the delisting decision given changes that happen to the firms' characteristics over time. In line with the logit regression results, we find that leverage and growth opportunities, as measured by market-to-book ratio or capital expenditure explain significantly the decision to delist. We also find that delisted firms are less likely to be from high-tech industries, and to raise seasoned equity capital. The results of hazard rates, used to assess how much the hazard the delisting event increases for a unit change in the explanatory variable, show that the marginal effect of leverage is the most important factor among other determinants of the delisting decision. Our results imply that firms that do not raise equity capital, as they have high debt and low growth opportunities and capital expenditure, are more likely to delist.

However, our results may also indicate that delisted firms rely more on debt financing because they are not able to raise equity capital, making the cost of listing higher than the benefit. We assess this possibility by analysing other fundamental differences across firms in our sample. We find that smaller firms with a great proportion of intangible assets are more likely to delist, consistent with the prediction of asymmetric information. However, our results do not support the liquidity hypothesis, as delisted firms do not have lower trading volume. Moreover, our results provide mixed evidence for the impact of the agency conflict as the free cash flow is not a key determinant of the delisting decision, but, consistent with the agency hypothesis, closely held firms are more likely to delist. In particular, we find that delisted firms have more concentrated ownership, but they do not have higher undistributed cash flow and return on assets, used as alternative proxies for the free cash flow problem. Our results suggest that the delisting decision is different from going private through leverage buy outs (LBOs) where firms have high leverage and free cash flow (Lehn and Poulsen, 1989).

Overall, our results suggest that firms delist when they are not able to reduce their leverage after going public. Pagano et al. (1998) and Aslan and Kumar (2011) find that leverage has been decreasing in the post-IPO periods. However, these results are not likely to apply to the delisted companies, as their leverage increases significantly since the second year after the IPO, and they are not able to raise additional equity capital, questioning therefore, the benefits of listing. We find that for the delisted companies, debt financing increases during the first three years after the IPO. There is no considerable change in equity financing except the second and the fourth year after the IPO, which shows that equity financing declines significantly for the delisted companies.

Finally, we investigate the market reaction to the delisting announcement. We use the event study methodology and compute the abnormal returns over the event window -20, +20 days relative to the announcement date. We use the market model with the coefficients α and β computed over the -270, -21 days. We find that delisted firms experience cumulative accumulative abnormal returns (CARs) of -7% on the announcement period [0, 2]. The results are very similar to Leuz et al.(2008), who report CARs of -9% market reaction and Marosi and Massoud (2007) who find -12% in the US. Interestingly, we show that these excess returns depend on the firm's post-delisting status. In particular, firms that switch their quotation into the main market experience a positive announcement date excess returns of about 1%, in line with Jenkinson and Ramadorai (2008), who find that the announcement of a switch from AIM to the Main market generates a significant positive return about 5% on the announcement date and positive returns in the following 6 months, suggesting that switching to the Main market is associated with good news in the short and long-run. However, our sample size is considerably smaller than theirs as they do not exclude financial companies and they do not analyse voluntary delisting decision. In addition, we find that firms with higher leverage generate significantly higher returns in the pre-delisting period, but, on the announcement date, their abnormal returns are significantly lower, suggesting that the market reaction depends on the severity of leverage, i.e., the inability of the firm to raise equity capital.

The rest of the paper is structured as follows. Section 2 provides a review of the literature and sets up the hypotheses. Section 3 presents the data and methodology. Section 4 discusses the results, and the conclusions are in Section 5.

2 Review of Literature and Hypotheses

2.1 IPOs

The IPO literature suggests several benefits of listing on a stock exchange including relaxing borrowing constraints, greater liquidity, greater bargaining power with banks, and investor recognition (e.g., Ritter, 1987 and Pagano *et al.*, 1998). Despite those benefits, listing is subject to substantial direct and indirect costs. Direct costs refer to administrative costs, underwriting fees, registration fees, and indirect costs deal with adverse selection and agency conflicts. Bharath and Dittmar (2010) argue that since as the nature of the decision on whether to go public is affected by several factors and represents a trade-off between the costs and the benefits of listing, the decision to go out of the public market is in the same approach. Therefore, given the costs and the benefits, firms choose to delist when the costs of listing exceed the benefits. However, Leuz *et al.*, (2008) document that those firms, which opt to delist, significantly differ from those go private in terms of determinants and economic consequences. In this section, we discuss the theories of why firms go public and identify the related hypotheses on the delisting-decision.

2.1.1 The Benefits of Listing/ The Costs of delisting

2.1.1.1 Access to Capital

Getting access to alternative sources of financing is the main benefit of an initial public offering. Getting access to public markets and enhanced transparency would enable firms to have a greater bargaining power with banks resulting in relaxing the borrowing constraint (Pagano *et al.*, 1998 and Bharath and Dittmar, 2006). More especially, Pegano *et al.* (1998) conclude that firms go public to rebalance their leverage. However, other studies show that financing is not the primary determinant of listing. Survey studies find that although capital structure is one of the key motivations for going public, it is not rated the top. For example, the survey conducted by Brau (2010) shows that companies go public primarily to create public shares for use in future acquisitions, and debt financing is only mentioned as 5th under the minimisation of the cost of capital and 10th under debt is becoming too expensive. Bancel and Mittoo (2008) also suggest that those IPOs could enhance the bargaining power with bankers are more likely to reduce their leverage after going public. While the firms that are not able to rebalance their leverage would decide to abandon public life. This notion is in line with Aslan and Kumar (2009) who find that leverage has a positive effect on the going-

private decision. Consequently, we expect that those IPOs that could not benefit of gaining access to equity capital have greater level of leverage and hence they are more likely to opt to delist.

Moreover, the benefits of going public are more likely to be important for firms with high growth opportunities. Those companies would prefer to be public to overcome their financial constrains as listing on a stock exchange provides an opportunity to get access to low-cost external financing (e.g. Pagano *et al.*, 1998, Fischer, 2000, and Bharath and Dittmar, 2006 (225). Recent empirical studies by Bharath and Dittmar (2006), Marosi and Massoud (2007), and Aslan and Kumar (2009) find that firms with high growth opportunities prefer to stay in the market to raise further capital. However, survey studies provide mixed evidence. Bancel and Mittoo (2008) conduct a survey on CFOs of European firms, where their result support that financing growth opportunities appears to be a significant determinant of the going-public decision. In contrast, this result is not consistent with the survey findings of Brau and Fawcett (2006). Those survey studies do not study directly the factors contributing to the going-private decision[4]. Following by empirical studies, we expect that firms with low growth opportunities are more likely to abandon public life and we use market-to-book to measure growth opportunities.

2.1.1.2 Liquidity

Enhanced liquidity is an additional benefit for publicly listed companies. IPOs demand for ownership dispersion and higher level of liquidity. Shares of public companies can be traded on a stock exchange at cheaper costs resulting in greater liquidity (Pagano *et al.*, 1998). Similarly, the survey of Bancel and Mittoo (2008) document that share liquidity is an important motivation for the going-public decision and its significance is greater in the English system than their Continental European peers. With respect to the going-private decision, Bharath and Dittmar (2010) find that those firms with less liquidity are more likely to go private. This finding suggests that as the liquidity decreases in public markets, firms may decide to abandon public life. We therefore, expect that the higher the liquidity is, the less likely the firm is to go out of trading. Following by empirical studies, we use trading volume as proxy for liquidity.

[4] Brau and Fawsett (2006) also survey CFOs of companies that had filed a prospectus to go public but then subsequently withdrew the offering and CFOs of private firms that were large enough to go public but chose not to. They find that these firms chose to stay private to maintain decision making control. The financing (already have enough capital) came only 6th in their preferences.

2.1.1.3 Control Considerations

Despite the predominant factors (access to capital markets, relaxing borrowing constraint, and liquidity) that earlier studies have discussed in relation to the determinants of firms' going-public decision, a recent study of Mehran and Peristiani (2010) tests the financial visibility and investor interest as additional crucial factors that contribute to the listing decision. They use analyst stock return, stock turnover, and stock volatility as proxies for financial visibility. They find that IPOs that fail to attract investor interest with lack of financial visibility are more likely to go private. They argue that firms with less financial visibility tend to have higher stock price volatility. Their result shows that the significance of financial visibility has been increased since the 1990s. This notion is not limited to empirical studies, similarly the survey of European CFOs conducted by Bancel and Mittoo (2008) confirms that investor recognition is a major factor affecting on the listing-decision. We therefore expect that firms with greater stock volatility have less visibility in the public market and thus are more likely to delist.

2.1.2 The Costs of Listing/ The Benefits of Delisting

2.1.2.1 Asymmetric Information

When a company is publicly traded, investors are less informed than insiders about the true value of firms resulting in the 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). Empirical studies use size and the proportion of intangible assets over total assets as proxies for the adverse selection problem. However, they provide mixed evidence. The results of Pagano *et al.* (1998) and Bharath and Dittmar (2010) are consistent with this hypothesis, but in contrast to Marosi and Massoud (2007). Marosi and Massoud (2007) find that the estimated coefficients for intangible asset ratios are insignificant.

2.1.2.2 Agency Conflicts

Publicly listed companies potentially suffer from the agency conflict between managers and shareholders that emanates from the free cash flow problem (Jensen and Meckling (1976)). This problem is particularly large when firms do not have growth opportunities to reinvest the free cash flow (Opler and Titman, 1993). 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. Therefore, companies 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 for the going-private decision in contrast to Aslan and Kumar (2009). Marosi and Massoud (2007) investigate delisted companies, where they find that free cash flow is significant particularly for firms with high undistributed cash flow and low growth opportunities. We expect that companies with higher free cash flow would suffer from the agency conflict and thus they are more likely to delist. Following by empirical studies, we use earnings before interest and tax over total assets and free cash flow over total assets to test the free cash flow problem.

2.2 The Survival and Failure of IPOs

There are a large number of studies investigating the survival of IPOs in the US market (Hensler et al., 1997; Jain and Kini, 1999, 2000; and Fama and French, 2004). However, while comparing surviving companies relative to non-surviving in the post-IPO periods, previous studies do not distinguish among the various reasons for delisting. Hensler et al. (1997) assess the survivability of IPOs and compare surviving IPOs with those delisted from NASDAQ for negative reasons. They control for a handful of firms' characteristics: size, age, initial return, risk, and insider ownership. They find that survival time increases with age, size, and initial return while it decreases with risk factors. Jain and Kini (1999) access the impact of VC and underwriters' prestige on IPO survival. They find that survival increases with VC backing and higher investment bank prestige. Fama and French (2004) consider those companies entered on the NYSE, AMEX, and NASDAQ between 1973 and 1991. They focus on profitability and growth, as newly listed companies have higher growth and lower profitability. However, those characteristics would result in a decrease in the survival rates of newly listed companies.

In another US study, Jain and Kini (2008), investigate the impact of strategic investment at the time of IPO on post-IPO performance and survival probability. Examining the newly listed companies during 1980 and 1997, they find that the extent of diversification through an additional line of business decreases the probability of failure significantly. Their results for the R&D effect on future operating performance are ambiguous and mixed, depending on the choice of expectation model. For example, when they measure post-IPO performance as the change in industry-adjusted operating returns on assets for the five years after the IPO, the impact of R&D is positive and significant. But when the change in

industry-adjusted operating returns on assets for the year prior to the IPO is the criterion, R&D is neither positive nor significant. In addition, they find no evidence to support the relationship between post-IPO performance and firms' advertising intensity.

With respect to other countries, to the best of our knowledge, two recent papers have examined the Canadian market: Bradley et al.(2006) and Carpentier and Suret (2011). Bradley et al.(2006) investigate initial returns of penny stock IPOs (those that are not listed on a national exchange with an offer price below $5) versus ordinary IPOs, followed by the long-run performance of those companies over the 1990–1998 period. They show that penny stock IPOs experience higher initial returns than ordinary IPOs, but the long-run underperformance of those is better than that of penny stock IPOs. They find that quality of underwriters can support prediction of initial returns, and report mixed evidence for the impact of VC on initial returns. Carpentier and Suret (2011) mainly look at the impact of the listing requirements on the surviving IPOs during 1986 and 2003. They consider non-surviving companies as those delisted by the exchange, by reserve takeovers, and by company request. Therefore, they do not distinguish among different types of delisting. They find that venture capitalists (VC) backed IPOs are more likely to survive, but the impact of VC on the failure risk is not significant. They also suggest that the probability of survival in the post-IPO period is significantly affected by the initial listing requirements, such as prestigious underwriters and/or audit firms.

More recently, Espenlaub et al.(2011) have examined the probability of surviving post-IPO in the period 1995–2004. However, their focus is limited to investigating the effect of AIM regulations, as AIM is a lightly regulated market. They find that survival time is increased by tightening the listing requirement. They compare surviving companies with non-surviving companies that delist because of merger and acquisition or for other negative reasons.

2.3 Delisting Procedures in the US versus the UK

In the US, the delisting process goes through two steps. Fist, companies need to delist from the exchange (NYSE, AMEX, or NASDAQ), which may take about 21 days, depending on the exchange. In this situation, they will trade over the counter or on the Pink Sheets. The firm may then intend to deregister from the Securities and Exchange Commission (SEC). In doing so, the company needs to file a Form 15 and this needs only the approval of the company's board of directors. In general, the process of deregistration takes up to 60 days

(Marosi and Massoud, 2007). Once they deregistered, they are not required to provide public information. (see Macey et al., 2008 and Marosi and Massoud, 2007).

Unlike the US delisting process, in the UK, a firm that decides to delist should notify the London Stock Exchange to cancel its trading on the exchange at least 20 days prior to such date. In AIM, this circumstance should be conditional upon the approval of not less than 75% of votes cast by shareholders in the general meetings (see AIM publications in London Stock Exchange).[5]The Main market, also, incorporates a somewhat equivalent transaction for the delisting. The company advises the exchanges of the delisting intention at least 20 days in advance. It also needs to announce its intention through a regulated information service. Once the intention is agreed, "the exchange will announce the intention to cancel individual securities through the reference data service and the intention to cancel issuers through a regulated informationservice" (see Main publications in London Stock Exchange, p. 31).[6]Shareholders' approval for the delisting decision depends on whether the company is a premium or standard listed one, as the former needs 75% of shareholders' approval in contrast to the premium listed that is not subject to shareholders' approval. Once the company is delisted from the exchange, it becomes private and investors have two options; either sell their shares before the delisting date or remain shareholders in what will become a privately owned company.

3 Data and Methodology

3.1 Sample

We use five main databases to collect our data. We first collect all IPOs on AIM between 1995 and 2009. This data which includes 1,773 companies is collected from New Issues and IPO Summary spreadsheet provided by the *London Stock Exchange (LSE), Londonstockexchange.co.uk.* We also use this website to construct the sample of the delisted firms and the reasons for such a decision. There are 1,666 companies delisted from AIM. LSE classifies delisted companies into five main categories: merger and acquisition, takeover, transfer to the Main market, company's request, and market regulations. Figure 1 shows delisting reasons in percentage.

[5]AIM rules can be downloaded from London Stock Exchange, http://www.londonstockexchange.com/companies-and-advisors/aim/advisers/rules/aim-rules-for-companies.pdf.

[6]Main rules can be found at the London Stock Exchange website: http://www.londonstockexchange.com/companies-and-advisors/main-market/documents/brochures/admission-and-disclosure-standards.pdf

M&A, takeover, and transfer to the Main market are specified directly in LSE. For the purpose of our analysis, we consider "delisted at the request of the company" and "transfer to the Main market" as voluntary reasons and other reasons such as market regulatory, M&A, and takeover as involuntary reasons. We exclude companies that delist because of involuntary reasons. For robustness, we screen all sample firms in *DataStream* to verify that they are no longer listed. We then match IPOs with our delisted companies to find how many IPOs delisted as well as the date of delisting. We also exclude financial companies. This procedure results in 445 non-financial IPO companies of which 195 of those companies delisted voluntarily. After excluding 11 firms with no data, our final sample includes 184 delisted companies. We also gather information on subsequent raising capital from the LSE, and then match it with our sample to find how many of them raise capital over their IPO life cycle.

Figure 2 shows the number of listed and delisted companies in AIM during the sample period (1995-2009), suggesting that despite an increase in number of newly listed companies in AIM, the number of delisted companies increased significantly since 2000.

In order to investigate the market reaction, we use two resources in order to find the delisting announcements. First, we use investegate.co.uk website, which offers a large archive for firms' announcements to find the delisting announcements. We then use *Factiva* database and hand-collect the delisting announcements for the firms that are not provided by investegate.co.uk.

We use *Thomson One Banker* Database to collect the accounting data on balance sheets and income statements during the sample period from 1995 to 2009. 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.* In order to find the market and accounting data at the time of IPO, we download the prospectuses from *Perfect Filings* database and hand-collect all data including total debt, total assets, directors' ownership, venture capital, and market capitalisation.

Our dataset is different from recent studies, which examine why firms go private (Mehran and Peristiani, 2010; Aslan and Kumar, 2011; and Bharath and Dittmar, 2010) rather than deciding to delist. They use number of public companies that went private in leveraged buyouts (LBOs). However, Marosi and Massoud (2007) and Leuz et al. (2008) study the firms that have "gone dark". Those companies opt to delist voluntarily in the US market,

where the delisting rules are different from the UK.[7] They mainly assess the impact of SOX and agency costs on the delisting decision. Recently Espenlaub et al. (2011) investigate the impact of AIM's regulatory on the survival IPOs. They assess the characteristics of companies survive compared to those companies delist from the trading due to merger and acquisition and other negative reasons. However, they do not distinguish between companies that delist voluntarily and those that delist due to market regulations.

Table 1, Column 2 presents the year in which the companies decide to delist. Column 3 shows the year in which those companies went public. The table indicates that there is an increase in the number of delisted firms since the 2000s.

3.2 Model

For the purpose of this chapter, we use a range of methodologies. First, we use a matched logit model to predict the factors affecting firms' delisting decision. The dependent variable is binary, one if the company is delisted and zero otherwise. It forecasts the probability of the event with respect to the related independent variables. The dependent variable is determined by whether it exceeds a threshold value (Equation 1).

$$y_i = \begin{cases} 1 & y_i^* > 0 \\ 0 & y_i^* \leq 0 \end{cases} \quad (1)$$

The logit estimation is given in Equation (2):

$$E(y_i/x_i, B) = 1 * \Pr(y_i = 1/\, x_i, B) + \, 0 * \Pr(y_i = 0\, /x_i, B) = \, \Pr(y_i = 1\, /x_i, B) \quad (2)$$

We match the delisted firms (test sample) with those that remained public (control sample) using a clear starting point. We match the test sample with the control sample based on two factors: the date of the IPO and the firm's size measuring as market capitalisation at the time of the IPO[8].

Table 2, provides the details of independent variables with the expected sign in order to test the hypotheses in terms of the delisting decision. We use all explanatory variables

[7] In accordance with Rule 41, a firm should notify the London Stock Exchange to cancel its trading on the AIM at least 20 days prior to such date. This is conditional upon the approval of a minimum of 75% of the votes cast by shareholders at the general meetings. This transaction is very different from the delisting process in the US. In the US, the delisting process would go through two steps; fist, the companies need to delist from the exchange (NYSE, AMEX, or NASDAQ), which may take about 21 days depending on the exchange. In this situation, they would trade over the counter or on the Pink Sheets. Then they need to file a form 15 in order to deregister from SEC and this step takes about 60 days. Once they deregistered, they are not required to provide public information. (See Macey et al., 2008 and Marosi and Massoud, 2007).

[8] For those times what we have difficulties to match the date of the IPO, I consider 11 months around the date of the IPO. The size of the company is matched within 15% range.

indicated in Table 2 in a year following the IPO. We also attempt to investigate the factors at the time of the IPO in order to predict to what extent they affect the delisting decision. However, at the exact time of the IPO, we could only find the information related to debt, equity, insider ownership, and under-pricing. Therefore, a limited number of variables could be used in order to test the hypotheses.

Table 2 shows the factors contributing to the delisting decision, in particular the impact of leverage as well as other proxies to control for the agency, asymmetric information, and financial visibility hypotheses. According to the market access hypothesis, previous studies suggest that firms decide to go private to rebalance their capital structure, in particular reducing leverage (Pagano et al., 1998). The literature also argues that the market access is an important motivation for firms in order to finance their investment (Pagano et al., 1998; Fischer, 2000; and Bharath and Dittmar, 2006). Therefore, we expect that firms with less market access are more likely to delist voluntarily. In particular, firms that do not have opportunity to issue equity have higher leverage and hence are more likely to go out of trading. Firms with higher growth opportunities are more likely to stay in the market in order to raise further capital to cover their investments. We use two alternative proxies for growth opportunities, market-to-book and capital expenditure ratios.

With respect to the agency hypothesis, previous studies suggest that firms with higher conflict between managers and shareholders have greater free cash flow problem and thus they are more likely to go private (Lehn and Poulsen, 1989; and Aslan and Kumar, 2011). Therefore, we expect that firms with greater free cash flows are more likely to go out of trading. In addition, the conflict between managers and shareholders is greater in more closely held firms and thus firms with higher insider ownership are more likely to delist.

Moreover, the degree of asymmetric information affects the decision of delisting. Insiders are better informed about the true value of assets than outsiders and hence insiders may take benefits of their private information by going private (Marosi and Massoud, 2007). We use two proxies to control the asymmetric information, size of the firms and the ratio of intangible assets to total assets. We expect that smaller firms and those firms with higher intangible assets are more likely to delist.

Recent studies by Mehran and Peristiani (2010) and Bharath and Dittmar (2010) test the financial visibility and investor interest as crucial factors over firms' life cycle. They suggest that those IPOs that fail to attract investor interest with lack of financial visibility are more likely to go private. They argue that firms with less financial visibility tend to have higher stock price volatility. However, the two existing empirical studies for the voluntary

delisting decision (Marosi and Massoud, 2007 and Leuz et al., 2008) have not investigated the impact of financial visibility on such a decision. Therefore, we use stock turnover and stock volatility to control for financial visibility to fill the existing gap in previous empirical studies that investigate the voluntary delisting decision in the US. We expect that firms with higher stock volatility and lower stock turnover have lower financial visibility and hence they are more likely go out of public markets.

We then investigate the factors contributing to the delisting decision by using the Cox's Proportional hazard model, following Mehran and Prestiani (2009) and Bharath and Dittmar (2010), to find the length of time it takes to delist controlling for the related variables. The predictor variables are used to predict the event, which is the time of the delisting. This model measures the duration to the even that we defined. Following the logit model, in the hazard model, we control delisted companies with the remained public companies by size and the date of IPO. The hazard model is (Equation 3):

$$h\,(t, X\,(t)) = h\,(t,0)\,exp(B\,X(t)) \qquad (3)$$

Where is 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. However, for continuous explanatory variables, the hazard ratio measures the marginal effect of a unit increase in the independent variable. For discrete explanatory variables, the hazard ratio indicates the marginal effect when the event occurs. The hazard ratio greater than one means that the reference category (here 1) has a shorter time to event and otherwise. If the hazard ratio is equal to one, it indicates that there is no difference between the two groups.

In order to investigate the impact of delisting announcements on the market reaction, an event study is used.[9] This methodology includes several stages. First, the event should be identified following by the event window.[10]The event window is a period around the event, in which the stock price reaction will be assessed. In the last empirical study, we use the event methodology in order to test the market reaction to the delisting announcement. Therefore, the delisting announcement is the event and the period of interest around such an announcement is the event window. Depending on the purpose of the study, the event window includes some days before and after the event to investigate the price reaction. The

[9] In particular, it investigates the impact of a specific event on a firms' stock price. A firms' stock price could respond to any announcement such as earnings, capital change, merger and acquisitions, dividends, initial public offering, delisting, etc.

[10] In this thesis, I focus on the market reaction to delisting announcements.

further stage is to clarify the estimation period. It is a period prior to the event window to compute expected returns as well as standard deviation of the returns. Figure 3 illustrates the event window and the estimation period. As this figure shows, $t=0$ is the event and $[T_{-t}, T_{+t}]$ is the event window. The parameter from the estimation period $[T_1, T\text{-}_t]$ will be computed to calculate the abnormal returns.

We use the market model to investigate the market reaction to the delisting announcement. For this purpose, with daily data, the return on a stock would be calculated as Equation (4):

$$R_{i,t}= \alpha_i+ \beta_i R_{M,t} + \varepsilon_{i,t} \quad (4)$$

Where $R_{i,t}$is the return on the common stock of the ith company in the sample at day t; $R_{M,t}$ is the return on market index, which is FTSE all share at time t, and $\varepsilon_{i,t}$ is the error term.

The Equation (4) should be run for the security returns against the corresponding market index returns, which is the Financial Times All Shares Index (in this chapter) to find the α and β from the estimation period $[T_1, T\text{-}_t]$. Then Equation (5) will be computed to find the abnormal returns over the event window $[T_{-t}, T_{+t}]$ for each security (here we compute the accumulative abnormal returns over the event window [-20, +20] and the estimation period is [-270, -21] to find the α and β):

$$AR_{i,t}= R_{i,t}- (\hat{\alpha}_i+ \hat{\beta}_i R_{M,t}) \quad (5)$$

Where $AR_{i,t}$is the abnormal return on the common stock of the ith company in the sample over the event window; $R_{M,t}$ is the return on the market index for the event period.

For the event period, the abnormal returns are cumulated (CAR) as Equation (6):

$$CAR_{(T_-tT_+t)} = \sum_{t=T_-t}^{T_+t} AR_t \quad (6)$$

Finally, with respect to the number of companies (N) in the sample, cumulated average abnormal returns (CAAR) will be calculated as Equation (7):

$$CAAR_{it} = \frac{1}{N}\sum_{i=1}^{N} AAR_{it} \quad (7)$$

To test whether the cumulative abnormal returns are statistically significant over the event period, the Equation (8) is used:

$$t = \frac{CAR_{(T_-tT_+t)}}{S(AAR)\sqrt{T}} \quad (8)$$

Where S is standard deviation and T is the event period $[T_{-t}, T_{+t}]$.

5.4 Results

4.1 Descriptive Statistics

Table 3 describes the number of years that delisted firms were in AIM. On average, the firms were in AIM for about 4 years. Interestingly, this result is significantly different from the studies based on the going private decision. For example, Bharath and Dittmar (2010) find that firms are in the public market for about 13 years before going private through leveraged buyouts (LBOs). Our result suggests that firms delist much earlier than deciding to go private (LBOs). This indicates the differences in the choice between delisting voluntary and deciding to go private through LBOs.

Table 4, provides the characteristics of delisted companies over the public life. The last column of this table reports the t-statistics and Wilcoxon-Mann-Whitney test for the differences in means and medians between the test sample and the control sample, respectively. Consistent with the access to capital markets hypothesis, the results show that the delisted companies have higher leverage, indicating that they were less likely to raise capital and hence they opt out of trading. They also have lower growth opportunities, as measured by market-to-book ratio as well as lower capital expenditure. These findings imply that either the test firms did not need to new capital as they do not have any growth opportunities, or they were not able to invest because they could not raise equity capital.

Consistent with the agency conflict, the results show that delisted companies have higher free cash flow and profitability as measured by return on assets, suggesting that firms may delist to overcome their agency conflicts. However, these results are only significant in medians. The result for insider ownership is not significant.

In order to test the asymmetric information problem, we use intangibility and size. The proportion of intangible assets over total assets measures the degree of asymmetric information between insiders and outsiders (Marosi and Massoud, 2007). Our results show that the test sample has higher intangible assets than the control sample indicating a higher probability of asymmetric information for delisted companies. This result is inconsistent with Marosi and Massoud (2007), who examine US delisted companies. The results for size measured by natural logarithm of market capitalisation show that delisted companies are significantly smaller than the remained public companies. This indicates that delisted companies are smaller companies with greater probability of asymmetric information and thus are more likely to delist.

The results also show that delisted firms have lower liquidity and financial visibility as measured by trade volume and stock turnover. Finally, this table shows that the delisted companies are more volatile when we consider the stock volatility.

We then attempt to show firms' characteristics of test and control samples at the same point in time, which is the year after the IPO. This criterion is in line with Bharath and Dittmare (2010), who use one year following the IPO in order to have a comprehensive data. The results are reported in Table 5, Panel A. However, taken one year as a starting point is subject to a problem as some firms possibly delist during the first year of the IPO. Therefore, we compare the characteristics of both samples at the exact time of the IPO and the results are reported in Panel B of Table 5. For this purpose, the data is collected by hand from prospectuses and we could only collect the accounting data such as leverage, market-to-book, insider ownership, return on assets, and size.

Table 5, Panel A, shows that the test sample firms have significantly higher leverage, lower capital expenditure and growth opportunities, greater insider ownership, and more excess free cash flow. Some of these results are portrayed in Figure 4. Interestingly, the first panel (A) of Figure 4 shows for delisted firms, leverage carried on increasing in the post-IPO period. In contrast for the control firms, leverage stayed relatively stable. This suggests that delisted companies did not raise equity after their IPOs, and thus they use more debt in an increase in leverage, while the public remained companies would benefit from raising capital following IPOs and hence they have lower leverage. However, this may be also due to differences in growth opportunities and profitability. In order to assess these factors, we analyse also changes in market-to-book and profitably (ROA). The second panel (B) of Figure 4 shows that growth opportunities as measured by the market-to-book ratio declines for both test and control firms, but this ratio are lower for the delisted firms than for the remained public firms. Taken in conjunction with the results from Tables 4 and 5, these findings suggest that the delisted companies need less capital to invest and therefore they are more likely to opt out of trading. Panel C of Figure 4 shows that control firms have considerably lower excess free cash flow compared to the test firms. The last panel of Figure 4 describes the size of both the test and the control samples. It shows that remained public companies are larger than delisted companies.

In Panel B of Table 5, consistent with Panel A, we provide strong support for the impact of leverage, as market-to-book as a proxy for growth opportunities, on the decision to delist. This Panel shows that the delisted companies are highly levered companies with less

growth opportunities in contrast to remained public companies. We predict that low growth companies need less capital to finance and thus they are more likely to delist.

Furthermore, we examine how firms' characteristics change over the IPO life cycle in Table 6. Following Bharath and Dittmare (2010), we present the data for the year following the IPO and the year prior to the delisting time. This table shows that firms have higher leverage at the time of the delisting suggesting that they have lower probability of raising capital and thus decide to delist. The results also report that firm have lower growth opportunities at the time of the delisting. It indicates that they may have less opportunity to invest and thus need less capital resulting in going out of trading. These results support the hypothesis related to the market access that firms with lower market access are more likely to delist. However, capital expenditure is not significant between the time of the IPO and the time of the delisting.

Table 6 also presents the results for the agency hypothesis indicating that the higher the conflict between managers and shareholders, the more likely the firms are to be delisted. We find that firms have greater insider ownership at the time of delisting. It shows that firms with more concentrated ownership are more likely to have the agency conflict between managers and shareholders. We also use the proportion of free cash flow over total assets and return on assets, as two alternative proxies for the free cash flow problem. We do not find that the free cash flow problem has a significant impact of the delisting decision. These results are not consistent with Lehn and Poulsen (1989), who study the going private companies argue that firms benefit from going private to reduce the probability of the agency conflict.

With respect to the asymmetric information, our results show that firms are smaller and with higher intangible assets when they decide to delist. Finally, our results are not consistent with the liquidity hypothesis, but they show that firms have higher stock volatility when they delist.

4.2 Empirical Analysis

4.2.1 Logit Results

We use the data at the exact time of the IPO and estimate the logit regression in order to investigate whether the inherent characteristics of the firm at the time of the IPO could predict the ultimate delisting decision. The results are reported in Table 7, Panel A. We

download all prospectuses in order to collect those data. However, we could only find the data related to leverage, return on assets, market capitalisation, insider ownership, and under-pricing. The dependent variable is a dummy set to one if a firm is delisted and zero otherwise. Panel A reports the results based on the hypotheses in four models, as models (1), (2), and (3) presents the results based on the access to market, agency conflicts, and asymmetric information hypotheses. The last model (4) includes the proxies for liquidity and financial visibility as well as other explanatory variables in the last three models.

We then take the delisting year as the event and re-estimate the logit regression for one year before the delisting year. We attempt to investigate whether firms' characteristics over the public life cycle are different between the delisted companies and the surviving companies. If so, would those characteristics predict the delisting decision? Panel B presents the results of the logit regression at the year prior to the delisting. Yet again, we report the results based on four main hypotheses as explained in Panel A. However, in each model, we try to use alternative proxies to have a robustness check.

Both panels also reports two goodness-of-fit tests: Hosmer and Lemeshow (1989) and Andrews (1988). The idea underlying these tests is 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.

Interestingly, the results only support the market access hypothesis in Panel A., since leverage and market-to-book as a proxy for growth opportunities, are the only significant coefficients in all four models. Therefore, our results provide strong support for the importance of the market access hypothesis. This is consistent with Marosi and Massoud (2007) and Leuz et al. (2008), who find that delisted companies in the US have significantly higher leverage. However, the recent literature for going private firms report mixed evidence for the impact of leverage. Mehran and Peristiani (2009) suggest a positive and significant relationship between going private decision in contrast to Bharath and Dittmar (2010). In addition, the results are not consistent with Witmer (2005), who does not support the impact of leverage and growth opportunities on the voluntary cross-delisting decision. Alternatively, he suggests that size and stock turnover are the key determinants of cross-delisting as smaller firms with low stock turnover are more likely to delist. However, in contrast to their results, We show that firms with higher leverage and lower growth opportunities are more likely to delist. Perhaps the determinants of the voluntary delisting decision are different from the determinants of voluntary cross-delisting decision.

The results in model (2) do not provide any support for the agency conflicts as insider ownership and return on assets, as proxies for the agency conflict are not statistically significant. Models (3) and (4) test the asymmetric information and liquidity hypotheses, respectively. The results show that at the time of the IPO, these hypotheses cannot forecast the determinants of the delisting decision.

We also attempt to control for a foreign company listed on AIM by a dummy variable set to one if a firm is foreign company and zero otherwise. The results in Panel A of Table 7 do not report any significant effects of the overseas companies on the delisting decision. We also control for high-tech industries, venture capitalists, and underwater prestigious, which do not appear to have a significant impact on the delisting decision. Finally, the two goodness-of-fit tests (H-L and Andrews statistics) reported in Panel A, support that the observed values are very close to the expected value and thus this model is efficient. Accordingly, the results of Panel A show that only leverage and firms' growth opportunities could predict whether a company opts to go out of the market. [11]

In Panel B, we measure our variables one year prior to the delisting decision to assess whether fundamental factors can predict this decision.The results also support the market access hypothesis, as firms with lower growth opportunities and greater leverage are more likely to delist (model 1.1). In model (1.2) of Panel B, we use the proportion of capital expenditure as an alternative proxy for growth opportunities. Consistent with the market-to-book ratio, we find that firms with greater capital expenditure need further capital and thus they are less likely to delist. However, the two goodness-of-fit tests show that model 1.2 is not efficient and hence we exclude the proportion of capital expenditure in other models.

Moreover, we provide mixed evidence for the agency conflict. Models 2.1 and 2.2 show that free cash flow and return on assets as proxies for free cash flow problem are not significant. While the results present that closely held firms are more likely to delist. The results for ownership structure are complementary to those of Amihud et al. (1990), who find that firms controlled by major shareholders are reluctant to use equity. Therefore, as we expected, more closely held firms are less likely to issue equity and thus are have higher probability of delisting.

Model (3) controls for the asymmetric information and the results are not significant. Models (4.1) and (4.2) do control for all hypotheses including the impact of the liquidity and the financial visibility on the delisting decision in the year before the delisting. The results

[11]In order to overcome the restriction data, we use logit model at the year following the IPO, when the data available to collect and the results are reported in Appendix A.

show that the last year CAAR is negative and significant, suggesting that delisted companies with higher cumulative abnormal returns are less likely to go out of trading.

Our sample includes all delisted companies and those companies that transferred to the Main market. In order to check whether the determinants of delisting are different across these two sets of companies, we use the multinomial logit regression. The results are reported in Panel (C). In this model, we use surviving companiesas a reference group. The model then controls for delisted companies that go private versus the reference group (surviving-matched companies) as well as the transferred companies (upgraded to the Main market) versus the surviving-matched companies. The results for delisted companies that go private are in line with results from the logit model in Panel A. In contrast, the results for transferred companies show that only return on assets and underpricing are highly significant. Increases in return on assets (ROA) result in an increase in the probability of upgrading to the Main market. These findings are inconsistent with the agency conflict but in line with the argument of Arcot et al. (2007) that AIM companies are encouraged to join to the Main market when they demonstrate their profitability.[12] Moreover, we find that underpricing has a negative but insignificant effect on the delisting decision, whereas its effect is highly significant on the upgrading decision to the Main market. In order to have a robustness check, we re-estimate the regression by adding the explanatory variables and the results are consistent across all four models. Therefore, we report the marginal effect of variables only for Model (4), which includes all explanatory variables. The results show that among significant variables, a unit increase in leverage will increase the probability of delisting by 1.40, which is higher than the marginal effect of growth opportunities (0.96), but leverage and growth opportunities do not determine the upgrading decision.

Panel D shows the results of multinomial logit model one year before delisting. Given the survive-matched companies as the reference category, the findings show that the determinants of delisting are relatively different across the other two categories (delisted companies and upgraded to the Main market companies). Increases in leverage and decreases in growth opportunities result in an increases in the probability of delisting. However, leverage and growth opportunities measured by both the market-to-book ratio and the ratio of capital expenditures have not significant effects on moving to the Main market. We find that larger firms with more profitability are more likely to move to the Main market than survive

[12]Arcot, S., Black, J. and Owen, G., (2007), From local to global: the rise of AIM as a stock market for growing companies, Report commissioned by London Stock Exchange from The London School of Economics and Political Science.

in AIM, suggesting that they might be able to meet the Main listing requirements. Moreover, the results show that those companies that generate positive abnormal returns are more likely to upgrade to the Main market than survive in AIM. While, companies with negative abnormal returns are more likely to delist than survive in AIM. The results show that companies with higher liquidity and lower risk measured by stock volatility and beta are more likely to transfer to the Main market than stay in AIM. In contrast with the results for upgraded companies, increases in issuing seasoned equity offerings and operating in high-tech industries decrease the probability of delisting. These results are confirmed, as the reported Deviance statistics support the goodness-fit of all models.

4.2.2. Hazard Regression Results

In this section, we use the Cox proportional hazard model to investigate the factors that contribute to the delisting decision. Panel A in Table 8 presents the results of the hazard model for all companies, including both delisted companies and those companies that transferred to the Main market after controlling for the surviving-matched firms. We match the surviving firms with the test sample based on the IPO date and the size at the time of the IPO in order to compare the companies with the same characteristics. These companies are publicly listed at the same time with the same size. The results are presented based on the hypotheses in four main models. We repeat each specification in each subsequent model to check the robustness of the results. Panel B show the results for delisted companies compared to the matched surviving companies. Panel C reports the results for the upgraded companies compared to their matched surviving companies. The hazard ratios of model (4.2) are also reported in all panels.

Panel A of Table 8 shows that firms have a higher hazard rate of delisting if they have greater leverage and lower growth opportunities measured by the market-to-book ratio. These results are in line with the market access prediction (model 1.1). For robustness check, in Panel A, we replace MB by the proportion of capital expenditures over total sales as an additional proxy for growth opportunities (model 1.2). Consistent with the market hypotheses, we find that firms with greater capital expenditures are less likely to delist. Regarding the agency hypothesis, we use the proportion of free cash flow over total assets, which is not statistically significant (model 2.1). Similarly, the coefficient on return on assets as an alternative proxy for the free cash flow problem is not significant (model 2.2). This is in contrast with the prediction of the agency conflict as firms with larger free cash flow are

more likely to delist. The regression results present a positive and significant relationship between insider ownership and the probability of delisting, thus supporting the agency conflict hypothesis, suggesting that the delisting decision is smoother for firms that are more closely held. Firms also have a greater hazard rate of delisting if they are smaller with higher intangible assets, supporting the asymmetric information hypothesis. These results are robust across all models.

Model (4.1) includes stock volatility and stock turnover following by Mehran and Peristiani (2009). However, we provide mixed evidence for the liquidity and financial visibility predictions. The results show that the impact of stock turnover on the delisting decision is not significant. In model (4.2), we use the log of trade volume as an additional proxy for liquidity and similar to the stock turnover evidence, the result is not significant. Moreover, in contrast with our hypotheses, the relationship between stock volatility and the probability of the delisting decision is statistically negative. Mehran and Peristiani (2009) also find the negative coefficient of stock volatility. They suggest that firms with higher probability of failure are less likely to go private supporting the financial distress notion.

We control for seasoned equity offerings and high-tech industries in all specifications and the results are robust. The effect of the firms' ability to conduct a seasoned equity offering is statistically significant indicating that the hazard rates of delisting decrease as firms have a greater market access to issue equity. In addition, firms that operate in high-tech industries are less likely to delist. The hazard ratio of model (4.2) is reported in Panel A. The results are robust across all models in Panel A, therefore we report the hazard ratio only for model (4.2). For continuous explanatory variables, the hazard ratio measures the marginal effect of a unit increase in the independent variable. For discrete explanatory variables, the hazard ratio indicates the marginal effect when the event occurs. A hazard ratio greater than one means that the reference category (here 1) has a shorter time to event and otherwise. If the hazard ratio in equal to one, it indicates that there is no difference between the two groups of firms. As Panel A shows, leverage has the highest marginal effect on the delisting decision of about 1.49, indicating that the hazard rate of the delisting increases about 1.49 times for a unit increase in leverage.

Panel B and Panel C show the results for voluntary delisted companies that go private and companies that transferred to the Main market, respectively. The results of Panel B are consistent with those of reported in Panel A indicating that voluntary delisted companies have higher leverage and lower growth opportunities measured by both the market-to-book ratio and the proportion of capital expenditures over total sales. The coefficient on insider

ownership is positive and significant, further supporting the agency conflict as more closely held firms are more likely to opt out of the market. While the results of Panel C show that the coefficient on insider ownership is negative and significant indicating that more closely held firms are less likely to transfer to the Main market. Consistent with the asymmetric information hypothesis, the results of Panel B show that smaller companies with lower tangible assets are more likely to delist voluntarily, suggesting that companies with higher asymmetric information problems have greater hazard rates of delisting. The results of the upgrading decision in Panel C show that tangibility has not a significant effect on the decision to join the Main market but size has a positive and significant effect on such a decision, indicating that firms with greater market capitalisations are more likely to join the Main market. In contrast with the results of delisted companies in Panel B, the impact of leverage is not significant on the upgrading decision to the Main market. The coefficient on the market-to-book ratio is negative and significant, suggesting that high growth companies are more likely to stay in AIM than upgrade to the Main market. The results also show that firms are more likely to upgrade to the Main market if they have higher liquidity measured by the logarithm of trade volume. We control for seasoned equity offerings and the results show that conducting seasoned equity offerings has a negative and significant effect on the probability of voluntary delisting, while it has an insignificant effect on the probability of upgrading to the Main market. Finally, operating in high-tech industries has a negative and significant impact on both the voluntary delisting and upgrading decision to the Main market.

4.2.3 Analysis of the Ex Post Market Access

In conjunction with the results from Panel B of Table 7, we provide strong support for the market access hypothesis, indicating that leverage has a positive and significant effect on the voluntary delisting decision to go private. Therefore, we attempt to investigate further consequences of leverage and debt-equity financing over the IPO life cycle of the voluntary delisted companies. We find that leverage is significantly greater for delisted companies than for remained public companies. The results suggest that delisted companies would not able to issue equity and thus they are more likely to delist. To investigate this expectation, we follow Pegano et al.'s (1998) methodology of how leverage of the voluntary delisted and the remained public companies evolve over the IPO life cycle (Equation 9). We use this alternative specification in order to compare the ex post performance of the voluntary delisted companies relative to those companies that remained public.

$$y_{it}=\alpha+\sum_{j=0}^{4}\beta_j IPO_{t-j}+\beta_5 IPO_{t-n}+u_i+d_t+e_{it} \quad (9)$$

Where u_i, and$d_t$are a firm specific and calendar year specific effect, respectively. IPO_{t-j} are dummy variables equal to one if year *t-j* was the IPO year, and IPO_{t-n} is a dummy variable set to one if the IPO took place more than 5 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 9 shows that the remained public companies deleverage after the IPO. This finding is 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. Table 9 shows that for remained public companies, there is significant equity issuance over three years after the IPO, but debt issuance is not significant for those companies. Our results for remained public companies are consistent with those of Pagano et al.(1998), who find that equity issuance increases significantly over three years after the IPO. However, Table 9 shows that these results are not consistent with the voluntary delisted companies as leverage increases in the second year after the IPO, suggesting that delisted companies may not raise equity capital over their IPO life cycle This argument is supported in Table 9 which shows that for delisted companies, debt financing increases following the first year after the IPO, while there is no considerable change in the equity financing except the second and the fourth year after the IPO, which shows that the equity financing declines significantly for those companies that delist voluntarily.

4.2.3. Market Reaction

In this section, we attempt to investigate the market reaction to the delisting decision. We collect stock prices from the DataStream for the period from January 1994 to December 2010. We then use the investegate.co.uk website, which offers a large archive for announcements to find delisting announcements. In addition, we use the Factiva database and hand-collect delisting announcements for the firms that are not provided by investegate.co.uk. We analyse three different windows, [0, 1], [0, 2], and [0,5]. The event day (0) is the delisting announcements and the numbers in brackets show the staring and closing date of each window. We attempt to find the instantaneous market reaction to the delisting announcements by computing the first window, [0, 1].

There is the possibility for voluntary delisted firms to transfer to other listing markets. If so, we exclude 26 firms that delist in order to trade in the Main market. Panel A. of Table 10 reports the market reaction for all delisted companies while Panel B shows the result for

the voluntary delisted firms excluding those firms that transferred to the Main market. Panel C shows the market reaction for the delisted companies which switch to the Main market.

Panel A of Table 10 shows that the cumulative abnormal return is -7% for the [0, 1] and [0, 2] windows and -8% for the [0, 5] window. The results are very similar to the US study of Leuz et al.(2008), who report -7.5% and -9% market reaction for the [0, 1] and [0, 2] windows, respectively. Similarly, Marosi and Massoud (2007) find about -12% market reaction for the [0, 1] and [0, 5] windows presenting a larger market reaction. In addition, Liu (2004) finds that foreign companies that delist from the US stock exchange markets because of involuntary reasons experience abnormal return of about -4.5%. His result is different from Sanger and Peter (1990), who report market reaction of about -8.5% for domestic delisted companies in the US. The results also support the differences between the companies who delist voluntarily and those which go private trough leveraged buyouts (LBO, MBO, IBO). The studies based on going private transactions find positive accumulative returns around various event dates. Renneboog et al.(2007) report 11% for the [-5, 5] window in the UK consistent with Leuz et al.(2008), who find 14% for both the [0, 1] and [0, 2] windows in the US.

Interestingly, when we study the delisted firms that transferred to the Main market, we find different results. Panel C. shows cumulative abnormal returns are 0%, 1%, and 1% for the [0, 1], [0, 2], and [0, 5] windows, respectively, on the announcement of delisting in order to switch to the Main market. The significant positive returns indicate that market distinguishes between the voluntary delisting decision and the delisting decision associated with transferring to the Main market. It suggests that switching to the Main market delivers good news to the market. Our findings are consistent with Jenkinson and Ramadorai (2008), who find that the announcement of a switch from AIM to the Main market generates a significant positive return of about 5%. However, the sample size of this study is considerably smaller than their sample size and perhaps it makes the magnitude of accumulated average returns of our sample to be different from their sample. Jenkinson and Ramadorai (2008) also find that companies that transferred to the Main market experience a significant increase in performance, suggesting that switching to the Main market is associated with good news and thus the market responds positively.

The results of Table 10 do not control for firm characteristics while our focus is to investigate the leverage effects of the delisting decision, we distinguish between the delisted firms that experience an increased leverage in the year prior to the delisting decision and those with a decrease in leverage. The results are reported in Table 11, where Panel A shows CAARs for the delisted companies with an increased leverage in the prior year of the delisting. Panel B presents the results for those companies with a decreased leverage in the year before the delisting.

Table 11 shows that companies with an increased leverage experience greater negative abnormal returns in all three windows than those with a decreased leverage. The results suggest that those companies with greater leverage are more likely to have financial risk and thus inflate the market reaction.

5 Conclusions

This chapter presents evidence of the determinants of the delisting decision in AIM, particularly the effects of debt-equity financing. Recently, the US literature distinguishes between the going private decision, which happens mainly through leverage buyout and the voluntary delisting decision (Leuz et al., 2008; and Marosi and Massoud, 2007). To the best of our knowledge, there have been no previous studies investigating the determinants and the consequences of the voluntary delisting decision in the UK, especially in AIM. In particular, we attempt to 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. Going public in order to raise further capital would affect firms' capital structure and thus we expect a significant impact of leverage on the delisting decision. Probably, firms that would fail to raise further equity capital are more likely to delist.

To investigate the choice of being a public company or deciding to delist, we match the delisted companies with the remained public companies based on two criteria, the date of the IPO and the firm's size at the time of the IPO. We find that the delisted companies are substantially different from the public remained companies. The delisted companies are those with lower growth companies, greater leverage and capital expenditures.

To forecast the determinants of the delisting decision, we use the logit estimation at the exact time of the IPO. The results of the logit regression provide strong support for the market access hypothesis; delisting companies have higher leverage and lower growth opportunities compared to those that remained public. We then use the Cox proportional

hazard model, which examines how changes in firms' characteristics over the public life could result in delisting from the market. Similarly, consistent with the market access hypothesis, we find that firms with higher leverage and lower growth opportunities are more likely to delist. We also find support for the importance of the asymmetric information and liquidity hypotheses, but the results are not consistent with the agency conflict hypothesis. The results show that companies with higher asymmetric information measured by the proportion of intangible assets are more likely to delist. However, we do not provide any evidence consistent with the agency hypothesis measuring by the excess cash flow. The agency conflict predicts that those companies with higher excess cash flows are more likely to delist but our results do not support such notions. Overall, we find strong support for the impact of leverage on the delisting decision. The Cox proportional hazard model shows that leverage has the highest marginal effect on such a decision.

In addition, when we investigate the ex-post performance of IPOs, we find that the inability to issue equity is a major motivation for the delisting decision. The results suggest that leverage has increased for the delisted firms in contrast to the publicly remained companies. This is followed by increasing the debt financing for the delisted companies.

We further investigate the market reaction of delisting announcements. We use the market model to compute abnormal returns around the announcement of delisting. We find that abnormal returns are negative for different windows. However, there is the possibility that the effect of delisting announcements due to transfer to the Main market would affect the market reaction. To account for this issue, we split our sample into two groups, the delisted companies excluding those that switched to the Main market and the delisted companies that transferred to the Main market. Interestingly, when we exclude those companies that switched to the Main market, we find that abnormal returns are negative. However, this is not the case for the switched companies. The market reaction is positive when companies announce their intention of transferring to the Main market. As far as we know, Jenkinson and Rmadorai (2008) is the only study, which investigates the market reaction of switching from AIM to the Main market. They also report similar results as firms that transferred to the Main market experience positive abnormal returns. The results suggest that the market would distinguish between the delisted companies and those companies that delist in order to switch to the Main market. Transferring to the Main market may be considered as good news and thus the market reacts positively.

In order to control for the leverage, we re-estimate the market reaction for two groups, the delisted companies that experience an increased leverage in the year prior to the delisting

decision and the delisted companies that experience a decreased leverage in the year prior to the delisting decision. The results suggest that companies with an increased leverage experience substantial negative abnormal returns compared to those with a decreased leverage.

The contribution of our study is to shed light on the voluntary delisted companies in AIM as this issue has not been investigated. Recently, the delisting event attracts the attention of the literature and so far two studies examine the delisting decision in the US (Marosi and Massoud, 2007; and Leuz et al., 2008). However, the US delisting transaction is significantly different from the UK and thus we contribute to previous studies by considering the costs and the benefits of listing to explain why firms decide to delist voluntarily. Particularly, we am interested on the impact of leverage on such a decision in AIM.

However, our study may suffer from some limitations. Since AIM is a less regulated market, collecting data is relatively restricted. We do not have information related to the post-delisting period as we need those data in order to investigate the impact of the delisting decision on shareholders. Therefore, the extent to which other data will strengthen or alter our results is challenging for future research. In addition, we find that the stock price of the voluntary delisted companies decreases significantly on the announcement date and hence we expect an abnormal insider trading before the delisting. This stage is also subject to future research, particularly to analyse the trading activity of insiders and block holders, to assess whether these investors pre-empt or react to the announcement of the delisting decision.

References

Andrews, D. W. K., 1998, Inference in nonlinear econometric models with structural change, *The Review of Economic Studies*, 55, 615-639.

Aslan, H. and P. Kumar, 2009, Lemons and cherries? Growth opportunities and market temptations in going public and private, Forthcoming in the Journal of Financial and Quantitative Analysis.
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1439755

Bancel, F. and U. Mittoo, 2008, Why European firms go public? Working Paper, University of Manitoba
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1034164

Bharath, S. T. and A. K. Dittmar, 2006, To be or not to be (public). Using going private transactions to examine why firms go public, Working paper,
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=951710

Bharath, S. T. and A. K. Dittmar. 2010, Why do firms use private equity to opt out of public markets?, *The Review Of Financial Studies* 23, 1772-1818.

Brau, C. J., 2010, Why do firms go public? Forthcoming in the Oxford Handbook of Entrepreneurial Finance
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1649008

Brau, J. and S. Fawcett, 2006, Initial public offerings: an analysis of theory and practice, *Journal of Finance* 61, 399-436

Derrien, F., and A. Kecskes, 2007, The initial public offering of listed firms, *Journal of Finance* 62, 447-479.

Espenlaub, S., A. Khurshed, and A. Mohamed, 2011, IPO survival in a reputational market, Working paper.

Fama, F. and K. French, 2004, New lists: Fundamentals and survival rates, *Journal of Financial Economics* 73, 229-269.

Fischer, C., 2000. Why do companies go public? Empirical evidence from Germany's Neuer Markt. Working Paper,
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=229529

Gerakos, J., M. Lang, and M. Maffett, 2011, Listing choices and self-regulation: The experience of the AIM, Working paper, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1739137

Hensler, D., R. Rutherford, and T. Springer, 1997, The survival of initial public offerings in the aftermarket, *Journal of Financial Research* 20, 93-110.

Hosmer, D. W. and S. Lemeshow, 1989, "*Applied Logistic Regression"*, New York: John Wiley & Sons.

Jenkinson, T. and T. Ramadorai, 2008, Does one size fit all? The consequences of switching markets with different regulatory standards, Working paper, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=971699

Jensen, M. C. and W. H. Meckling, 1976, Theory of the firm: managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3, 305-360.

Jain, B. and O. Kini, 1999, The life cycle of initial public offerings, *Journal of Business Finance and Accounting* 26, 1281-1307.

Jain, B. and O. Kini, 2000, Does the presence of venture capitalists improve the survival profile of IPO firms?, *Journal of Business Finance & Accounting* 27, 1139-1176.

Kaplan, S. N., 1991, The staying power of leveraged buyouts. *Journal of Financial Economics* 29, 287–314.

Kim, W. and M. Weisbach, 2005, Do firms go public to raise capital? Working paper, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=610988

Lehn, K. and A. Poulsen, 1989, Free cash flow and stockholders gains in going private transactions, *The Journal of Finance* 44, 771-787.

Leuz, C., A, Triantis, and T.Y. Wang, 2008, Why do firms go dark? Causes and economic consequences of voluntary SEC deregistration. *Journal of Accounting and Economics* 45, 181-28.

Liu, S., 2004, The impact of voluntary foreign delistings: An empirical analysis, Working Paper,
URL:http://papers.ssrn.com/sol3/papers.cfm?abstract_id=680641

Macey, J., M., O'Hara, and D. Pompilio, (2008), Down and Out in the Stock Market: The Law and Economics of the Delisting Process, Journal of Law and Economics 51, 683-713.

Marosi, A. and N. Massoud, 2007, Why do firms go dark? Journal of Financial and Quantitative Analysis 42, 421-442.

Maupin, R., C. Bidwell, and A. Ortegren. 1984, An empirical investigation of the characteristics of publicly held corporations that change to private ownership via management buy outs. *Journal of Business Finance and Accounting* 11:435–50.

Mehran, H. and S. Peristiani, 2010 Financial visibility and the decision to go private, *The Review of Financial Studies* 23, 520-547.

Opler, T. and S. Titman, 1993, The Determinants of Leveraged Buyout Activity: Cash flow vs. Financial Distress Costs, *The Journal of Finance* 48, 1985-1999.

Pagano, M., F. Panetta, and L. Zingales, 1998, Why do companies go public? An empirical analysis, *The Journal of Finance* 53, 27-64.

Rajan, R. and L. Zingales, 1995, What do we know about capital structure: Some evidence from international data, *Journal of Finance* 50, 1421-1460.

Rennboog, L., T. Simons, and M. Wright, 2007, Why do public firms go private in the UK? The impact of private equity investors, incentive realignment and undervaluation, *Journal of Corporate Finance* 13, 591-628.

Ritter, R. J. 1987, The Costs of Going Public, *Journal of Financial Economics* 19, 269-81.

Sanger, G. C., and J. D. Peterson, 1990, An empirical analysis of common stock delistings, The Journal of Financial and Quantitative Analysis 25, 261-272.

Witmer, J., 2005, Why do firms cross-(de)list? An examination of the determinants and effects of cross-delisting, Working paper,
URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=885503

Table 1: Time Series Distribution of Delisted Companies

Year	Delisted companies	IPO Year of Delisted companies
1995		4
1996		19
1997		21
1998	1	7
1999	13	15
2000	18	22
2001	9	8
2002	8	9
2003	14	9
2004	13	29
2005	13	28
2006	25	10
2007	16	3
2008	16	
2009	38	
Total	184	184

The second column of this table presents the number of firms in our sample that delist in each year. The third column shows the time series distribution of those firms based on their IPO year.

Table 2: Proxies for the Determinants of the Delisting Decision and Expected Sign Observed from the Hypotheses

Description	Variables	Hypothesis	Sign
Leverage	Debt/Debt+Equity	Access to capital/ Raising capital	+
Growth opportunities	Market-to-Book ratio	Access to capital/ Raising capital	-
Capital expenditure	Capex/Total Sales	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	Common shares by directors/N. Outstanding shares	Agency Conflict	+
ROA	EBIT/Total assets	Agency (Free cash flow problem)	+
Size	LnMK	Asymmetric information	-
Intangibility	Intg Assets/Total Assets	Asymmetric information	+
Volume	Trade volume	Liquidity	-
Stock Turnover	Shares volume/N.S	Liquidity	-
Stock Turnover	Shares volume/N.S	Financial visibility	-
Stock volatility	STD stock price	Financial visibility	+

This table present the determinants of the delisting decision based on our hypotheses. Leverage is measured as total debt divided by total assets. Growth opportunities are MB, market-to-book ratio. Capital expenditure ratio computed as Capex/Sales is the proportion of capital expenditures over total sales.Free Cash Flow is the proportion of free cash flow over total assets. Insider Ownership is the ratio of holdings of common shares by all directors and officers as a group to total outstanding shares. ROA is measured as earnings before interest and tax over total assets. Size is natural logarithm of market capitalisation. Intangibility is the ratio of intangible assets over total assets. Volume is daily shares traded over the past 12 months. Sock Turnover is a ratio of daily turnover the past 12-month period divided by number of ordinary shares. Stock Volatility is yearly standard deviation of a firm's stock return.

Table 3: Number of Years that Delisted Firms Were Publicly Traded

	No. of Delisted Companies	%	Cumulative Distribution
IPO	3	1.63	3
+1	18	9.78	21
+2	31	16.85	52
+3	34	18.48	86
+4	45	24.46	131
+5	20	10.87	151
6-12	33	17.93	184
Total	184	100.00	

This table presents number of years the firms stayed public before delisting. The second column reports the number of delisted companies. Taken the available data, it shows that in total 184 companies delisted voluntarily between 1995 and 2009. The third column reports the proportion of delisted companies after the IPO. The last column shows the cumulative distribution of delisted companies in the post-IPO period.

Table 4: The Characteristics of Delisted Firms and Control Firms over Their Public Life

	Delisted Firms	Control Firms	t-statistics (Wilcoxon-Mann-Whitney)
Market Access			
Leverage	0.17	0.13	2.18**
	(0.09)	(0.04)	(5.61)***
Capex/Sales	0.43	0.50	2.26**
	(0.04)	(0.03)	(3.35)***
MB	2.38	4.15	-3.10***
	(1.53)	(1.91)	(3.29)***
Agency Conflicts			
Free Cash Flow	0.00	-0.35	1.05
	(0.06)	(0.00)	(4.66)***
ROA	-0.18	-0.52	0.87
	(0.01)	(-0.02)	(1.84)*
Insider Ownership	43.51	44.48	-0.89
	(43.47)	(44.20)	(0.66)
Asymmetric Information			
Intangibility	0.30	0.23	2.75***
	(0.14)	(0.13)	(0.89)
LnMK	2.63	2.96	-5.20***
	(2.58)	(2.85)	(4.51)***
Liquidity and Financial Visibility			
Stock Turnover	0.49	0.56	-0.78
	(0.22)	(0.23)	(1.26)
Log. Trade Volume	4.58	5.79	-2.85***
	(3.08)	(3.89)	(3.25)***
Stock Volatility	0.04	0.03	2.44**
	(0.04)	(0.03)	(2.01)**

This table presents means (medians) of firms' characteristics for the delisted firms in column two and the control firms in column three over the 1995-2009 period. Delisted firms are those that decide to delist between 1995 and 2009. The control firms are those firms that remained public for over the sample period. t-statistics for the differences in means and Wilcoxon-Mann-Whitney test of the differences in medians are reported in the last column. Leverage is measured as total debt divided by total assets. Capex/Sales is the proportion of capital expenditures over total sales. MB is the market-to-book ratio. Free Cash Flow is the proportion of free cash flow over total assets. ROA is measured as earnings before interest and tax over total assets. Insider Ownership is the ratio of holdings of common shares by all directors and officers as a group to total outstanding shares. Intangibility is the ratio of intangible assets over total assets. LnMK is the natural logarithm of market capitalisation as a proxy for size. Stock Turnover is a ratio of daily turnover the past 12-month period divided by number of ordinary shares. Log. Trade Volume is the log of daily shares traded over past 12 months. Stock Volatility is yearly standard deviation of a firm's stock return over last 12 month. ***, **,* indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.

Table 5: The Characteristics of Delisted Firms and Control Firms

Panel A	Delisted Firms t=IPO Year	Control Firms t=IPO Year	t-statistics (Wilcoxon-Mann-Whitney)
Market Access			
Leverage	0.14	0.10	2.97***
	(0.08)	(0.02)	(2.96)***
Capex/Sales	0.37	0.92	-2.25**
	(0.05)	(0.06)	0.04
MB	2.37	4.81	-2.63***
	(1.72)	(2.45)	(3.29)***
Agency Conflicts			
Free Cash Flow	-0.03	-0.08	1.39
	(0.02)	(-0.03)	(1.73)*
ROA	-0.12	-0.19	1.04
	(0.00)	(-0.04)	(0.67)
Insider Ownership	0.45	0.42	1.14
	(0.45)	(0.45)	(0.82)
Asymmetric Information			
Intangibility	0.32	0.20	1.76*
	(0.11)	(0.00)	(2.22)**
LnMK	2.10	2.59	-2.27**
	(2.77)	(2.91)	(1.96)*
Liquidity and Financial Visibility			
Stock Turnover	0.43	0.62	-0.81
	(0.22)	(0.30)	(0.48)
Log. Trade Volume	4.00	4.81	-3.59***
	(3.52)	(4.04)	(3.20)***
Stock Volatility	0.03	0.01	-1.99**
	(0.03)	(0.02)	(1.87)*

(Table 5 continued)

Panel B	Delisted Firms t=IPO time	Control Firms t=IPO time	t-statistics (Wilcoxon-Mann-Whitney)
Market Access			
Leverage	0.90	0.63	2.81***
	(0.61)	(0.24)	(4.74)***
MB	3.62	5.49	-2.01**
	(2.11)	(3.04)	(3.23)***
Agency Conflicts			
Insider Ownership	0.39	0.37	0.82
	(0.39)	(0.34)	(0.84)
ROA	-0.22	-1.38	0.94
	(0.00)	(-0.04)	(1.57)
Asymmetric Information			
LnMK	2.89	2.80	0.85
	(2.81)	(2.76)	(0.97)
Financial Visibility			
Under-pricing	0.09	0.11	-1.35
	(0.08)	(0.07)	(0.04)

Panel A of this table presents means (medians) firms characteristics for the delisted firms in column two and the control firms in column three at the same point in time (the first year following the IPO). Panel B shows means (medians) of firms' characteristics for the delisted firms in column two and the control firms in column three at the exact time of the IPO. Delisted firms are those that decide to delist between 1995 and 2009. The control firms are those firms that remained public for over the sample period. t-statistics for the differences in means and Wilcoxon-Mann-Whitney test of the differences in medians are reported in the last column. Leverage is measured as total debt divided by total assets. Capex/Sales is the proportion of capital expenditures over total sales. MB is the market-to-book ratio. Free Cash Flow is the proportion of free cash flow over total assets. ROA is measured as earnings before interest and tax over total assets. Insider Ownership is the ratio of holdings of common shares by all directors and officers as a group to total outstanding shares. Intangibility is the ratio of intangible assets over total assets. LnMK is the natural logarithm of market capitalisation as a proxy for size. Stock Turnover is a ratio of daily turnover the past 12-month period divided by number of ordinary shares. Log. Trade Volume is the log of daily shares traded over past 12 months. Stock Volatility is yearly standard deviation of a firm's stock return. Under-pricing is price 1st day minus price offer over price offer. ***, **,* indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.

Table 6: Delisted Firms' Characteristics at the IPO and Delisting Year

	Delisted Firms t=IPO Year	Delisted Firms t=Delisted Year	t-statistics (Wilcoxon-Mann-Whitney)
Market Access			
Leverage	0.14	0.21	-3.22***
	(0.08)	(0.14)	(2.03)**
Capex/Sales	0.37	0.38	0.14
	(0.05)	(0.04)	(0.12)
MB	2.37	2.08	2.87***
	(1.72)	(0.96)	(2.02)**
Agency Conflicts			
Free Cash Flow	-0.03	0.02	-0.56
	(0.02)	(0.04)	(0.40)
ROA	-0.12	-0.42	1.37
	(0.00)	(0.02)	(0.62)
Insider Ownership	0.45	0.36	3.84***
	(0.45)	(0.39)	(3.67)***
Asymmetric Information			
Intangibility	0.32	0.33	-0.19
	(0.11)	(0.13)	(3.10)***
LnMK	2.10	1.88	4.69***
	(2.77)	(1.15)	(3.63)***
Liquidity and Financial Visibility			
Stock Turnover	0.43	0.47	-0.65
	(0.22)	(0.23)	(0.40)
Log. Trade Volume	3.44	3.55	-0.88
	(3.92)	(3.95)	(0.74)
Stock Volatility	0.03	0.04	-3.92***
	(0.03)	(0.03)	1.56

This table presents means (medians) firms' characteristics for the delisted firms at the time of IPO and the time of delisting in column two and three respectively. Delisted firms are those that decide to delist between 1995 and 2009. The control firms are those firms that remained public for over the sample period. t-statistics for the differences in means and Wilcoxon-Mann-Whitney test of the differences in medians are reported in the last column. Leverage is measured as total debt divided by total assets. Capex/Sales is the proportion of capital expenditures over total sales. MB is the market-to-book ratio. Free Cash Flow is the proportion of free cash flow over total assets. ROA is measured as earnings before interest and tax over total assets. Insider Ownership is the ratio of holdings of common shares by all directors and officers as a group to total outstanding shares. Intangibility is the ratio of intangible assets over total assets. LnMK is the natural logarithm of market capitalisation as a proxy for size. Stock Turnover is a ratio of daily turnover the past 12-month period divided by number of ordinary shares. Log. Trade Volume is the log of daily shares traded over past 12 months. Stock Volatility is yearly standard deviation of a firm's stock return over last 12 month. ***, **,* indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.

Table 7: Logit Analysis for the Determinants of the Delisting Decision

Panel A (t= the IPO date)	**Model (1)**	**Model (2)**	**Model (3)**	**Model (4)**
Marker Access				
Leverage	0.32***	0.33***	0.32***	0.31***
	(2.74)	(2.76)	(2.70)	(2.62)
MB	-0.03*	-0.03*	-0.04*	-0.04*
	(-1.74)	(-1.68)	(-1.73)	(-1.77)
Agency Conflicts				
Insider Ownership		0.44	0.50	0.52
		(0.99)	(1.10)	(1.15)
ROA		0.02	0.02	0.02
		(0.78)	(0.74)	(0.75)
Asymmetric Information				
LnMV			-0.10	-0.11
			(-0.95)	(-1.08)
Liquidity and Financial Visibility				
Under-pricing				-0.00
				(-0.77)
Other Control Considerations				
Dummy. Foreign IPOs	0.42	0.42	0.42	0.49
	(0.79)	(0.79)	(0.87)	(0.90)
Dummy. VC backing	0.26	0.29	0.30	0.32
	(0.96)	(1.06)	(1.08)	(1.17)
Dummy. High-tech industries	-0.15	-0.16	-0.17	-0.186
	(-0.59)	(-0.62)	(-0.66)	(-0.72)
Dummy. Prestigious underwriters	0.43	0.42	0.37	0.35
	(1.13)	(1.12)	(0.95)	(0.91)
C	-0.75	-0.72	-1.03	-1.06
	(-1.32)	(-1.27)	(-1.57)	(-1.62)
McFadden R-squared	2.60%	2.70%	2.89%	3.47%
H-L Statistic	7.62	6.69	6.76	10.38
	(0.464)	(0.378)	(0.562)	(0.245)
Andrews Statistic	11.09	13.651	14.50	14.36
	(0.350)	(0.189)	(0.151)	(0.166)

Table (7 continued)

Panel B (t=the year prior to the delisting)	Model (1.1)	Model (1.2)	Model (2.1)	Model (2.2)	Model (3)	Model (4.1)	Model (4.2)
Market Access							
Leverage	1.28***	1.53	1.33**	1.23*	1.30*	1.32*	1.34*
	(2.12)	(2.39)	(2.04)	(1.86)	(1.93)	(1.94)	(1.95)
MB	-0.01*		-0.01*	-0.01*	-0.02*	-0.02*	-0.02*
	(-1.75)		(-1.73)	(-1.80)	(-1.93)	(-1.89)	(-1.90)
Capex/Sales		-0.11**					
		(-1.98)					
Agency Conflicts							
Free Cash Flow			-0.39				
			(-1.30)				
ROA				0.56	-0.68	-0.66	-0.68
				(1.00)	(-1.09)	(-0.93)	(-0.95)
Insider Ownership			0.00*	0.00**	0.00**	0.00**	0.00**
			(1.76)	(1.95)	(2.01)	(2.21)	(2.06)
Asymmetric Information							
Intangibility					0.30	0.32	0.30
					(0.79)	(0.84)	(0.75)
LnMK					-0.15	-0.14	-0.17
					(-1.50)	(-1.32)	(-1.57)
Liquidity and Financial Visibility							
Stock Turnover						-0.11*	
						(-1.78)	
Log. Trade Volume							-0.10
							(-0.56)
$CAAR_{[-365,0]}$						-0.09***	-0.11**
						(-2.59)	(-2.51)
Stock Volatility						-2.52	-2.30
						(-0.54)	(-1.59)
Other Controls							
SEO Dummy	-0.48**	-0.38	-0.37	-0.38	-0.45	-0.44	-0.46
	(-2.04)	(-1.50)	(-1.45)	(-1.47)	(-1.71)	(-1.66)	(-1.69)
Dummy. High-tech industries	-0.33	-0.52*	-0.33	-0.32	-0.31	-0.28	-0.39
	(-1.18)	(-1.77)	(-1.09)	(-1.08)	(-1.02)	(-0.92)	(-1.25)
IPO Life	0.02	0.01	0.05	0.05	0.08	0.07	0.09
	(0.39)	(0.21)	(0.97)	(0.86)	(1.35)	(1.26)	(1.50)
C	0.01	0.09	-0.21	-0.29	-0.98*	-0.98	-0.58
	(0.04)	(0.28)	(-0.50)	(-0.70)	(-1.73)	(-1.63)	(-0.64)
H-L Statistic	4.98	10.54	10.83	5.93	10.11	10.72	10.49
	(0.76)	(0.23)	(0.21)	(0.66)	(0.26)	(0.22)	(0.23)
Andrews Statistic	10.54	10.83*	5.93	10.11	10.72	10.49	0.00
	(0.84)	(0.07)	(0.28)	(0.77)	(0.38)	(0.17)	(0.22)

Table (7 continued)

Panel C (t= the IPO date)	Delisted Companies					Transferred to the Main Market				
	Model (1)	Model (2)	Model (3)	Model (4)		Model (1)	Model (2)	Model (3)	Model (4)	
	Coeff	Coeff	Coeff	Coeff	Marginal effect	Coeff	Coeff	Coeff	Coeff	Marginal effect
Marker Access										
Leverage	0.35***	0.33***	0.34***	0.33***	1.40	0.20	0.21	0.18	0.13	1.14
	(0.004)	(0.005)	(0.005)	(0.007)		(0.344)	(0.352)	(0.773)	(0.586)	
MB	-0.03*	-0.04*	-0.04*	-0.04*	0.96	-0.01	-0.01	-0.03	-0.03	0.96
	(0.088)	(0.089)	(0.090)	(0.092)		(0.725)	(0.755)	(0.566)	(0.968)	
Agency Conflicts										
Insider Ownership		0.55	0.54	0.57	1.72		-0.25	0.22	0.20	1.21
		(0.237)	(0.243)	(0.222)			(0.773	(0.953)	(0.834)	
ROA		0.02	0.02	0.02	1.01		0.55*	0.46	0.47	1.59
		(0.438)	(0.439)	(0.437)			(0.070)	(0.137)	(0.142)	
Asymmetric Information										
LnMV			-0.15	-0.20	1.02			0.58	0.65	1.92
			(0.961)	(0.946)				(0.235)	(0.220)	
Liquidity and Financial Visibility										
Under-pricing				-0.00	0.99				-0.23**	0.09
				(0.446)					(0.048)	
Other Control Considerations										
Dummy. Foreign IPOs	0.42	0.42	0.42	0.46	1.59	0.26	0.43	0.46	0.58	1.78
	(0.467)	(0.429)	(0.432)	(0.409)		(0.856)	(0.902)	(0.852)	(0.609)	
Dummy. VC backing	0.30	0.29	0.33	0.41	1.51	-0.34	-0.26	0.27	0.41	0.82
	(0.270)	(0.168)	(0.168)	(0.147)		(0.554)	(0.665)	(0.238)	(0.751)	
Dummy. High-tech industries	-0.30	-0.31	-0.33	-0.33	0.71	0.62	0.60	-0.63	-0.33	1.77
	(0.264)	(0.249)	(0.255)	(0.228)		(0.203)	(0.183)	(0.285)	(0.254)	
Dummy. Prestigious underwriters	0.35	0.36	0.37	0.33	1.39	0.75	0.32	0.37	0.35	1.41

	(0.371)	(0.371)	(0.395)	(0.410)		(0.226)	(0.187)	(0.395)	(0.227)
C	-0.75	-0.91	-1.03	-0.96		-0.25***	-0.22**	-0.44***	-0.45***
	(0.212)	(0.124)	(0.156)	(0.156)		(0.023)	(0.052)	(0.002)	(0.002)
Deviance Statistics/ McFadden R-squared									
Model (1)					0.856/ (4.01%)				
Model (2)					0.887/ (4.05%)				
Model (3)					0.999/ (5.01%)				
Model (4)					0.999/ (5.01%)				

Table (7 continued)

	Delisted Companies (Category 1)							Transferred to the Main Market (Category 2)						
Panel D (t= 1 year bfore)	**Model (1.1)**	**Model (1.2)**	**Model (2.1)**	**Model (2.2)**	**Model (3)**	**Model (4.1)**	**Model (4.2)**	**Model (1.1)**	**Model (1.2)**	**Model (2.1)**	**Model (2.2)**	**Model (3)**	**Model (4.1)**	**Model (4.2)**
Market Access														
Leverage	1.52**	1.91**	1.53**	1.65**	1.58**	1.70**	1.70**	-0.40	-0.72	-0.83	-1.04	-1.89	-1.27	-1.27
	(0.016)	(0.025)	(0.032)	(0.018)	(0.028)	(0.023)	(0.022)	(0.777)	(0.638)	(0.621)	(0.540)	(0.350)	(0.598)	(0.587)
MB	-0.01*		-0.01**	-0.01**	-0.01**	-0.02**	-0.02*	-0.02		-0.03	-0.03	00.17	-0.15	-0.21)
	(0.055)		(0.042)	(0.047)	(0.045)	(0.047)	(0.067)	(0.684)		(0.757)	(0.751)	(0.159)	(0.361)	(0.258)
Capex/Sales		-0.14*							-0.02					
		(0.099)							(0.694)					
Agency Conflicts														
Free Cash Flow			0.72							2.44**				
			(0.310)							(0.017)				
ROA				-0.89	-0.81	-0.66	-0.65				0.89**	0.81**	0.75**	0.84**
				(0.989)	(0.240)	(0.750)	(0.750)				(0.015)	(0.024)	(0.035)	(0.039)
Insider Ownership			0.00*	0.00*	0.00*	0.00*	0.00*			-0.01	-0.01	-0.00	-0.02	-0.01
			(0.098)	(0.079)	(0.075)	(0.080)	(0.085)			(0.173)	(0.240)	(0.974)	(0.258)	(0.624)
Asymmetric Information														
Intangibility					0.37	0.35	0.38					0.14	0.42	0.27
					(0.335)	(0.370)	(0.346)					(0.850)	(0.668)	(0.782)
LnMK					-0.03	-0.02	-0.18					1.21***	1.21***	1.63***
					(0.798)	(0.858)	(0.882)					(0.000)	(0.002)	(0.000)
Liquidity and Financial Visibility														
Stock Turnover						-0.04							0.49**	
						(0.772)							(0.039)	
Log. Trade Volume							-0.00							0.71
							(0.973)							(0.212)
$CAAR_{[-365,0]}$						-0.34**	-0.34**						2.00***	2.23***

						(0.046)	(0.048)						(0.002)	(0.001)
Stock Volatility						2.45	2.70						-4.33*	-3.49**
						(0.606)	(0.583)						(0.061)	(0.049)
Beta						0.23	0.297						-2.12*	-2.12*
						(0.962)	(0.625)						(0.069)	(0.080)
Other Controls														
SEO Dummy	-0.69***	-0.63**	-0.63**	-0.63**	-0.65**	-0.58**	-0.58**	0.76	0.89*	1.07*	1.15*	1.02	0.06	0.02
	(0.005)	(0.019)	(0.021)	(0.021)	(0.021)	(0.045)	(0.045)	(0.153)	(0.100)	(0.082)	(0.068)	(0.138)	(0.939)	(0.978)
DummyHigh-tech	-0.54*	-0.75**	-0.67*	-0.66*	-0.66*	-0.71*	-0.70*	0.46	0.17	0.667	0.70	1.08	1.11	0.40
	(0.077)	(0.023)	(0.057)	(0.057)	(0.060)	(0.051)	(0.052)	(0.336)	(0.719)	(0.191)	(0.166)	(0.064)	(0.129)	(0.597)
IPO Life	0.048	0.04	0.07	0.08	0.09	0.11	0.11	0.165	0.18	0.12	0.12	0.10	0.07	0.17
	(0.367)	(0.430)	(0.170)	(0.128)	(0.120)	(0.165)	(0.168)	(0.198)	(0.157)	(0.354)	(0.352)	(0.530)	(0.670)	(.279)
C	-0.16	0.11	-0.63	-0.54	-0.70	-0.81	-0.86	-1.98*	1.75**	-1.86*	-2.12**	-1.08**	-0.06**	0.06**
	(0.574)	(0.715)	(0.154)	(0.255)	(0.236)	(0.210)	(0.392)	(0.053)	(0.040)	(0.057)	(0.028)	(0.020)	(0.030)	(0.032)
Deviance Statistics/ McFadden R-squared														
Model (1.1)							0.976/ 5.08%							
Model (1.2)							0.999/ 7.10%							
Model (2.1)							0.998/ 10.50%							
Model (2.2)							1.000/ 8.20%							
Model (3)							1.000/ 15.50%							
Model (4.1)							1.000/ 22.01%							
Model (4.2)							1.000/ 21.70%							

This table presents the results for the logit regression for the factors affecting the delisting decision. Panel A shows the results using the explanatory variables at the exact time of the IPO. Panel B presents the results using the explanatory variables at the year prior to the delisting. In both Panels A and B, the independent variable is a dummy equal to one for delisted companies and zero for size and IPO date matched control firms that remained listed. Panel C and D shows the results for multinomial logit regression, in which the dependent variable is categorises as 0, 1, and 2at the time of the IPO and one year before delisting, respectively. Surviving companies, voluntary delisted companies that go private, and those companies that transferred to the Main market are categorises as 0, 1, and 2, respectively. The reference category is 0 representing the surviving companies. The dependent variables are: Leverage, which is measured as total debt divided by total assets. MB is the market-to-book ratio. Capex/Sales is the proportion of capital expenditures over total sales.Free Cash Flow is the proportion of free cash flow over total assets. ROA is measured as earnings before interest and tax over total assets. Insider Ownership is the ratio of holdings of common shares by all directors and officers as a group to total outstanding shares. Intangibility is the ratio of intangible assets over total assets. LnMK is the natural logarithm of market capitalisation. Stock Turnover is a ratio of daily turnover of the past 12-month

period divided by number of ordinary shares. Stock Volatility is yearly standard deviation of a firm's stock return over last 12 month. Log. Trade Volume is the log of daily shares traded over past 12 months. SEO Dummy is a dummy variable equal to one if the company raised capital and zero otherwise. Under-pricing is 1st price day minus price offer over price offer.$CAAR_{[-365,0]}$ is cumulated average abnormal returns for one year before the event (event is one year before delisting). Beta is collected from Bloomberg. Dummy.Foreign IPOs is a dummy variable equals to one if the AIM firm is foreign. Dummy VC backing is a dummy variable set to one for a venture capitalist. Dummy high-tech industry is a dummy variable set to one if a firm is in computer manufacturing, electronic equipment, computer and data processing services, and optical, medical, and scientific equipment. Dummy prestigious underwriters are a dummy set to one if a global underwriter defined in Derrien and Kesckes (2007) underwrites the IPO. IPO life controls for the firm's public life. Finally, Panel A and B of this table reports two goodness-of-fit tests, H-L Statistic and Andrews Statistics. They show the discrepancy between observed values and the values expected in the logit model. If these differences are large, we reject the model as providing an insufficient fit to the data. Panel C and D report Deviance Statistics shows the goodness-of-fit of the model. Its significance shows that the model does not fit the data. ***, **,* indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively. In Panel A and B, t-statistics are reported in parentheses while in Panel C and D, p-values are reported in parentheses.

Table 8: Cox Proportional Hazard Model for the Delisting Decision

Panel A	**Test sample against matched surviving companies**							**Hazard Ratio**
	Model (1.1)	**Model (1.2)**	**Model (2.1)**	**Model (2.2)**	**Model (3)**	**Model (4.1)**	**Model (4.2)**	**Model (4.2)**
Market Access								
Leverage	0.37***	0.43***	0.38***	0.29***	0.36***	0.39***	0.40***	1.488
	(0.000)	(0.000)	(0.002)	(0.009)	(0.005)	(0.002)	(0.003)	
MB	-0.03***		-0.03***	-0.03***	-0.03***	-0.03***	-0.03***	0.968
	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	
Capex/Sales		-0.03***						
		(0.003)						
Agency Conflicts								
Free Cash Flow			0.08		0.11	0.07	0.05	1.069
			(0.203)		(0.155)	(0.410)	(0.309)	
ROA				-0.31				
				(0.398)				
Insider Ownership			0.01***	0.01***	0.01***	0.01***	0.01***	1.013
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	
Asymmetric Information								
Intangibility					0.10**	0.10**	0.12***	1.106
					(0.013)	(0.011)	(0.000)	
LnMK					-0.06**	-0.08***	-0.07**	0.923
					(0.041)	(0.004)	(0.016)	
Liquidity and Financial Visibility								
Stock Turnover						-0.04		
						(0.856)		
Log. Trade Volume							-0.07	0.855
							(0.119)	
Stock Volatility						-0.29***	-0.34***	0.000

						(0.000)	(0.000)	
Beta						-0.40	-0.38	1.053
						(0.102)	(1.110)	
Other Control Considerations								
SEO Dummy	-0.64***	-0.66***	-0.60***	-0.65***	-0.60***	-0.61***	-0.62***	0.545
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	
Dummy. High-tech industries	-0.21***	-0.40***	-0.22***	-0.24***	-0.20**	-0.19**	-0.20**	0.830
	(0.005)	(0.000)	(0.008)	(0.004)	(0.020)	(0.028)	(0.023)	
Delisted Firms	184	184	184	184	184	184	184	
Control Firms	184	184	184	184	184	184	184	
N.Obs	1895	1899	2116	2094	2073	2059	1996	
Likelihood Ratio Test	1169.228***	10477.158***	1162.228***	1159.803***	1079.240***	1072.190***	9994.204***	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

(Table 8 continued)

Panel B	Delisted companies against matched surviving companies							Hazard Ratio
	Model (1.1)	Model (1.2)	Model (2.1)	Model (2.2)	Model (3)	Model (4.1)	Model (4.2)	Model (4.2)
Market Access								
Leverage	0.23**	0.40***	0.26**	0.22*	0.21***	0.27**	0.28**	1.320
	(0.050)	(0.000)	(0.042)	(0.057)	(0.015)	(0.042)	(0.043)	
MB	-0.03***		-0.03***	-0.03***	-0.02***	-0.03***	-0.02***	0.974
	(0.000)		(0.000)	(0.000)	(0.007)	(0.008)	(0.014)	
Capex/Sales		-0.01***						
		(0.025)						
Agency Conflicts								
Free Cash Flow			0.00		0.02	0.02	0.01	1.012
			(0.977)		(0.671)	(0.626)	(0.764)	
ROA				-0.09				
				(0.352)				
Insider Ownership			0.01***	0.01***	0.01***	0.01***	0.01***	1.010
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	
Asymmetric Information								
Intangibility					0.14***	0.14***	0.15***	1.161
					(0.000)	(0.000)	(0.000)	
LnMK					-0.18***	-0.19***	-0.19***	0.821
					(0.000)	(0.000)	(0.000)	
Liquidity and Financial Visibility								
Stock Turnover						-0.11		
						(0.248)		
Log. Trade Volume							-0.03	0.970
							(0.543)	
Stock Volatility						-0.96***	-0.64***	0.000

						(0.003)	(0.002)	
Beta						-0.42	-0.37	0.842
						(0.895)	(0.608)	
Other Control Considerations								
SEO Dummy	-0.88***	-0.89***	-0.84***	-0.85***	-0.81***	-0.76***	-0.77***	0.459
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	
Dummy. High-tech industries	-0.52***	-0.73***	-0.52***	-0.52***	-0.50***	-0.49***	-0.46***	0.627
	(0.000)	(0.000)	(0.000)	(0.004)	(0.000)	(0.000)	(0.000)	
Delisted Firms	158	158	158	158	158	158	158	
Control Firms	158	158	158	158	158	158	158	
N.Obs	1679	1472	1659	1659	1624	1655	1650	
Likelihood Ratio Test	8263.194***	7268.59***	7930.271***	7917.671***	7602.798***	7444.050***	6935.808***	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

(Table 8 continued)

Panel C	Transferred companies against matched surviving companies							Hazard Ratio
	Model (1.1)	Model (1.2)	Model (2.1)	Model (2.2)	Model (3)	Model (4.1)	Model (4.2)	Model (4.2)
Market Access								
Leverage	0.67	0.88	0.30	0.72	0.21	0.11	0.10	1.116
	(0.250)	(0.320)	(0.438)	(0.160)	(0.642)	(0.794)	(0.806)	
MB	-0.04***		-0.03	-0.02	-0.08***	-0.09***	-0.09***	0.916
	(0.000)		(0.120)	(0.124)	(0.002)	(0.002)	(0.002)	
Capex/Sales		-0.02						
		(0.138)						
Agency Conflicts								
Free Cash Flow			2.15***		1.46***	1.47***	1.47***	4.161
			(0.000)		(0.000)	(0.000)	(0.000)	
ROA				0.68***				
				(0.003)				
Insider Ownership			-0.01**	-0.00	-0.01**	-0.01**	-0.01**	1.004
			(0.039)	(0.167)	(0.020)	(0.015)	(0.021)	
Asymmetric Information								
Intangibility					-0.17	-0.14	-0.12	0.946
					(0.335)	(0.465)	(0.501)	
LnMK					0.56***	0.53***	0.53***	1.686
					(0.000)	(0.000)	(0.000)	
Liquidity and Financial Visibility								
Stock Turnover						0.01		
						(0.596)		
Log. Trade Volume							0.28***	0.754
							(0.000)	
Stock Volatility						-0.93*	-0.89*	0.001

						(0.063)	(0.075)	
Beta						-0.44**	-0.45**	1.660
						(0.047)	(0.032)	
Other Control Considerations								
SEO Dummy	-0.24	-0.27	-0.313	-0.11	-0.20	-0.26	-0.30	0.763
	(0.148)	(0.113)	(0.861)	(0.519)	(0.256)	(0.163)	(0.103)	
Dummy. High-tech industries	0.17***	0.07	0.14***	0.33**	0.25***	0.32***	0.26***	3.531
	(0.230)	(0.624)	(0.001)	(0.027)	(0.000)	(0.000)	(0.000)	
Delisted Firms	26	26	26	26	26	26	26	
Control Firms	26	26	26	26	26	26	26	
N.Obs	457	457	431	431	425	420	421	
Likelihood Ratio Test	2312.095***	2281.695***	2161.190***	2141.846***	1976.489***	1919.974***	1920.814***	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Panel A of this table presents the results based on the Cox proportional hazard model for the whole sample including delisted companies as well as those companies that transferred to the Main market. The dependent variable is a dummy one if a company is delisted or transferred to the Main market and zero otherwise. This model also controls for the public life of the IPO companies. The sample includes all firms that went public after 1995. Panel B shows the results for voluntary delisted companies that go private compared to the matched-surviving companies. Panel C reports the results for those companies that transferred to the Main market compared to the matched-surviving companies. Leverage is measured as total debt divided by total assets. MB is market-to-book ratio. Free Cash Flow is the proportion of free cash flow over total assets. Insider Ownership is the ratio of holdings of common shares by all directors and officers as a group to total outstanding shares. Intangibility is the ratio of intangible assets over total assets. LnMK is natural logarithm of market capitalisation. Stock Turnover is a ratio of daily turnover of the past 12-month period divided by number of ordinary shares. Stock Volatility is yearly standard deviation of a firm's stock return over last 12 month. Log. SEO Dummy is a dummy variable equal to one if the company raised capital and zero otherwise. Dummy high-tech industry is a dummy variable set to one if a firm is in computer manufacturing, electronic equipment, computer and data processing services, and optical, medical, and scientific equipment.The hazard ratios of Model (4.2), which includes all explanatory variables, are also reported in all Panels. For continuous explanatory variables, the hazard ratio measures the marginal effect of a unit increase in independent variable. For discrete explanatory variables, the hazard ratio indicates the marginal effect when the event occurs. The hazard ratio greater than one means that the reference category (here 1) have a shorter time to event and otherwise. If the hazard ratio in equal to one, it indicates that there is no difference between groups. ***, **,* indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively. Numbers in parentheses represent the p-values.

Table 9: Leverage and Debt-Equity Financing over the IPO Life Cycle

	Sample	Year 0	Year +1	Year +2	Year +3	Year +4	Year >4	F-test
Leverage	Whole sample	-0.018	-0.045	-0.027	-0.033	-0.029	-0.010	0.000***
		(-0.25)	(-0.62)	(-0.36)	(-0.43)	(-0.36)	(-0.10)	
	Delisted	0.027	0.028	0.035**	0.039***	0.049***	0.073***	0.000***
		(0.24)	(0.60)	(2.32)	(2.85)	(2.71)	(2.63)	
	Remained Public	-0.015*	-0.051**	-0.052**	-0.060	-0.056***	-0.042	0.000***
		(-1.89)	(-2.05)	(-1.98)	(-0.89)	(-2.66)	(-0.98)	
Debt Financing	Whole sample	0.047	0.056	0.059	0.079	-0.018	0.052	0.169
		(0.83)	(0.93)	(0.92)	(0.88)	(-0.47)	(0.95)	
	Delisted	0.067	0.086**	0.080*	0.150*	-0.175	0.074	0.000***
		(1.02)	(2.00)	(1.89)	(1.69)	(-0.55)	(0.746)	
	Remained Public	0.000	0.000	0.000	0.000	0.001	0.002	0.653
		(0.83)	(1.18)	(1.02)	(1.14)	(1.33)	(1.46)	
Equity Financing	Whole sample	-0.007	-0.017	-0.022	-0.024	-0.030	-0.058	0.000***
		(-0.60)	(-1.06)	(-1.02)	(-0.34)	(-0.30)	(-0.99)	
	Delisted	0.004	-0.007	-0.005**	-0.001	-0.010*	-0.009	0.000***
		(0.83)	(-1.41)	(-2.50)	(-0.25)	(-1.87)	(-1.50)	
	Remained Public	0.002***	0.008*	0.005**	0.004**	0.005	-0.003	0.000***
		(2.68)	(1.76)	(2.30)	(2.07)	(0.47)	(-0.22)	

This table presents the results of. $y_{it} = \alpha + \sum_{j=0}^{4} \beta_j \, IPO_{t-j} + \beta_5 \, IPO_{t-n} + u_i + d_t + e_{it}$ Here u_i, and d_t are a firm specific and calendar year specific effect. 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 4 years before. However, this table reports the coefficients on the IPO and the post IPO periods. Y refers to leverage, debt financing, and equity financing. Leverage is total debt divided by total assets. Debt financing is debt issued divided by total capital employed. Equity Financing is equity issued divided by total capital employed. 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 10: Market Reaction to the Delisting Announcement

Event Window	Observations	CAAR	Positive: Negative	P-value (Z-test)
Panel A: CAAR for the test companies				
[0,1]	184	-7%	82:90	(0.000)***
[0,2]	184	-7%	82:90	(0.000)***
[0,5]	184	-8%	84:89	(0.001)***
Panel B: CAAR for all delisted companies excluding those transferred companies to the Main market				
[0,1]	26	-8%	67:81	(0.000)***
[0,2]	26	-9%	66:82	(0.000)***
[0,5]	26	-9%	69:80	(0.000)***
Panel C: CAAR for all delisted companies that transferred to the Main market				
[0,1]	158	0%	15:9	(0.000)***
[0,2]	158	1%	16:8	(0.000)***
[0,5]	158	1%	15:9	(0.000)***

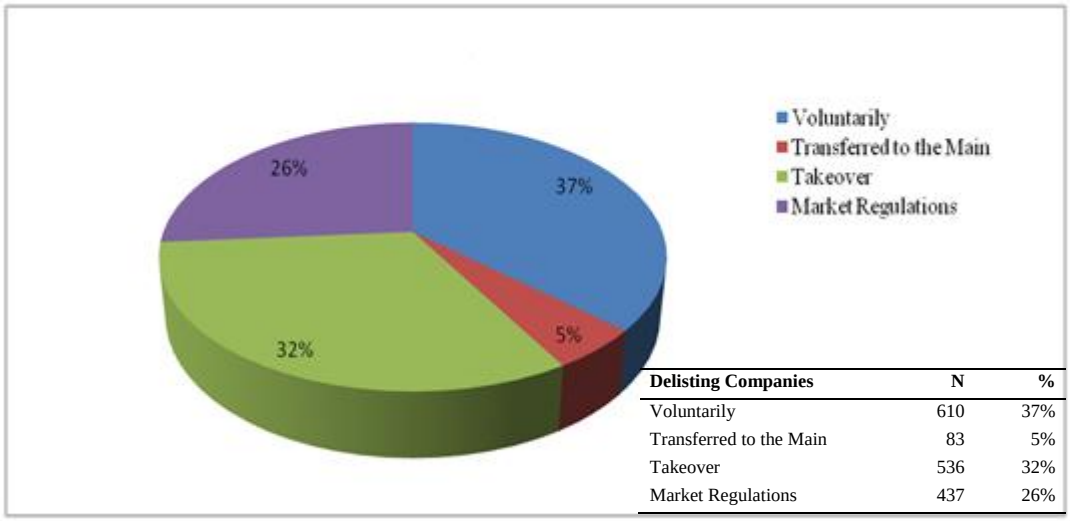
This table presents the results of an event study investigating the market reaction of delisting announcement. We use the market model: $R_{i,t}= \alpha_i+ \beta_i R_{M,t} + \varepsilon_{i,t}$, Where $R_{i,t}$ is the return on the common stock of the *i*th company in our sample at time *t*, $R_{M,t}$ is the value-weighted market index, which is FTSE all share at time *t*, and $\varepsilon_{i,t}$is the error term. Panel A reports the cumulated average abnormal returns (CAAR) for the all delisted companies. Panel B shows the results for those delisted companies excluding those firms, which switch to the Main market and Panel C presents the result for those companies that transfer to the Main market. ***, **,* indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.

Table 11: Market Reaction to Delisting Announcements Controlling for Leverage

Event Window	Observations	CAAR	P-value (Z-test)
Panel A: CAAR for delisted companies with an increased leverage			
[0,1]	40	-9.12%	(0.023)**
[0,2]	40	-8%	(0.014)**
[0,5]	40	-9.20%	(0.014)**
Panel B: CAAR for delisted companies with a decreased leverage			
[0,1]	80	-4%	(0.020)**
[0,2]	80	-6%	(0.033)**
[0,5]	80	-5%	(0.046)**

This table presents the results of an event study investigating the market reaction of delisting announcement. We use the market model: $R_{i,t}= \alpha_i+ \beta_i R_{M,t} + \varepsilon_{i,t}$, Where $R_{i,t}$ is the return on the common stock of the *i*th company in our sample at time *t*, $R_{M,t}$ is the value-weighted market index, which is FTSE all share at time *t*, and $\varepsilon_{i,t}$is the error term. Panel A reports the cumulated average abnormal returns (CAAR) for the delisted companies with increased leverage in the year prior to the delisting decision. Panel B shows the results for those delisted companies with decreased leverage in the year prior to the delisting decision. ***, **,* indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.

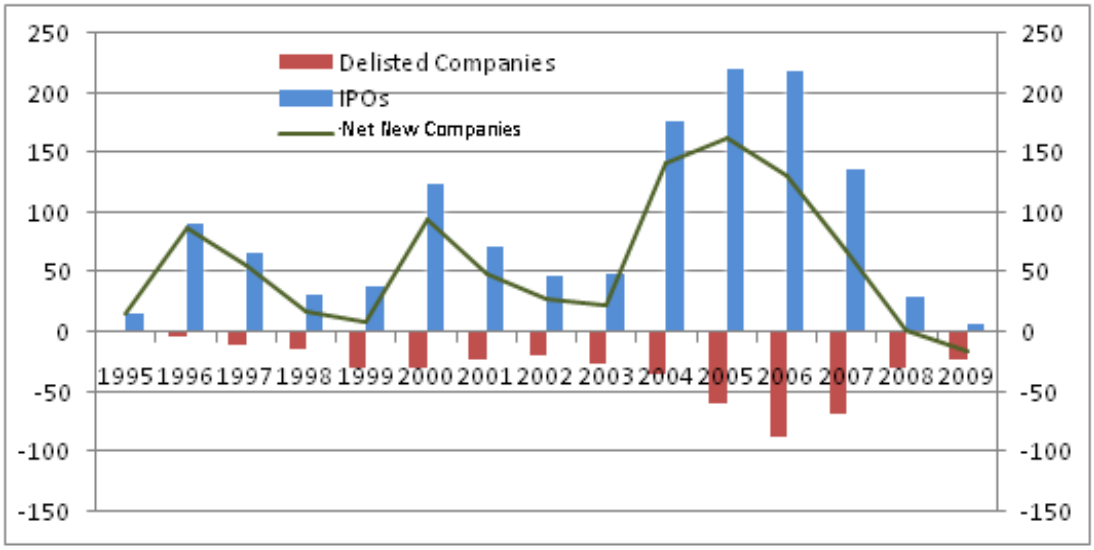
Figure 1: Delisting Reasons (AIM Evidence)



Delisting Companies	N	%
Voluntarily	610	37%
Transferred to the Main	83	5%
Takeover	536	32%
Market Regulations	437	26%

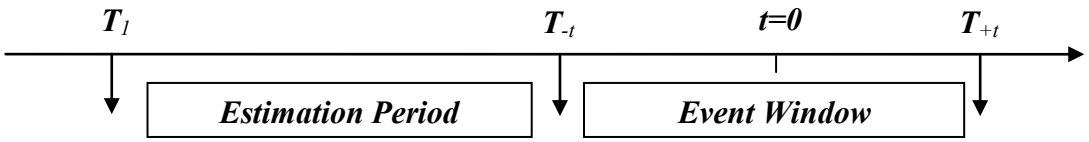
This figure shows the proportion of reasons for delisting on AIM.
Source: Own computation from the analysis of all hand-collect delisted firms from AIM statistics provided by the London Stock Exchange over the period 1998 to 2009.

Figure 2: Non-Financial IPOs and Non-Financial Delisted Companies



This graph shows the number of listed and delisted of IPO companies in AIM during the sample period (1995-2009). The blue bar shows the number of IPOs in each year. The red bar presents the number of delisted IPOs (Voluntarily, Transferred to Main, Takeovers, and Market regulations) in each year. The green line shows net new companies (number of IPOs-Number of delisted companies).

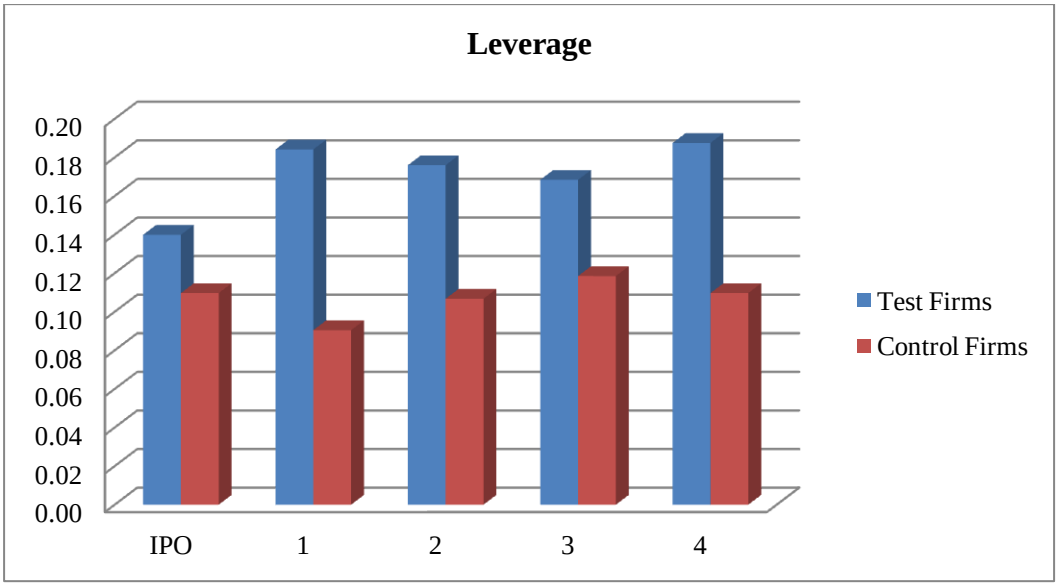
Figure 3: Event Study



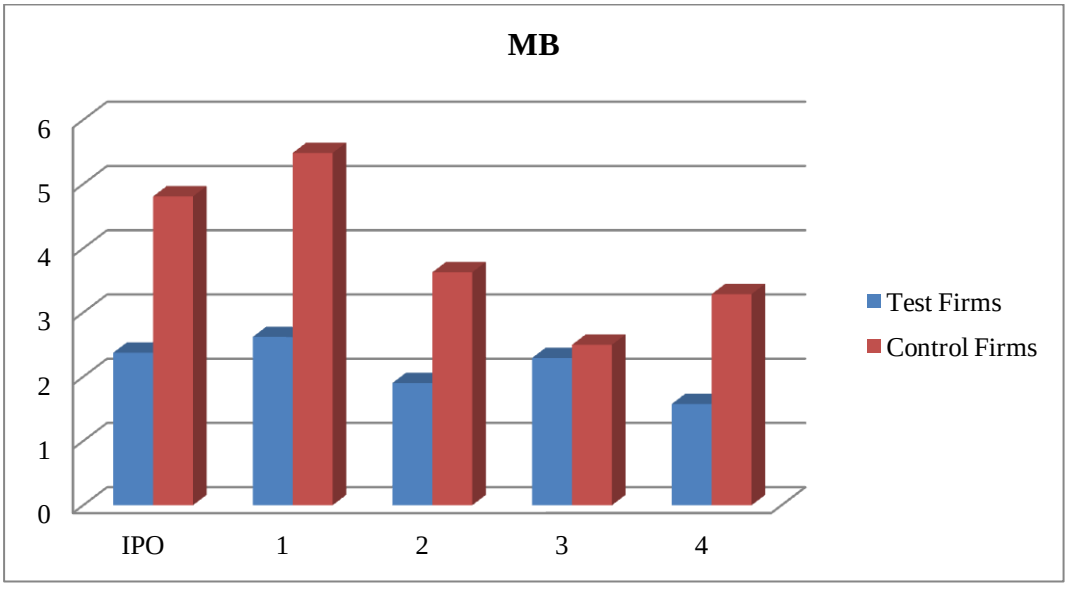
This figure illustrates the timeline of an event study. *t=0* is a specific event and $[T_{-t}, T_{+t}]$is the event window. $[T_1, T_{-t}]$shows the estimation period.

Figure 4: Key Firms' Characteristics over IPO Life Cycle

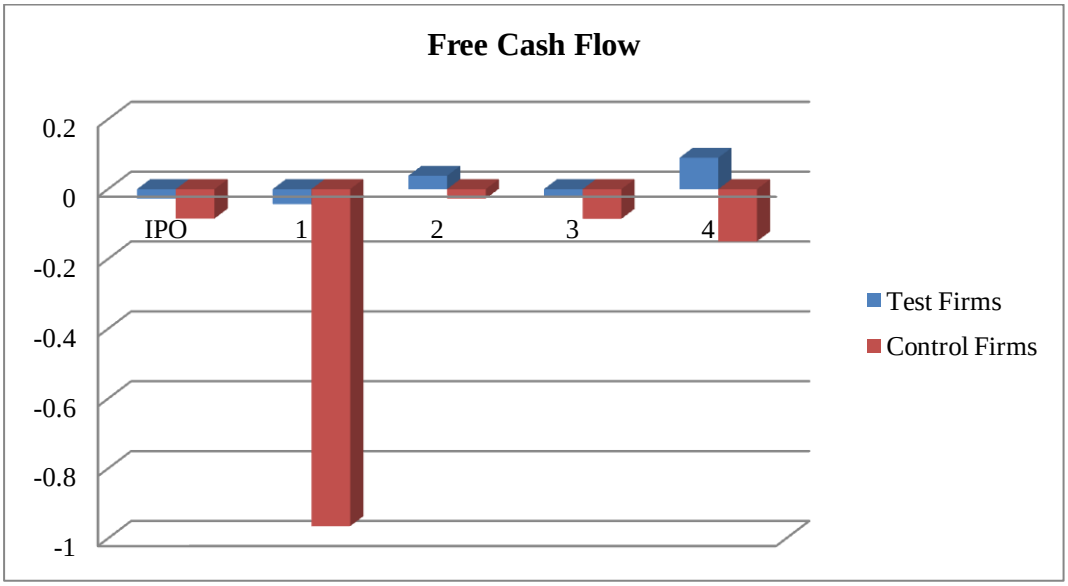
Panel (A)



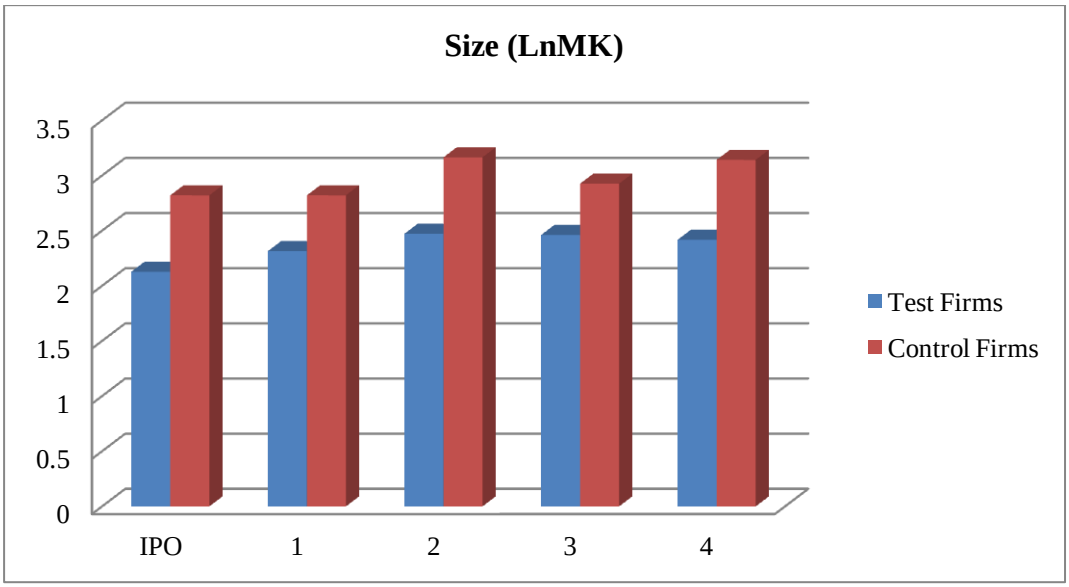
Panel (B)



Panel (C)



Panel (D)



Panel (A) shows Leverage, which is measured as total debt divided by total assets. Panel (B) shows Capex/Sales, which is the proportion of capital expenditures over total sales. Panel (C) illustrates MB, which is the market-to-book ratio. Panel (D) shows Cash Flow, which is the proportion of free cash flow over total assets. Size is measured as natural logarithm of market capitalisation. Test firms are those that decide to delist after 1995. The control firms are those firms that remained public for over the sample period.

Appendix A

Table A: Logit Analysis for the Determinants of the Delisting Decision

(t=the year following the IPO)	Model (1)	Model (2)	Model (3)	Model (4)
Market Access				
Leverage	2.03**	2.21**	2.42***	2.79***
	(2.47)	(2.41)	(2.62)	(2.83)
MB	-0.09**	-0.11**	-0.10**	-0.11**
	(-2.39)	(-2.30)	(-2.21)	(-2.26)
Capex/Sales	-0.12**	-0.13*	-0.12*	-0.11*
	(-1.99)	(-1.81)	(-1.79)	(-1.77)
Agency Conflicts				
Free Cash Flow		0.25	0.40	0.53
		(0.36)	(0.57)	(0.74)
ROA		-0.11	-0.27	-0.63
		(-0.18)	(-0.41)	(-0.90)
Insider Ownership		0.01	0.01	0.00
		(1.31)	(1.06)	(0.20)
Asymmetric Information				
Intangibility			0.76*	0.98*
			(1.91)	(1.87)
LnMK			-0.00	-0.00
			(-0.61)	(-0.57)
Liquidity and Financial Visibility				
Stock Turnover				-0.83**
				(-2.12)
Stock Volatility				-7.64
				(-0.82)
Log. Trade Volume				-0.00
				(-1.03)
Other Control Considerations				
SEO Dummy	-0.02	-0.05	-0.03	-0.09
	(-0.80)	(-1.17)	(-0.90)	(-0.31)
Dummy. Foreign IPOs	0.08	0.39	0.64	0.77
	(0.13)	(0.54)	(0.41)	(0.96)
Dummy. High-tech industries	-0.34	-0.10	-0.06	-0.02
	(-1.15)	(-0.31)	(-0.86)	(-0.05)
C	0.15	0.28	-0.05	-0.42
	(0.61)	(0.67)	(-0.91)	(-0.75)
McFadden R-squared	6.15%	6.74%	8.50%	11.70%
H-L Statistic	13.58*	5.57	4.20	5.25
	(0.09)	(0.70)	(0.84)	(0.73)
Andrews Statistic	19.45**	13.12	7.88	8.02
	(0.03)	(0.22)	(0.64)	(0.63)

This table presents the results for the logit regression for the factors affecting the delisting-decision at the year following the IPO. The independent variable is a dummy equal to one for delisted companies and zero for size and IPO date matched control firms that remained listed. The dependent variables are: Leverage, which is

measured by total debt divided by total assets. MB is the market-to-book ratio.Capex/Sales isthe proportion of capital expenditures over total sales.Free Cash Flow is the proportion of free cash flow over total assets. ROA is measured by earnings before interest and tax over total assets. Insider Ownership is the ratio of holdings of common shares by all directors and officers as a group to total outstanding shares. Intangibility is the ratio of intangible assets over total assets. LnMK is the natural logarithm of market capitalisations. Stock Turnover is a ratio of daily turnover of the past 12-month period divided by number of ordinary shares. Stock Volatility is yearly standard deviation of a firm's stock return over last 12 month. Log. Trade Volume is the log of daily shares traded over past 12 months. SEO Dummy is a dummy variable equal to one if the company raised capital and zero otherwise. Dummy.Foreign IPOs is a dummy variable equals to one if the AIM firm is foreign. Dummy VC backing is a dummy variable sets to one for a venture capitalist. Dummy high-tech industry is a dummy variable sets to one if a firm is in computer manufacturing, electronic equipment, computer and data processing services, and optical, medical, and scientific equipment. Finally, this table reports two goodness-of-fit tests, H-L Statistic and Andrews Statistics. They show the discrepancy between observed values and the values expected in the logit model. If these differences are large, I reject the model as providing an insufficient fit to the data.***, **,* indicate that the estimate is significant at the 1 %, 5% and 10% level, respectively.