How do Ownership and Control Affect the Decision to Go Public?

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Abstract

This research investigates why the majority of private companies eligible for public listings choose not to do so from the perspective of ownership and control. The choice between going public and staying private is regarded as the decision of the initial owner of a private company balancing the costs against the benefits of an IPO. Different exit alternatives such as M&A are considered to provide additional insights into the listing issue. Specifically, we study how the cost of losing control benefits, the benefits of cashing out, diversification, and liquidity gain determine a firm's decision on (1) IPO vs private; (2) M&A vs private; and (3) M&A vs IPO.

Using a comprehensive database FAME with the ownership data of vast private companies in the U.K., we find that a main reason that some private companies are reluctant to go public is the potential loss of pecuniary benefits of control. On the benefit side, major shareholders in large companies treasure the liquidity gains while block holders value the diversification benefit, willing to give up some control benefits. Venture capital or private equity shareholders use IPO as a channel to cash out.

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1. Introduction

Although listed companies typically are large in size and scale, many large companies choose to stay private. In the U.S., engineering giant Bechtel, agricultural behemoth Cargill, and food colossus McCain Foods are all private. We show in this study that over the period 1993-2005 in the U.K., only 434 out of more than 60,000 non-financial domestic private companies eligible to go public were actually listed on the London Stock Exchange (LSE). In other countries with less developed capital markets, public companies are the exception rather than the norm. Pagano, Panetta and Zingales (1998) report 76 non-financial Italian firms going public out of the 2,181 eligible private companies. Why there are so few eligible firms go public?[1]

In this paper, we attempt to shed light on this question by looking at the ex ante ownership and control considerations from firm owners' perspective. Essentially, firm owners are balancing the costs and benefits of keeping and transferring ownership and control upon listing. If the benefits of transferring outweigh the costs of keeping control, firms should go public. We focus on four aspects of costs and benefits of ownership transfer through listing. The major cost is the loss in the private benefits of control (Dyck and Zingales, 2004). Three types of benefits are cashing out by the firm owner upon ownership transfer (Mello and Parsons, 1998; Stoughton and Zechner, 1998), gaining liquidity to stocks through listing (Booth and Chua, 1996; Mello and Parsons, 1998), and diversifying the ownership risk (Pagano, 1993; Pettit and Singer, 1986; Chemmanur and Fulghieri, 1999).

Not much empirical is available because reliable information regarding private firms is generally difficult to obtain. Our research takes advantage of the requirement that all, except very small[2], public and private companies in the U.K. file their financial statements

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[1] There is a rich theoretical literature modeling a variety of motives for going public, see for example, Leland and Pyle (1977), Merton (1987), Welch (1989), Ritter (1991), Pagano (1993), Zingales (1995a), Mello and Parsons (1998), Pagano and Roell (1998), Chemmanur and Fulghieri (1999), Stoughton, Wong and Zechner (2001), Boot, Gopalan and Thakor (2003), and etc.

[2] The Companies Act of 1967 required all companies, private and public, to file their financial statements annually with the Registrar. The 1981 Companies Act modified this provision, allowing "small" and "medium-sized" companies to protect their financial affairs from public scrutiny by reporting only abridged financial statements. Under the Act, to be classified as "small" (or "medium") a company must fulfill two of the following criteria for two consecutive years: (i) the annual turnover must not exceed 2.8 (11.2) million pounds, (ii) the book value of

and additional information to the government. We use a comprehensive database FAME compiled from the filing records to investigate the true motives behind the private companies' choice between going public and staying private with focus on the ownership and control elements. The sample size is over 110,000 with accounting data and over 60,000 with ownership data, spanning 14 years. As the U.K. and the U.S. are typically categorized as part of the same Anglo-American corporate governance system (La Porta et al, 1997; 1998), the results of this study are well ready to generalize into the U.S. market, where the information on the whole of the private sector is currently not available.

The contributions of this research are threefold. First, it is a comprehensive empirical research that offers ex ante evidence on the ownership and control factors in the IPO decision. The ownership data in FAME provide a precious opportunity to examine the ownership and control issues related to the listing decision, which is not found in other empirical studies. Specifically, the data allow for the comparison between the ownership structures of the IPO companies and those of the peer private companies.

Second, when it comes to the decision regarding a public equity listing, the divergence of different types of shareholders regarding control becomes especially prominent. The results of this study uncover the control preferences of various types of shareholders of private companies, whose ownership structures are generally in the dark. In particular, we find significant difference between major family shareholders and institutional shareholders.

Third, this research considers different exit alternatives based on ownership consideration. Specifically, we contrast the IPO decision against the choice of being taken over by public and private firms to provide additional insights into the issue, especially on the private benefits of control.

Our results show a complex picture on the interactions of the four costs and benefits of ownership transfer related to the listing decision. For *private benefits of control*,

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total assets may not exceed 1.4 (5.6) million pounds, and (iii) the number of employees may not exceed 50 (250). Small companies are required to submit only an abbreviated balance sheet and no profit and loss account. Medium companies are required to submit an abbreviated profit and loss account, which need not disclose sales. However, in FAME, the vast majority of the profit and loss accounts do disclose sales and other major accounting information. The majority of companies also file ownership information.

Managerial share ownership is found to be inversely related to decisions of listing and being acquired, suggesting that entrenched managers do not want to give up their control benefits. Companies that are tightly controlled through dual-class share structure are less likely to go public. Firms with high percentage shareholding by major shareholders are also less likely to go public but prefer to be acquired, presumably the high acquisition premium outweighing the loss of control benefits.

Interestingly, major shareholders holding more shares in large companies are found to be *more* likely to bring their companies public. We argue that major shareholders in large companies treasure the *liquidity benefit* after going public and hence are willing to give up some control benefits. Companies with more block holders are more likely to go public or being acquired by another *publicly listed* company as more block holders demand to gain *diversification benefits* upon listing even though that would cost their control benefits. The reason why we do not find this factor conducive to acquisition by a *private* company is probably because it is more costly for a private company to acquire a company with "too many" block holders as the acquisition has to be paid completely by cash. We also find that venture-capital- and private-equity-backed companies are likely to go public as going public is a typical channel for venture capitals and private equities to *cash out*.

Our study relates to but is different from the few empirical papers on the IPO decision.[3] Pagano, Panetta and Zingales (1998) use a large sample of Italian private companies and find that firm size and the industry's market-to-book ratio affect the probability of a firm going public. However, the data availability prevents them from testing the hypotheses related to ownership and control that are among the most important factors in the IPO decision, since IPO is essentially a way that a private company's owners sell shares to the public. In addition, their study focuses on a relatively small market.

Bodnaruk, et al. (2008) look at Swedish firms and examine shareholders' portfolio diversification consideration of going public. They find that firms held by less diversified

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[3] There are some empirical working papers, too. See Boehmer and Ljungqvist (2004) on German firms, de Albornoz and Pope (2004) on UK firms, Mayur and Kumar (2006) on Indian firms, Vinas and Berenguer (2008) on Spanish firms, and Bancel and Mittoo (2008) on firms of 12 European countries, for instance.

controlling shareholders are more likely to go public, while the diversification of non-controlling shareholders has no effect. The authors conclude that diversification of controlling shareholders plays a prominent role in the IPO process.

Like us, Paleari, Pellizzoni, and Vismara (2008) study why only few companies go public in Continental Europe. By comparing the Italian and the UK companies, they find that companies going public on the LSE usually use the capital raised to rebalance their capital structure, while companies going public in Italy use the IPO as a means to temporarily lower their debt exposure and then access to further debt on an improved bargaining position with banks.

An interesting paper by Arugaslan, Cook, and Kieschnick (2010) focuses on firms with dual class stocks. Instead of finding managers of going-public firms invest in hard-to-monitor projects or gain more when selling control of the firm, the authors find that these managers appear to take their firms public to retain control of their firms while reducing their lack of diversification costs.

All these papers focus on a relatively small market or a specific sector, while our paper provides a comprehensive study on the ownership and control related factors in the IPO decision.

Our investigation proceeds as follows: Section 2 discusses related literature and develops the hypotheses; Section 3 examines the data and methodology; Section 4 discusses the empirical evidence; and the last section concludes.

2. Hypotheses and Testing Methodology

2.1 Testing Hypotheses for IPO Decision

As mentioned before, our main focus is on four kinds of costs and benefits of ownership and control transfer that affect the listing decision, i.e., the loss in private benefits of control, the cashing-out benefit, the liquidity gain of stocks upon listing, and the

diversification benefits of the owners. We go through each one below in details as how it will affect the listing decision. Testing hypotheses are developed accordingly.

2.1.1 Private Benefits of Control

There are two types of private benefits of control: non-pecuniary and pecuniary private benefits of control. Demsetz and Lehn (1985) suggest that non-pecuniary private benefits of control, or "amenity potential", are the benefits to the firm owners that do not come at the expense of profits. Jensen and Meckling (1976) describe an owner-manager's "utility generated by various non-pecuniary aspects of his entrepreneurial activities such as the physical appointments of the office, the attractiveness of the office staff, the level of employee discipline, the kind and amount of charitable contributions, personal relations with employees", etc.

On the other hand, the pecuniary type of private benefit of control comes at the expense of profits to the outside or minority investors. The agency theory argues that managers have an incentive to divert resources from outside shareholders and such agency cost increases as managers' stakes decrease and the ownership becomes more dispersed, as when the company goes for public listing. This cost could become so large that it becomes unattractive to go public. Alternatively, the stock market could serve as a monitoring device, by exposing the managerial decisions to the market's assessment in the managerial labor market. In addition, as modeled by Holmstrom and Tirole (1993), a well-informed stock price is of value in itself as an input into managerial performance-linked compensation, thus reducing agency costs. This study will empirically test the relationship between the agency costs and the probability of an IPO.

Another type of agency problem is the extraction of pecuniary benefits by the controlling shareholders from minority shareholders, as highlighted by Ehrhardt and Nowak (2003) and Johnson et al. (2000). After floating, the regulations for listed companies and the scrutiny of the public will make it harder for the controlling shareholders to expropriate minority shareholders. In addition, the initial owners have to surrender their private benefits

6

of control once outside investors acquire a major stake of their company, which is more likely for a public listed firm.

We use several proxies for the private benefits of control. Conceivably, the "amenity potential" or non-pecuniary private benefits of control is more common in family run companies (Burkart, Panunzi and Shleifer, 2003). We hence use the **family** dummy variable to capture this group of companies.

Second, a direct measure of the interest alignment between the management and the shareholders is the level of managerial ownership. We follow Morck, Shieifer and Vishny (1988) and define the segmented managerial ownership as follows to allow for differential effect of managerial ownership:

pct_mgr_l	= pct_mgr	if pct_mgr < L
	= L	if pct_mgr >= L
pct_mgr_m	= 0	if pct_mgr < L
	= pct_mgr - L	if L <= pct_mgr < H
	= H - L	if pct_mgr >= H
pct_mgr_h	= 0	if pct_mgr < H
	= pct_mgr - H	if pct_mgr >= H

When the managerial ownership is very small (**pct_mgr_l**), a small increase in stakes will not provide much entrenchment benefit. [4] The divergence-of-interest agency cost (especially after IPO) will decline as the managers gaining more ownership so that the probability of IPO is positively related to the managerial ownership at the low level. However, when the managers hold significantly large stakes and are nearly fully entrenched (captured by **pct_mgr_h**), the gain from additional control is very small. Furthermore, under such circumstance, the agency problem between the management and the shareholders disappears

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[4] Short and Keasey (1999) show that the entrenchment effect dominates the alignment effect in the range of 12%-40% of ownership in U.K. Following their study, we choose the ownership thresholds L and H to be 0.1 and 0.4 respectively. Different thresholds are used for robustness check, and the results are statistically similar.

so that the probability of IPO is negatively related to the managerial ownership at the high level.[5]

There are some general proxies of the private benefits of control such as the existence of multi-class shares. DeAngelo and DeAngelo (1985) and Grossman and Hart (1988) argue that it is easier for managers to extract private benefits of control if the companies have dual class stocks. Supportive evidence is documented in DeAngelo and DeAngelo (2000) and Cronqvist and Nisson (2003). However, Arugaslan, Cook, and Kieschnick (2010) find different results, as mentioned before. In any case, we construct a **multi_class** dummy variable to capture the possible effect.

Fourth, the level of private benefits of control is related to the constraints on the ability of controlling shareholders to expropriate wealth from minority shareholders. Following Holderness and Sheehan (2000), we use a **big4** indicator on those firms audited by a "Big Four" accounting firm as a proxy for such constraints.

Last, the probability of going public should be inversely related to the desire of the incumbent shareholders to maintain control. In a similar study, Helwege and Packer (2009) use the indicator of substantial shareholdings as a proxy for the desire of controlling shareholders to preserve control. Rather than using dummy variables, we use a more precise measure: the percentage of shares held by controlling shareholders which includes the majority ownership (**pct_major**) and block ownership (**pct_block**).

Based on the above discussion, we establish the following hypothesis:

H1a: The relation between the probability of IPO and managerial ownership is positive at the low level of managerial ownership and negative at the high level of managerial ownership.

H1b: Family controlled companies are more likely to go public.

H1c: Closely controlled companies and companies with multi-class shares are less likely to go public, while companies audited by Big Four accounting firms are more likely to go public.

2.1.2 Exit Motive

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[5] On the other hand, the agency problem between the management and minority shareholders becomes more severe as the management becomes the controlling shareholders and hence has more dimensions to extract private benefits at the costs of minority shareholders.

While the private benefits of control make the incumbent owner reluctant to go for IPO, other theories suggest that public listing is used as a channel to exit by the initial owner. For instance, Mello and Parsons (2000) suggest that an IPO provides a channel for insiders to cash out. This is especially true for venture-capital-backed or private-equity-backed (**VC**) firms, as pointed out by Black and Gilson (1998). Zingales (1995a) models the initial owner to maximize his total proceeds by selling the company in two stages, first to sell the cash flow rights to disperse shareholders and followed by selling the control rights through direct bargaining with a potential buyer. On the other hand, Brau, Francis and Kohers (2003) suggest that an IPO enables a firm to use its public shares as "currency" in either acquiring or being acquired in a stock deal.

If exit or control transferring is an important incentive for undergoing an IPO, then the higher percentage of majority or block ownership, the more incentives the initial owners have to sell their control in an IPO deal. This predicts opposite signs for the above two variables to the hypothesis of loss of private benefits of control. The empirical results would reveal the relative importance of the two hypotheses in the IPO decision.

H2a: Companies with larger majority or block ownership are more likely to go public.

H2b: Companies backed by venture capital or private equity are more likely to go public.

2.1.3 Liquidity Gains

Amihud and Mendelson (1988) model asset pricing with a liquidity premium so that stocks with higher liquidity are valued higher. In the IPO context, improved liquidity after listings offers better incentives for both the initial owners and the management with stock ownership as these stocks are tradable now.

As highlighted by Pagano, Panetta and Zingales (1998), many microstructure models document that the liquidity of a firm's shares increases with the trading volume which is, in turn, related to firm size. Therefore, being able to reap the benefit of improved liquidity more efficiently, large firms are more likely to go public. We modify the tests in Pagano, Panetta and Zingales (1998) by introducing an interactive term of firm size and majority ownership, **major*TA**. If the firm size is directly related to the benefit of liquidity, then we should see

9

that large firms whose stakes are closely held by the major shareholders are even more likely to go public.

H3: Large firms with large controlling shareholders (interaction term) are more likely to go public.

2.1.4 Diversification Benefits

A public firm can obtain the required capital by selling shares to a large number of investors. However, for a private firm, much of the external financing comes from one large investor (often a venture capitalist) or a small group of large investors ("angels"). The dispersed share ownership not only provides the diversification of risk associated with large number of shares, but also helps to preserve the entrepreneurs' bargaining power against large private investors (Chemmanur and Fulghieri, 1999). Pagano (1993) presents a model where entrepreneurs choose to go public to reap the benefit of diversification of their portfolios, rather than to have most of their money stuck in the private companies. Leland and Pyle (1977) also suggest diversifying the founding shareholders' wealth as a motive behind their decision to take the company public. Apparently, a company with a smaller shareholder base exhibits a larger need to diversify. Thus, a larger number of block shareholders (**logno_block**) should lead to a lower propensity to go public.

Second, if diversification is important to the controlling shareholders, we should expect riskier firms to be more likely to go public. Credit rating should be a good indicator of the riskiness of a company. While in most countries the credit rating is generally assigned only to the public companies, it is available to the entire private and public sectors in the U.K. This credit rating score, known as **QuiScore**, is provided by a credit rating company Qui Credit Assessment Ltd and measures the likelihood of company failure in the year following the date of calculation.

H4: The probability of going public is negatively related to credit rating and the number of (block) shareholders.

2.2 Testing Hypotheses on M&A as an Alternative Exit Channel

To study further how the consideration of ownership and control transfer affects the listing decision, we examine an alternative exit channel, i.e. being acquired. We believe such a study is important and can shed further light on the issue. Specifically, we want to see how the four control transfer consideration factors affect the decision choices of *being acquired against staying private* and *being acquired against going public.*

2.2.1 M&A or Private

Other than going for an IPO, a private company may exit through a takeover. Surprisingly, there are very limited studies on this exit channel. In our context, we ask the question if the decisions of going for an IPO and being acquired are different as far as ownership is concerned. If private benefit of control is important to the insiders for the IPO decision, it should also be an important factor for takeover exit as target insiders typically lose control of their firm to the acquirer. However, if cashing out is an important motive, going public or being acquired could be different to the insider. As mentioned before, Zingales (1995a) argues for insider's sequential selling of cash flow rights to the public investors through IPO first and the control rights through takeovers later to maximize cashing-out total proceeds. As such, the major shareholder (**pct_major**) is balancing the cost of losing the control benefits against the control premium to be realized through M&A. It is hence not obvious that a private firm will necessarily prefer being acquired over remaining private. However, since a **family** firm or a firm with a **multi-class** share structure typically secure better control of the whole firm, these firms, arguably, are more valuable to a *private* acquirer than a *public* acquirer as the private acquirer is not under public scrutiny and can enjoy more private benefits of control. In that case, a private acquirer is more willing to offer a higher acquisition premium. Hence, we expect a private firm of family ownership or with a multi-class share structure is more likely to exit through being acquired by another private firm than by a public firm. On the other hand, when the number of block holders (**logno_block**) increases, the firm may face more exit pressure from the block holders who want to diversify their portfolio risk through exit. Yet, exit through private acquisition may not be easy as a private acquirer may find it more costly and difficult to acquire such a company when the

11

firm has more dispersed, significant block holders. Notice that a private acquire can only use cash (instead of stock for a public acquirer) to pay for the acquisition. Like the IPO decision, entrenched managers do not want their firms to be acquired but VC-back firms accept acquisition as an alternative exit channel to cash out. All these lead to the following hypothesis:

H5a: It is indefinite if the major shareholder prefers being acquired or staying private as her percentage shareholding increases.

H5b: Family firms and firms with multi-class structure prefer being acquired by private acquirers as the exit channel.

H5c: Firms with more number of block holders will less likely be acquired by private companies.

H5d: Manager's shareholding is inversely related to but VC is positively related to the acquisition likelihood.

2.2.2 IPO or M&A

Our final interesting comparison is the contrast between the two exit choices, i.e. being acquired or going public. If the private benefits of control attract large enough bid so that the control premium is realized *fully* through M&A without going through an IPO stage first, then a firm may prefer being acquired than going public. This is especially possible if the major shareholder holds a dominating percentage of shares (**pct_major**). This is also true for a **family** firm or a firm with a **multi-class** share structure as the acquirer can secure better the control benefits. Management consideration could be somewhat different. Entrenched managers (**pct_mgr_h**) do not want to lose control benefits anyway, may it be through M&A or IPO. Yet, they can receive the acquisition premium through acquisition only but not through public listing. Hence, they prefer being acquired over going public. On the other hand, **VC** takes public listing over being acquired as the exit channel. Gompers (1996), for instance, argues that young VCs prefer IPO exit to build up their reputations. Black and Gilson (1998) argue that exit through IPO allows VC to enter into an implicit contract over future control of the portfolio company. As for the number of block holders (**logno_block**), the firm has more

12

incentive to exit when there are more block holders but exit through private acquisition may not be easy, as explained before. That means firms with large number of block holders will be more likely to go public than acquired by private companies. Large firms with large controlling shareholders (**major*TA**) prefer going public as an exit channel over being acquired as IPO provides liquidity to the stocks held by the major shareholder with minimum loss of control comparing to being acquired as the exit channel. We hence have the following hypothesis:

H6a: The percentage shareholding of major shareholder is positively associated with the M&A decision whereas the number of block holders is negatively associated with the M&A decision.

H6b: Family firms and firms with multi-class structure prefer M&A to IPO as the exit channel.

H6c: Managerial shareholding increases with the likelihood of the firm being acquired than going IPO.

H6d: Large firms with large controlling shareholders prefer going public as an exit channel over being acquired.

2.3 Controlling Factors

Since the literature has documented many factors affecting the listing decision, we need to control for them before testing our hypotheses stated above. The key factors we will consider and control for come from a few major theories as summarized below.

2.3.1 Adverse Selection

When there is asymmetric information between managers and investors, firms raising external capital to fund new projects face an adverse selection problem (Leland and Pyle, 1977), resulting in overvalued securities for low-valued firms and undervalued securities for high-valued firms (Akerlof, 1970; Spence, 1973). The adverse selection problem is more severe for young firms and small firms (Chemmanur and Fulghieri, 1995) and high-tech firms for which the value uncertainty and asymmetric information between the management and

external investors are high. Hence, we control firm age (**logAge**), firm size (**logTA**), and firm industry in our regression specifications.

2.3.2 Signaling

Based on information asymmetry, the signaling theories focus on the use of signals to reduce the adverse selection problem when companies go public. The effective signals include leverage (Ross, 1977; Ravid and Sarig, 1991), dividend (Miller and Rock, 1985; John and Williams, 1985), reputable accounting firms (Titman and Trueman, 1986; Beatty, 1989; Michaely and Shaw, 1995), and etc. We hence control for firm's **leverage** ratio, whether the firm pays dividend (**div_payer**), and whether the firm is audited by a Big 4 auditor (**big4**).

2.3.3 Information Spillover

Several studies suggest that there is an informational externality associated with IPOs that improves the firm's investment decisions (Benveniste, Busaba and Wilhelm, 2002; Subrahmanyam and Titman, 1999; Mello and Parsons, 1998; and Van Bommel, 2002). Their studies suggest that companies in industries with extensive public contact may go public to capitalize on the additional information exhibited in the stock prices. These industries are the retail, transportation, and service industries and we control for that (**industry_pub**).

2.3.4 Market Timing

The IPO companies may also benefit from the information revealed in the capital markets by "timing" their listings (Ritter, 1987, 1991). Pagano, Panetta and Zingales (1998) use the industry median Market-To-Book ratio (MTB) to capture the effect of clustering in "hot" industries. We hence add in the industry median MTB (**industry_MTB**) and/or the median MTB of each year (**year_MTB**) to control for this market timing effect of IPO.

2.3.5 Capital Structure

The decision to go public is closely related to capital structure. Myers and Majluf's (1984) pecking order theory posits that because of the information asymmetry of public offerings, firms prefer internal finance, and that if external finance is required, the riskiness of the firm determines the type of funds raised. Under the pecking order theory, the firms with the greatest cash deficits will be the most likely to seek public capital. In addition, the theory

predicts that the most significant variable in the multivariate analysis is riskiness proxied by credit rating and leverage (Helwege and Liang, 1996).

On the other hand, the classic static tradeoff theory of capital structure holds that an optimal or target capital structure determines a firm's financing decisions. Like the pecking order theory, the static tradeoff theory predicts that high leverage drives the IPO decision. The two theories can be distinguished by the variable cash deficit, which should be insignificant under the static tradeoff theory, while positively significant under the pecking order theory (Helwege and Liang, 1996). In any case, we include the **cash deficit**, **leverage**, and credit rating (**QuiScore**) into our regression specifications.

2.3.6 Financial Considerations

Listing on a stock exchange incurs high direct costs as well as potential costs if it fails or is withdrawn due to unfavorable reactions of the investors. The relatively fixed direct listing costs are less prominent for larger firms (**logTA**).

Albeit bearing large listing costs, public firms have better access to the capital market. In addition, going public provides a firm with a reduction in financial constraints (Welch, 1989), an improvement in the bargaining power with financiers (Pagano, Panette and Zingales, 1998), or a reduction in the cost of capital due to greater liquidity (Amihud and Mendelson, 1988). The proxies for financial needs or constraints that we include into our regressions are the profitability (**ROA**), cash deficit (**cash_deficit**), capital expenditure (**capex**), sales **growth**, and **leverage**.

2.3.7 Product Reputation

Going public is a good way to raise the attention of the public, and hence enhance a company's reputation in the product market. Stoughton, Wong and Zechner (2001) develop a model where consumers infer quality from the stock price, concluding that only high quality firms go public in the equilibrium. Large growth opportunities and network externalities imply a great tendency for the firm to undertake an IPO rather than use a product price signal. Hence, companies with large **exports** have a higher propensity to go public.

3. Data and Methodology

3.1 Data Sources

Financial statements and ownership information come from the "Financial Analysis Made Easy" (FAME) database.[6] It covers every incorporated entity in the U.K. and Ireland, including those that became inactive. In addition to financial statements and ownership, it includes some other basic information of both public and private firms. The database has both online and CD/DVD versions, the latter published monthly. It keeps annual data (primarily accounting information) for up to ten years for each firm, while only reports the latest value of static data (primarily basic company information and ownership data) as of the updating date. This study uses the CD/DVDs for different years, which cover the period from 1992 to 2005. Different versions of CD/DVDs are checked for the change of static variables, especially the evolution of ownership information which is not possible for the online version.

There are three different sets of ownership data in FAME: shareholders from BvD, a database vendor, shareholders from registry, and shareholders from annual return. The first set of data is the most precise and has been verified by the BvD staff. However, it only contains the major shareholders with the focus on institutional shareholdings, especially holding companies. Moreover, the percentage of shareholdings is missing for most of the companies, with many cases of whole ownership (100%). The shareholding from the registry covers the most details but only for listed companies. Last, the shareholding from the annual returns contains data for both listed and unlisted companies and covers most of the companies. Since our focus is on private companies, we use shareholders from annual return with the largest coverage whenever possible, and then shareholders from BvD. For listed companies, shareholding from the registry is used. For the IPO firms, the ownership data are supplemented with the shareholdings immediately before and after the listings from IPO prospectuses.

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[6] Another working paper De Albornoz and Pope (2004) examine the determinants of IPO in the U.K. and use the same database as this study. However, they do not consider the ownership and control issues and only include a few major accounting variables. Lacking some of the most important data, their tests on the determinants of the IPO decision are not complete.

The list of firms backed by venture capital or private equity is obtained from Private Equity Insight[7]. The data are supplemented with the member lists of the British Venture Capital Association and European Venture Capital Association. Altogether 1,219 firms and 4,746 firm-years observations with VC backup are detected, among which 144 firms went public on LSE, AIM or Ofex in our sample period.

FAME only contains the number, not the percentage, of shares for each shareholder. We derive the percentage of shares by dividing the value of the shares (the multiplication of the number of shares and the issue price) by the issue capital of the same year. Except in very few cases, FAME also does not distinguish different types of shareholders. We identify managerial ownership by matching the shareholder's name with the list of company directors. We follow La Porta, Lopez-de-Silanes and Shleifer (1999) to define a family shareholder as a shareholder that is a person or a family member. The VC ownership is identified by matching the shareholder's name with the list of venture capitalists or private equity providers. The VC indicator is set to 1 if: 1) the largest shareholder is a venture capital or private equity firm, and the stake is no less than 20% of the total share of the company; or 2) if the database of Private Equity Insight indicates that a company is backed by VC. The institutional ownership is determined by extracting the ownership of the shareholders that are institutions but are not identified as VC.

To identify IPOs, we use the detailed listing information from the website of the London Stock Exchange that covers the IPOs on LSE since 1998. The list of IPOs on the LSE before 1998 is obtained from one of the authors of Goergen, Khurshed and Mudambi (2006) that investigate the U.K. firms' strategy of going public. Their data source is KPMG New Issue Statistics section. The IPO list is checked against SDC, Zephyr and OSIRIS to match with FAME.

The M&A target list is obtained from the SDC Platinum. Only U.K. private and non-

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[7] Private Equity Insight is a business sector under Incisive Media PLC which specializes in global venture capital and private equity information with the focus on Europe. It covers essential market data for over 35,000 European investments and 1,500 global institutions. The database indicates 2,037 firms backed by venture capital or private equity, with 177 exiting through listings. More information can be found at their home page: www.privateequityinsight.com.

financial targets are extracted. The list is then merged with FAME by company name, accompanied with manual error checking. 10,601 of the 22,137 observations are matched to FAME.

Lastly, the data are complemented with information from Datastream, IPO prospectuses, IFS, Worldscope, and some company websites whenever necessary.

3.2 Sample Construction

The sample comprises of the following company types as classified in FAME: the private limited, public not quoted, and public quoted (on LSE) companies[8]. It is further restricted in several ways. First, we exclude financial companies (6000 SICs) as their accounting data are essentially different from the other companies, and the public sector (9000 SICs) and the regulated utility industry (4900-4939 SICs) as they are regulated in the sample time period. Second, the subsidiaries of foreign public companies are excluded, as this research focuses on the U.K. domestic IPOs in order to bar the influence of overseas listings. Third, since all companies, public or private, with annual sales exceeding £1,000,000 after June 2000 or £350,000 before June 2000 must be audited, we exclude the companies failing to satisfy the auditing requirements, and those with no auditors in the database (around 7.6% of the sample), as their accounts are not reliable or comparable with other companies. Fourth, to avoid the influence of potential major acquisitions, restructurings or divestments, we follow Ball and Shivakumar (2005) and exclude the firm-years where the book value of total assets changes by over 30% from the previous year.

As a result of manual filings[9] and its large size, FAME has some potential problems of data error. We remove at each extreme 1% of the accounting ratio variables such as ROA, leverage ratio and export scaled by sales, and 0.1% of the non-ratio accounting variables within each company type and for IPO and control groups respectively. Thus only the extreme values within the specific company group are adjusted, which eliminates the potential

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[8] In the U.K., a public limited company (PLC) is a company which is registered as such and it must comply with several requirements, e.g. a minimum share capital of 50,000 pounds. A PLC in the U.K. may issue shares to the general public and get listed on a stock exchange. These are called "public quoted companies". A PLC that is not listed on any stock exchange is called a "public not quoted company". It can be regarded to be at a transition stage between a private company and a public listed company.

[9] Refer to Ball and Shivakumar (2005).

bias[10] against one of the groups. We also manually adjust the data in several consistent ways such as deleting the firm-years with negative total assets and negative total liabilities.

For the ownership data, we exclude the trustee or nominee companies. We also exclude the extreme values when total recognized ownership is greater than 400% or smaller than 5% (around 1% of the sample each). As the issued capital is used to identify the percentage of shareholdings annually while the exact dates of shareholder recording do not coincide with the dates of balance sheet reporting, the total recognized ownership may be slightly greater than 100%. In this case, we adjust the ownership values by dividing the percentages by the total recognized ownership. When there is more than one shareholder within the same family, we group them as a single family shareholder.

The IPO sample is confined to be British domestic companies listed on LSE from 1993 to 2005. The control group is all the private companies satisfying the listing requirements[11] on the LSE in the IPO year. Our final sample consists of 337 IPOs and 61,731 control firms.

3.3 Methodology

Our basic testing model is the logistic regression on the ex ante determinants of the IPO decision with essentially two sets of variables discussed above. One set is the testing variables of share ownership. The second set is the control variables documented in the literature to be important to the IPO decision, such as firm age and the previous year's values of total assets. Eight industry dummies are used to control for the industry fixed effects. The major variables such as total assets, sales and equity are adjusted for inflation by dividing the values by the CPI index of the same year. Income statement items are annualized according to the number of months in the specific fiscal year. To alleviate the potential problem that the motives to go public may revolve over time, we include a highly time-variant variable, the

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[10] Due to the huge number of companies in the database, even a truncation of 0.1% out of one million will reduce the number of the listed firms significantly, since they generally comprise the higher end of the business universe in terms of firm size.

[11] The admission requirements to the London Stock Exchange (main board) include: (i) an obligation for 25% of the shares to be held by persons unconnected with the company, (ii) a three year trading record (however Chapter 25 of the Listing Rules permits companies with less than three years' track record to join on satisfaction of certain criteria), (iii) a minimum market capitalization of £700,000, and (iv) the admission document to be approved by the UKLA. Furthermore, a company listed on the Main Market must already be a "public limited company".

median market-to-book ratio of all the public traded companies each year. The MTB ratio is also among the most important time-variant factors affecting the decision to go public.

The summary of all the hypotheses and explanatory proxy variables with predicted signs are exhibited in Appendix 2. We have also checked the correlations between the independent variables. For the accounting variables, no significant correlations are found except between profitability and free cash flow. Between the accounting and ownership variables, no significant correlations are found except between Big 4 dummy and the family indicator. However, many ownership variables are highly correlated due to the small number of possible values. As such, each test contains several models, where we separately include one of the few highly correlated variables. The correlations among the ownership variables are reported in Appendix 3.

4. Empirical Evidence

4.1 Summary Statistics

4.1.1 Accounting Variables

Table 1 reports the summary statistics of the relevant accounting variables. More information on the accounting data in the entire FAME database can be found in Ball and Shivakumar (2005).

(Insert Table 1 Here)

Panel A of Table 1 shows that the median total assets of the *private* companies, which is £2.49 million, is much higher than the listing requirement which is at least £700,000. The median equity is £770,000, which is also much higher than the equity listing requirement of £50,000. The third listing requirement of at least 3 years of trading records is also not difficult to meet, as the median company has an age of 17 years. The total assets of the LSE listed companies are much larger than those of private companies. Relative to the private group, the public listed firms have higher long-term debts, indicating the better ability to issue long-term

20

debts. The slightly higher QuiScore supports this observation. The capital expenditure is larger for LSE listed companies than for private companies, while profitability is similar for both. Notice that private firms have significantly variable growth.

Panel B of Table 1 shows the same set of statistics for IPO and control companies. As seen, the private companies choosing to go public have larger sizes, leverage, growth, and capital expenditure, but significantly lower ages and slightly lower credit scores compared to the peer companies staying private. The median age of the IPO companies is only around 5 years, while the median age of the companies staying private is around 21 years. The median sales growth of the IPO companies is 27.1%, over 9 times that of the peer private group. Both groups have similar profitability.

Panel C of Table 1 indicates similar characteristic for private companies acquired by public and private companies.

4.1.2 Ownership Variables

As the ownership data in this database are quite novel in the literature, we provide the descriptive statistics for all the companies with the ownership data available, in addition to the various groups mentioned above[12].

(Insert Table 2 Here)

Panel A of Table 2 shows a very large sample size of 395,177 observations or 131,062 companies with ownership data, around 66% of the entire sample of non-financial companies. This indicates that the coverage of the database is extensive.

The total percentage of the recognized shareholders is high, which is 97% at the first quartile. The managerial ownership is around 28.7% at the median and 99.9% at the third quartile indicating that around one fourth of the whole sample is fully held by managers. This is due to the large number of private companies that are closely controlled by managers-

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[12] The eligible sample is smaller than the whole sample because some private companies don't have accounting data comparable to the other companies due to missing, unaudited or extreme data, or because they are not eligible to go public.

owners. Consistent with this observation, the number of shareholders is very small, which is 2 at the third quartile. Around half of the companies have an individual or a family controlling 46.5% of the shares and the 3rd quartile of the companies are fully controlled by an individual or a family.

Panel B of Table 2 reports the summary statistics of the ownership variables for public or private companies. The characteristics of the private companies are quite similar to those in Panel A, since 98% of the whole sample are private companies. The situation is quite different for public companies. The percentage holdings of various types of shareholders seem to decline drastically upon public listing, while the number of (block) shareholders increases. This is consistent with the more diverse shareholder bases for public companies. The evidence shows that half of the listed companies have the major shareholder's ownership below 10%. Using Helwege, Pirinsky and Stulz's (2007) definition, these companies could actually be considered as widely held, i.e. without a major shareholder. Further, more than a half of public firms have no block shareholders, family controlling shareholders, or multi-class shares.

Panel C of Table 2 reports the summary statistics of the ownership variables for the private companies choosing to go public or staying private. The percentages of different types of stakes are conceivably lower for IPO firms than those staying private. The managerial ownership for the median IPO company is 18.5%, in contrast to 45% for the control group. Similarly, the median family ownership is 21.8% for IPOs which is also significantly lower than the 51% for the control group. Needless to say, the major shareholder's share for IPO companies is much lower, 31% for the median firm. The number of shareholders is 9 for the median IPO company, suggesting that the companies choosing to go public have a relatively diversified shareholder base.

Panel D of Table 2 indicates that the private companies acquired by public bidders have lower managerial ownership and significantly smaller family stakes relative to private acquirers. Actually the median family ownership is merely 1% for the targets of public acquirers. Other characteristics are similar for the two groups.

22

4.2 Regression Results

4.2.1 Exit through Public Listing

Table 3 reports the results of eight regression specifications on IPOs on LSE. Since the existence of parent companies could significantly affect the ownership structure, and the IPO decisions may be well influenced by the listing status of parent companies, only independent companies are included.

(Insert Table 3 Here)

Both **pct_block** and **pct_major** enter negatively into most regression specifications with high statistical significance. The odd ratio of **pct_major** is extremely small, which is less than 0.0001. That means the higher the block ownership or majority ownership, the less likely the company will go listed. On the other hand, **logno_block** enters positively and significantly into the regressions, suggesting that a company will likely go public if it has more block holders so that the major shareholder has less ability to stop the company from going IPO in order to retain his/her control benefits. Other block holders are more interested in cashing out through IPO instead. In fact, the involvement of venture capital or private equity (**VC**) also greatly increases the probability of an IPO as an exit channel.

Further evidence on the agency problem can be found in the segmented managerial ownership variables, which show striking different signs among them. In the low range of managerial ownership below 10% (**pct_mgr_l**), the more shares the managers hold, the more likely the company is to go public. As the divergence-of-interest agency theory predicts, the better alignment of the interests between managers and shareholders will reduce the agency cost. In the middle range (**pct_mgr_m**), however, the results become insignificant. This is the range where the entrenchment effect begins to dominate the divergence-of-interest effect. Finally, in the high range of managerial ownership above 40% (**pct_mgr_h**), higher percentage of managerial ownership actually discourages IPO. This is consistent with the

prediction that agency problem between the managers-owners and minority shareholders becomes dominant and deters the public floating.

Indicators of private benefits of control other than the ownership variables also exhibit significant results. First, having a "Big 4" auditor (**big4**) significantly increases the probability of IPO, as shown in Models 3, 7 and 11. Second, the **multi_class** share dummy enters uniformly negative and significantly throughout all model specifications. The results suggest that the potential loss of pecuniary benefits of control is an important deterrent to listing on the LSE. On the other hand, the **family** indicator is not significant, suggesting that "amenity potential" does not discourage an IPO.

The marginally positively significant results on the interaction term of major ownership with firm size (**major*TA**) in Models 3 and 11 suggests that bigger firms can reap the benefit of liquidity better. The higher the percentage of stakes is held by the controlling shareholders, the more significant this effect is.

As for the control effects, the marginally significant **cash_deficit** combined with the positive **leverage** and insignificant yet consistently negative credit rating (**QuiScore**) supports the pecking order theory over the target capital structure claim. This is also consistent with the high level of information asymmetry associated with a public floating. The direct evidence on information asymmetry and signaling arguments, however, is mixed. Consistent with the predication, bigger companies are more likely to go public, but surprisingly, older firms tend to stay private[13], and the results on **high_tech** are insignificant. There is evidence of IPO firms signaling with "**Big 4**" auditors and high **leverage**, but not with **dividend** payment. The mixed evidence related to information asymmetry could be a result of the similar disclosure requirements for the private and public companies in the U.K.[14] Other

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[13] This is in sharp contrast with Pagano, Panetta and Zingales (1998) who find that IPO firms in Italy are around 10 years older than their private peer, but more in line with the U.S. evidence of significant portion of young venture-backed IPO companies reported by Gompers (1996).

[14] In the U.K., all the financial statements must be prepared in accordance with U.K. accounting standards, whether the firm is public or private. The financial statements must be audited if the company's annual sales exceed 1,000,000 pounds. The LSE listing rules require additional disclosure for public companies, but the rules do not mandate accounting standards for financial reporting, and in particular, do not address the calculation of earnings. In all important respects, the U.K. regulatory regimes governing financial reporting for public companies and all except the very small private companies are equivalent.

control effects such as information spillover, market timing, financial considerations and product reputation all find support from the evidence.

4.2.2 Exit through Mergers & Acquisitions

Other than going for an IPO, a private company may exit through a takeover. We ask the question if the decisions of going for an IPO and being acquired are different as far as ownership is concerned. We distinguish public from private acquirers and run separate logit regressions. The comparison between them enables us to see further if the decision of being acquired by a public or a private company would be systematically different. The results are presented in Table 4. For simplicity, only major control variables are included. To facilitate the comparisons, we put side-by-side the exit choices by IPO (Panel A), by public acquisition (Panel B), and by private acquisition (Panel C).[15]

(Insert Table 4 Here)

It is clear that losing ownership control remains an important concern for private insiders as a group to sell their shares to the acquirer, be it public or private, as **pct_block** enters uniformly negative and highly significant in most of the regression models. However, the major insider may hold a different view because if an acquirer is interested in her company, she can bargain for an acquisition premium high enough to compensate for her loss of control of the company and avoid the costs of going for an IPO, which include the underpricing cost. Our results indeed show that **pct_major**, which is significantly negative in the IPO regression Model 3 of Panel A, becomes insignificant in the M&A regression Panels B and C. That is to say, the major insider is reluctant to go for an IPO if holding more shares but is not against being acquired. In fact, if the major insider is an individual or a **family**, it is likely to accept an acquisition by a private company, as shown in Model 4 of Panel C. One possible explanation is that a private acquirer may be more flexible than a public acquirer to

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[15] The IPO regression results in Panel A are different from those in Table 3 because of different set of control variables. However, the estimates are qualitatively the same.

bid more aggressively to a target company, especially that target company is owned by an individual or a family in which the control right is easily transferred to the acquirer. Also, as mentioned earlier, a private bidder has to pay cash to the target firm, which is preferable than publicly listed stocks normally used by a public acquirer. In other words, an individual or a family will benefit the most by selling shares to a private acquirer.

Similar argument could be applied to management with high share ownership (**pct_mgr_h**). An entrenched manager is likely to face public scrutiny when her company goes public. However, if the company turns public through being acquired by a public company, the cost of receiving public scrutiny is balanced somewhat by the benefit of receiving an acquisition premium. As a result, the coefficient of **pct_mgr_h** drops from -3.22 (significant at the 5% level) in the IPO regression model 1 of Panel A to -0.82 (insignificant) in the M&A (public) regression model 1 of Panel B. In fact, when the firm is acquired by a private company, the coefficient drops further and remains statistically insignificant, suggesting that the entrenched manager is not against private acquisition as the threat of public scrutiny does not exist.

Notice that the number of block holders (**logno_block**) becomes insignificant in the last set of regressions in Panel C whereas in Panels A and B, it is significantly positive. This is not necessarily inconsistent with the diversification argument. One possible explanation could be that private acquirer shies away from a target firm with too many block holders as it is more costly and difficult to successfully acquire a firm like that.

Companies with multiple classes of stocks (**multi-class**) are repulsive to go public (Panel A) due to the cost of losing benefits of control, as mentioned before, but are indifferent for being acquired by public companies, as shown in Panel B. One possible explanation is that the acquirer may be more willing to pay a high acquisition premium on the stock class of higher voting right, that offsets the cost of becoming public after acquisition. In fact, if the acquirer is a private company, the variable becomes even significantly positive, as shown in Panel C. Arguably, a private company values such class structure more as the private benefits of control is larger for a private company which is away from public scrutiny, as postulated in

our Hypothesis 5.

Credit rating (**QuiScore**) is more important under acquisition decision than under IPO decision. Higher credit rating means the firm is less risky and easier to tab the credit market for needed capital. In this aspect, the firm has no urgency to exit. This may explain the uniformly significant negative coefficients of the variable in all the acquisition regression specifications in Panels B and C.

Three control variables important to the IPO decision but not to the acquisition decision are **year_MTB**, **logTA**, and **growth**. Such results are consistent with the market-timing explanation of IPO activities. Unlike an IPO where a firm actively seeks to go public when the condition is favorable, it is uncommon for a firm to actively seek for being acquired, i.e. it is usually the acquirer taking the initiative, so these factors are less important. For instance, a firm willing to exit through acquisition may not have advantage if it is bigger. Interestingly, **ROA** is important to these firms than to IPO firms.

4.2.3 Going Public through IPO or M&A

We end our analysis by asking a final but interesting question of how a firm chooses between being acquired (by a public company or by a private company) and going for an IPO. This is different from the analysis above in which the alternative decision is always remaining private. We hypothesize (H6) that the percentage shareholding of major shareholder is positively associated with the M&A decision whereas the number of block holders is negatively associated with the M&A decision. Family firms and firms with multi-class structure prefer M&A to IPO as the exit channel. Large firms with large controlling shareholders (interaction term) prefer going public as an exit channel over being acquired. Also, these firms view no difference between being acquired and remaining private. Our results in Table 5 provide a general support to our hypothesis.

(Insert Table 5 Here)

To facilitate comparisons, we copy back the previous logit result on the decision of

27

being acquired by a public company against remaining private (Table 4 B) as Table 5 B. An immediate observation is that all the ownership variables tend to change signs in the two panels. For instance, we discussed above that **pct_block** is significantly negative if the choice is between being acquired and staying private (Panel B) but the variable, together with **pct_major**, becomes significantly positive in Panel A. That is to say, when the major shareholder and block holders hold more shares, they prefer staying private but if they have to exit, they prefer being acquired (by a public company) than going for IPO. This suggests that the control benefit factor is more important than the acquisition premium factor. The premium paid by the acquirer is more attractive to major shareholders than going for public but the premium is not attractive enough to justify foregoing the private status of the firm for the major shareholders to gain control benefits. However, as the number of block holders (**logno_block**) increases, the control benefits for *individual* block holder reduce so that the acquisition premium becomes relative attractive. That explains the sign of the coefficients flips from positive in Panel B to negative in Panel A.

The managerial ownership variables reveal a similar picture, though insignificant. If managers hold higher percentage of shares (**pct_mgr_h**), their decisions are similar to major and block shareholders. However, if they own only small percentage of shares (**pct_mgr_l**), the decisions will be the opposite. That is, if they are left with the choice of either being acquired or going public, they tend to prefer the latter. However, if the choice is between being acquired and remaining private, they prefer being acquired. One possible explanation is that managers with too few stakes in the company do not have strong enough incentives to stay with the private company. With more shares, they rather sell them to the acquirer to reap the acquisition premium.

Notice that more firmly controlled companies with **multi-class** share structure prefer acquisitions by public companies over IPOs, as revealed by the variable entering uniformly significantly positive into various specifications in Panel A. They likely earn higher acquisition premium when selling higher control-right shares. On the other hand, **family** controllers seem indifferent among the choice of being acquired by a public firm, IPO, or

staying private.

Also observe that the IPO companies have larger sizes, faster growths, higher capital expenditures, and younger ages. These are consistent with better capital requirements and higher potentials. It is likely that this group has to restrain their consumption of private benefits of control in order to fund their capital needs. Additionally, independent public companies have more scope for future fund raising, while the mergers have to share resources with the parent or sibling companies. Notice that **VC** shareholders seem to prefer exit through IPO than being acquired, confirming part of our Hypothesis 6.

Our final set of results shows the decision choice of acquisition by a private firm over IPO. We briefly contrast the results in Panels A and C to see whether the decision for a firm being acquired by a public company or a private company would be different against the IPO consideration. The general answer is negative, i.e. there is not much difference between two as their regression results are qualitative similar. This is true also for the ownership variables, the focus of our study. Specifically, shareholdings of major shareholders and managers do not make significant changes in their decision choices over acquisition by public or private company when IPO is the exit alternative.

5. Conclusion

This study empirically investigates the reasons that a significant portion of the private companies that satisfy the listing requirements do not go public, from the perspective of ownership and control. While the literature has many theoretical postulates on the going-public motives, relevant empirical evidence is sparse, especially on issues related to ownership and control. This study capitalizes on a comprehensive database FAME with accounting and ownership data for the majority of U.K. private and public companies. The major contribution is that this research examines the ex ante determinants of the IPO decision, including not only accounting variables, but also ownership and control measures. With the ownership information, it is now possible to examine the true motives behind the scene, as the

IPO decision is ultimately the decision of the initial owners of the private companies regarding their shares. In addition, the results uncover the control preferences of various types of shareholders, as well as the level of private benefits of control of the vast private companies.

The empirical results show that the main reason that some private companies are reluctant to go public is the potential loss of pecuniary benefits of control, while "amenity potential" may not deter a company from attempting an IPO. As for the benefits of listing, the major shareholders in large companies value the liquidity benefit after going public willing to give up some control benefits, while block holders are more likely to get the firm public or acquired by another publicly listed company as they realize the diversification benefits upon listing. Last, going public provides venture capital or private equity shareholders with a way to cash out.

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Table 1: Descriptive Statistics of Accounting Variables

This table reports the descriptive statistics of the accounting variables for the companies listed on London Stock Exchange versus private companies (Panel A), for private companies choosing to go public versus those staying private (Panel B), and for private companies acquired by public versus private companies (Panel C). The variables are measured in GBP, and defined in Appendix 1. The descriptive statistics are, from left to right, the number of company-years, median, mean, standard deviation, and skewness. The period is from 1992 to 2005.

Panel A: Public vs. Private

Variable	No Obs. Public	No Obs. Private	Mean Public	Mean Private	Median Public	Median Private	Std Public	Std Private	Skewness Public	Skewness Private
total assets	8,325	329,753	3.85E+08	1.73E+07	5.37E+07	2.49E+06	1.70E+09	1.61E+08	30.856	55.847
sales	8,234	284,483	4.18E+08	2.45E+07	6.62E+07	4.15E+06	1.92E+09	1.59E+08	38.378	45.299
equity	8,325	329,753	1.66E+08	6.20E+06	2.51E+07	7.70E+05	7.80E+08	7.33E+07	41.966	59.412
age	8,325	329,752	34.795	23.577	19.89	17.194	32.101	20.51	0.912	1.633
capex	5,639	101,225	0.206	0.152	0.157	0.101	0.229	0.211	1.021	1.37
ROA	8,325	329,753	0.079	0.101	0.09	0.083	0.117	0.176	-1.019	2.388
leverage	8,325	329,748	0.152	0.14	0.098	0.023	0.177	0.24	1.787	3.041
growth	7,972	250,525	0.106	1.615	0.071	0.039	0.287	12.616	7.992	3.316
export	8,233	284,480	0.202	0.067	0.002	0	0.291	0.181	1.24	3.17
QuiScore	7,964	266,430	62.807	55.88	62	54	21.691	23.345	-0.337	0.001
cash_deficit	5,625	101,239	0.017	-0.063	-0.037	-0.067	0.237	0.112	3.351	2.623
div_ind	8,325	329,753	0.789	0.411	1	0	0.408	0.492	-1.416	0.36
industry_mtb	8,324	329,553	2.08	2.013	2.05	1.91	0.565	0.589	0.415	0.472
year_mtb	8,226	327,937	2.064	2.014	2.07	2.02	0.329	0.355	-0.705	-0.564
industry_pub	8,325	329,753	0.378	0.346	0	0	0.485	0.476	0.503	0.647
high_tech	8,325	329,753	0.041	0.048	0	0	0.198	0.214	4.633	4.218
big4	8,325	326,894	0.782	0.3	1	0	0.413	0.458	-1.369	0.873

Panel B: IPOs vs. Control Firms

Variable	No Obs. IPO	No Obs. Control	Mean IPO	Mean Control	Median IPO	Median Control	Std IPO	Std Control	Skewness IPO	Skewness Control
total assets	337	220,687	1.39E+08	2.25E+07	1.85E+07	3.73E+06	4.45E+08	1.89E+08	4.901	50.088
sales	325	180,017	1.29E+08	3.41E+07	2.53E+07	7.39E+06	3.41E+08	1.93E+08	4.345	38.764
equity	337	220,687	3.71E+07	9.02E+06	3.56E+06	1.46E+06	1.62E+08	8.50E+07	6.707	55.589
age	337	220,687	9.437	27.999	4.786	21.429	16.213	21.418	3.927	1.454
capex	220	89,348	0.339	0.144	0.277	0.099	0.283	0.185	0.389	1.08
ROA	337	220,687	0.089	0.088	0.09	0.079	0.139	0.084	0.033	0.468
leverage	337	220,687	0.251	0.115	0.155	0.03	0.263	0.163	0.666	1.648
growth	307	169,757	0.296	0.032	0.271	0.028	0.288	0.171	-0.268	0.273
export	324	180,014	0.2	0.081	0.005	0	0.302	0.19	1.309	2.757
QuiScore	259	198,236	53.826	59.667	53	57	20.672	20.921	-0.103	0.183
cash_deficit	219	89,284	0.088	-0.07	-0.013	-0.068	0.343	0.083	1.799	0.955
div_ind	337	220,687	0.481	0.431	0	0	0.5	0.495	0.078	0.279
industry_mtb	319	220,529	2.416	1.97	2.405	1.88	0.626	0.573	0.064	0.48
year_mtb	337	220,685	2.166	1.989	2.26	2.02	0.274	0.362	-0.969	-0.501
industry_pub	337	220,687	0.582	0.277	1	0	0.494	0.447	-0.332	0.998
high_tech	337	220,687	0.095	0.037	0	0	0.294	0.188	2.776	4.941
big4	337	220,687	0.816	0.331	1	0	0.388	0.471	-1.639	0.716

Panel C: Acquisition by Public vs. Private Companies

Variable	No Obs.		Mean		Median		Std		Skewness	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
total assets	5,529	7,626	1.76E+07	1.71E+07	4.85E+06	4.76E+06	1.17E+08	7.94E+07	33.685	14.4
sales	4,829	6,289	2.69E+07	3.13E+07	9.39E+06	9.98E+06	8.55E+07	1.28E+08	13.163	14.001
equity	5,529	7,626	7.06E+06	7.12E+06	1.77E+06	1.75E+06	6.09E+07	3.88E+07	36.003	16.841
age	5,529	7,626	23.138	26.287	17.04	19.44	19.803	21.536	2.064	1.639
capex	2,059	3,434	0.184	0.154	0.137	0.116	0.2	0.176	0.937	0.964
ROA	5,529	7,626	0.109	0.097	0.098	0.089	0.096	0.085	0.264	0.278
leverage	5,529	7,626	0.119	0.131	0.04	0.061	0.162	0.163	1.6	1.454
growth	4,658	6,026	0.042	0.044	0.042	0.042	0.175	0.163	0.112	0.248
export	4,829	6,289	0.094	0.076	0	0	0.202	0.175	2.449	2.855
QuiScore	4,922	7,051	59.89	57.73	58	55	20.508	19.909	0.163	0.264
cash_deficit	2,055	3,432	-0.086	-0.078	-0.085	-0.078	0.09	0.093	0.508	2.285
div_ind	5,529	7,626	0.483	0.5	0	0	0.5	0.5	0.067	0.001
industry_mtb	5,509	7,620	2.046	1.999	1.91	1.9	0.573	0.549	0.542	0.462
year_mtb	5,529	7,626	2.003	1.999	2.02	2.02	0.361	0.361	-0.553	-0.54
industry_pub	5,529	7,626	0.348	0.277	0	0	0.476	0.447	0.639	0.998
high_tech	5,529	7,626	0.075	0.041	0	0	0.263	0.198	3.241	4.636
big4	5,529	7,626	0.487	0.364	0	0	0.5	0.481	0.054	0.566

Table 2: Descriptive Statistics of Ownership Variables

This table reports the descriptive statistics of the ownership variables for the companies listed on London Stock Exchange versus private companies (Panel A), for private companies choosing to go public versus those staying private (Panel B), and for private companies acquired by public versus private companies (Panel C). The variables are defined in Appendix 1. The period is from 1992 to 2005.

Panel A: The Whole Sample

Variable	No Obs.	Mean	Std	Skewness	p1	p25	Median	p75	p99
pct_all	395,177	0.9153	0.1827	-2.4631	0.1371	0.97	1	1	1
pct_mgr	395,177	0.4316	0.4437	0.2325	0	0	0.2868	0.999	1
pct_family	395,177	0.4607	0.4556	0.1851	0	0	0.4645	1	1
pct_major	395,177	0.731	0.2961	-0.5653	0.0667	0.5	0.8935	1	1
pct_block	395,177	0.8914	0.2161	-2.4294	0	0.9	1	1	1
no_sharehol	445,336	2.7616	5.9224	8.7283	1	1	2	2	38
no_block	445,336	1.4241	1.0736	1.722	0	1	1	2	5
family	395,177	0.6035	0.4892	-0.4231	0	0	1	1	1
VC	658,904	0.014	0.1174	8.2822	0	0	0	0	1
multi_class	523,619	0.0377	0.1906	4.8514	0	0	0	0	1

Panel B: Public vs. Private

Variable	No Obs.		Mean		Median		Std		Skewness	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
pct_all	2,742	122,244	0.548	0.916	0.538	1	0.199	0.181	0.153	-2.467
pct_mgr	2,742	122,244	0.121	0.471	0.046	0.5	0.164	0.443	1.79	0.066
pct_family	2,742	122,244	0.176	0.499	0.107	0.554	0.196	0.453	1.52	0.023
pct_major	2,742	122,244	0.156	0.717	0.103	0.8	0.142	0.294	2.136	-0.452
pct_block	2,742	122,244	0.171	0.892	0.103	1	0.223	0.205	1.402	-2.37
no_sharehol	3,402	134,075	35.291	2.45	39	2	22.249	3.303	0.211	9.636
no_block	3,402	134,075	0.646	1.537	0	1	0.929	1.12	1.654	1.669
family	2,742	122,244	0.162	0.539	0	1	0.368	0.498	1.836	-0.157
VC	8,325	329,753	0.079	0.008	0	0	0.27	0.088	3.112	11.183
multi_class	3,545	154,317	0.004	0.037	0	0	0.06	0.189	16.429	4.911

Panel C: IPOs vs. Control Firms

Variable	No Obs.		Mean		Median		Std		Skewness	
	IPO	Control	IPO	Control	IPO	Control	IPO	Control	IPO	Control
pct_all	144	90,197	0.741	0.916	0.834	1	0.263	0.183	-0.806	-2.502
pct_mgr	144	90,197	0.266	0.453	0.185	0.45	0.266	0.442	0.863	0.138
pct_family	144	90,197	0.281	0.481	0.218	0.51	0.276	0.454	0.942	0.102
pct_major	144	90,197	0.369	0.72	0.311	0.83	0.237	0.299	1.197	-0.495
pct_block	144	90,197	0.597	0.889	0.635	1	0.306	0.21	-0.407	-2.344
no_sharehol	156	96,932	9.462	2.55	9	2	7.146	3.288	3.006	9.283
no_block	156	96,932	1.987	1.583	2	1	1.31	1.147	0.338	1.683
family	144	90,197	0.389	0.519	0	1	0.489	0.5	0.461	-0.076
VC	337	220,687	0.3	0.008	0	0	0.459	0.091	0.878	10.814
multi_class	164	112,305	0.018	0.039	0	0	0.134	0.193	7.256	4.772

Panel D: Acquisition by Public vs. Private Companies

Variable	No Obs.		Mean		Median		Std		Skewness	
	Public	**Private**	**Public**	**Private**	**Public**	**Private**	**Public**	**Private**	**Public**	**Private**
pct_all	2,187	3,194	0.904	0.899	1	1	0.198	0.201	-2.283	-2.249
pct_mgr	2,187	3,194	0.348	0.412	0	0.249	0.414	0.431	0.592	0.309
pct_family	2,187	3,194	0.371	0.437	0.011	0.331	0.428	0.446	0.545	0.313
pct_major	2,187	3,194	0.729	0.706	0.9	0.797	0.303	0.306	-0.582	-0.445
pct_block	2,187	3,194	0.874	0.867	1	1	0.224	0.232	-2.079	-2.07
no_sharehol	2,400	3,411	2.478	2.633	1	2	2.742	3.456	5.99	9.353
no_block	2,400	3,411	1.506	1.563	1	1	1.113	1.082	1.661	1.619
family	2,187	3,194	0.407	0.476	0	0	0.491	0.5	0.379	0.095
VC	5,529	7,626	0.017	0.019	0	0	0.129	0.135	7.474	7.123
multi_class	2,792	3,979	0.073	0.074	0	0	0.26	0.261	3.293	3.266

Table 3: Ex Ante Determinants of the IPO Decision

Logistic models are estimated on the likelihood that a private firm will go public on London Stock Exchange (LSE). The dependent variable is 1 for private companies going public on LSE from 1993 to 2005, and 0 for companies eligible to list on LSE but staying private. Only independent companies are included. The data for the IPO companies are measured one year before their IPOs. The variables are defined in Appendix 1. Eight industry dummies are used but not reported. T statistics are in parenthesis. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6	7	8	9	10	11	12
pct_major			-12.853**				-12.428*				-13.740**	
			(-1.98)				(-1.91)				(-2.13)	
pct_block	-0.935	-2.966***		-1.684***	-0.920	-2.932***		-1.661***	-0.905	-2.885***		-1.683***
	(-1.39)	(-4.22)		(-3.03)	(-1.38)	(-4.18)		(-3.02)	(-1.35)	(-4.16)		(-3.08)
logno_block		0.755**				0.746**				0.689*		
		(2.02)				(1.98)				(1.86)		
family				-0.252				-0.295				-0.333
				(-0.68)				(-0.79)				(-0.92)
pct_mgr_l	12.817*				13.492**				12.325*			
	(1.88)				(1.99)				(1.83)			
pct_mgr_m	1.185				0.801				0.922			
	(0.50)				(0.34)				(0.39)			
pct_mgr_h	-3.338**				-3.270**				-3.293**			
	(-2.50)				(-2.45)				(-2.48)			
major*TA			0.627*				0.604				0.680*	
			(1.65)				(1.59)				(1.80)	
VC	1.907***	2.073***	1.800***	2.212***	1.838***	1.979***	1.733***	2.115***	1.941***	2.022***	1.804***	2.232***
	(4.86)	(4.83)	(4.45)	(5.76)	(4.68)	(4.60)	(4.29)	(5.46)	(5.06)	(4.81)	(4.57)	(5.98)
multi_class	-2.533**	-2.433*	-2.470**	-2.956***	-2.665***	-2.597**	-2.526**	-3.023***	-2.446**	-2.357*	-2.345**	-2.866**
	(-2.56)	(-1.88)	(-2.37)	(-2.61)	(-2.65)	(-1.97)	(-2.38)	(-2.66)	(-2.50)	(-1.90)	(-2.27)	(-2.54)
QuiScore	-0.011	-0.015	-0.014	-0.009	-0.012	-0.016*	-0.015*	-0.010	-0.009	-0.013	-0.013	-0.008
	(-1.24)	(-1.56)	(-1.56)	(-1.07)	(-1.35)	(-1.72)	(-1.69)	(-1.20)	(-1.04)	(-1.39)	(-1.41)	(-0.94)
big4		0.616	0.878**			0.625	0.877**			0.590	0.877**	
		(1.52)	(2.20)			(1.53)	(2.19)			(1.47)	(2.21)	
logTA	0.659***	0.546***	0.229	0.559***	0.656***	0.539***	0.236	0.555***	0.651***	0.551***	0.207	0.562***
	(5.28)	(3.97)	(1.08)	(4.81)	(5.24)	(3.90)	(1.11)	(4.77)	(5.31)	(4.06)	(0.98)	(4.93)
logAge	-1.539***	-1.633***	-1.447***	-1.624***	-1.503***	-1.585***	-1.414***	-1.583***	-1.541***	-1.605***	-1.452***	-1.621***
	(-6.38)	(-6.12)	(-5.91)	(-6.77)	(-6.25)	(-5.98)	(-5.82)	(-6.62)	(-6.47)	(-6.13)	(-5.99)	(-6.86)
high_tech	-0.595	-0.746	-0.649	-0.515	-0.854	-1.167	-0.900	-0.814	-0.610	-0.775	-0.683	-0.491
	(-0.80)	(-0.97)	(-0.86)	(-0.73)	(-1.02)	(-1.27)	(-1.05)	(-0.99)	(-0.83)	(-1.03)	(-0.91)	(-0.70)

	1	2	3	4	5	6	7	8	9	10	11	12
leverage	1.641*	1.641*	1.634*	1.715**	1.456*	1.472	1.533*	1.557*	1.732**	1.731*	1.761**	1.834**
	(1.88)	(1.73)	(1.87)	(2.02)	(1.70)	(1.58)	(1.78)	(1.86)	(2.02)	(1.85)	(2.05)	(2.19)
div_payer	-0.083	-0.011	0.067	0.116	-0.129	-0.094	0.010	0.050	-0.083	-0.026	0.035	0.106
	(-0.21)	(-0.03)	(0.17)	(0.30)	(-0.34)	(-0.24)	(0.03)	(0.14)	(-0.21)	(-0.06)	(0.09)	(0.28)
industry_pub									1.342***	1.150**	1.373***	1.237***
									(2.88)	(2.39)	(2.91)	(2.71)
industry_MTB									0.019	0.200	-0.028	0.131
									(0.05)	(0.54)	(-0.08)	(0.38)
year_MTB	1.289***	1.359***	1.182**	1.295***	1.212**	1.252**	1.103**	1.200**	1.279**	1.258**	1.204**	1.253**
	(2.61)	(2.60)	(2.43)	(2.68)	(2.48)	(2.43)	(2.30)	(2.51)	(2.46)	(2.28)	(2.33)	(2.46)
cash_deficit					1.501	1.813*	1.267	1.606*				
					(1.62)	(1.77)	(1.33)	(1.74)				
ROA	-1.951	-2.674	-1.847	-2.207					-1.858	-2.403	-1.828	-2.127
	(-1.03)	(-1.34)	(-0.99)	(-1.17)					(-0.98)	(-1.22)	(-0.98)	(-1.13)
growth	4.484***	4.076***	4.424***	4.742***	4.209***	3.797***	4.235***	4.487***	4.434***	4.122***	4.415***	4.749***
	(5.92)	(5.13)	(5.75)	(6.28)	(5.33)	(4.58)	(5.30)	(5.72)	(6.06)	(5.38)	(5.98)	(6.53)
capex	3.385***	3.681***	2.980***	3.098***	3.283***	3.566***	2.894***	3.006***	3.253***	3.481***	2.923***	3.043***
	(4.70)	(4.91)	(4.24)	(4.47)	(4.56)	(4.78)	(4.10)	(4.34)	(4.68)	(4.84)	(4.26)	(4.50)
export	1.731***	1.951***	2.081***	1.709***	1.770***	1.990***	2.096***	1.750***	1.933***	2.212***	2.283***	1.878***
	(2.74)	(2.96)	(3.25)	(2.82)	(2.79)	(3.01)	(3.26)	(2.87)	(3.16)	(3.51)	(3.70)	(3.19)
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	25710	25125	25710	25710	25687	25103	25687	25687	28633	28014	28633	28633
Pseudo R^2	63.2%	65.8%	63.2%	62.0%	63.3%	66.0%	63.3%	62.2%	63.1%	65.7%	63.2%	62.0%
Chi-Square	580.6	595.3	580.9	569.5	582.2	596.8	581.8	571.3	588.6	603.0	590.0	578.6
Prob > Chi2	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Table 4: Ex Ante Determinants of IPOs and M&A against Remaining Private

Logistic models are estimated on the likelihood that a private firm will go public on London Stock Exchange (Panel A), or be acquired by a public firm (Panel B) or a private firm (Panel C) rather than staying private from 1993 to 2005. Only independent companies are included. The data for the IPO and acquired companies are measured one year before their IPOs or acquisitions. The variables are defined in Appendix 1. Eight industry dummies are used but not reported. T statistics are in parenthesis. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Panel A: IPO vs Private				Panel B: M&A (public) vs Private				Panel C: M&A (private) vs Private			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
pct_major			-12.47*				4.42				2.06	
			(-1.94)				(1.30)				(0.79)	
pct_block	-0.93	-2.97***		-1.72***	-0.14	-0.75*		-0.63**	-0.38	-1.04***		-0.70***
	(-1.41)	(-4.26)		(-3.15)	(-0.37)	(-1.92)		(-2.05)	(-1.25)	(-3.88)		(-2.98)
logno_block		0.75**				0.41**				0.12		
		(2.02)				(2.56)				(1.03)		
family				-0.24				-0.05				0.31**
				(-0.66)				(-0.31)				(2.18)
pct_mgr_l	13.20*				7.45*				6.58*			
	(1.95)				(1.78)				(1.90)			
pct_mgr_m	0.91				-0.81				0.04			
	(0.39)				(-0.57)				(0.03)			
pct_mgr_h	-3.22**				-0.82				-0.44			
	(-2.44)				(-1.53)				(-1.10)			
major*TA			0.60				-0.33				-0.18	
			(1.60)				(-1.52)				(-1.06)	
VC	1.90***	2.07***	1.81***	2.22***	0.83***	0.75**	0.87***	1.01***	0.94***	0.91***	0.93***	1.08***
	(4.91)	(4.91)	(4.51)	(5.87)	(2.60)	(2.30)	(2.82)	(3.29)	(3.63)	(3.60)	(3.73)	(4.37)
multi_class	-2.52**	-2.41*	-2.43**	-2.90***	0.71***	0.60**	0.70***	0.75***	0.40*	0.49**	0.42*	0.43*
	(-2.55)	(-1.88)	(-2.35)	(-2.60)	(2.74)	(2.14)	(2.70)	(2.90)	(1.82)	(2.23)	(1.88)	(1.95)
QuiScore	-0.01	-0.01	-0.01	-0.01	-0.02***	-0.02***	-0.02***	-0.02***	-0.01***	-0.01***	-0.01***	-0.01***
	(-1.21)	(-1.53)	(-1.51)	(-1.05)	(-3.19)	(-3.62)	(-3.27)	(-3.20)	(-3.60)	(-3.46)	(-3.63)	(-3.64)
big4		0.60	0.87**			0.41**	0.43**			0.31**	0.31**	
		(1.50)	(2.18)			(2.08)	(2.27)			(2.06)	(2.11)	
logTA	0.67***	0.57***	0.26	0.57***	0.08	0.03	0.20	0.06	0.11*	0.04	0.14	0.09
	(5.43)	(4.20)	(1.23)	(4.95)	(0.99)	(0.39)	(1.47)	(0.81)	(1.81)	(0.61)	(1.32)	(1.60)
logAge	-1.51***	-1.59***	-1.41***	-1.59***	-0.43***	-0.41***	-0.42***	-0.43***	-0.29***	-0.30***	-0.27***	-0.29***
	(-6.42)	(-6.12)	(-5.90)	(-6.77)	(-3.62)	(-3.39)	(-3.56)	(-3.66)	(-3.29)	(-3.40)	(-3.09)	(-3.38)

	Panel A: IPO vs Private				Panel B: M&A (public) vs Private				Panel C: M&A (private) vs Private			
	1	2	3	4	1	2	3	4	1	2	3	4
leverage	1.71**	1.73*	1.70**	1.77**	-0.01	-0.14	-0.01	-0.03	0.58	0.63	0.60	0.57
	(1.97)	(1.84)	(1.97)	(2.10)	(-0.02)	(-0.25)	(-0.03)	(-0.05)	(1.47)	(1.60)	(1.52)	(1.45)
year_MTB	1.29***	1.35***	1.17**	1.28***	-0.39**	-0.42**	-0.39**	-0.40**	-0.08	-0.17	-0.09	-0.10
	(2.61)	(2.60)	(2.42)	(2.65)	(-2.02)	(-2.13)	(-2.06)	(-2.12)	(-0.57)	(-1.13)	(-0.63)	(-0.71)
ROA	-1.87	-2.46	-1.55	-1.82	3.03**	3.88***	2.94**	3.01**	3.21***	3.05***	3.12***	3.22***
	(-1.05)	(-1.32)	(-0.89)	(-1.04)	(2.54)	(3.26)	(2.49)	(2.53)	(3.47)	(3.31)	(3.41)	(3.49)
growth	4.55***	4.16***	4.48***	4.80***	-0.19	-0.32	-0.20	-0.16	-0.02	0.01	-0.00	-0.00
	(6.04)	(5.28)	(5.85)	(6.39)	(-0.38)	(-0.64)	(-0.40)	(-0.32)	(-0.04)	(0.02)	(-0.01)	(-0.00)
capex	3.37***	3.68***	3.01***	3.12***	0.86**	0.68	0.85**	0.81**	0.05	0.12	-0.01	0.02
	(4.69)	(4.94)	(4.28)	(4.52)	(2.13)	(1.63)	(2.11)	(2.01)	(0.15)	(0.34)	(-0.02)	(0.05)
export	1.70***	1.93***	2.03***	1.67***	0.25	0.22	0.22	0.21	-0.31	-0.44	-0.39	-0.33
	(2.73)	(2.98)	(3.21)	(2.78)	(0.62)	(0.52)	(0.53)	(0.52)	(-0.86)	(-1.22)	(-1.08)	(-0.93)
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	25710	25125	25710	25710	26391	25843	26391	26391	26511	25964	26511	26511
Pseudo R^2	63.1%	65.7%	63.1%	61.9%	6.8%	6.8%	7.1%	6.6%	4.5%	4.6%	4.4%	4.3%
Chi-Square	579.8	594.2	580.1	568.8	127.5	122.4	131.9	122.6	136.2	136.4	132.0	130.1
Prob > Chi2	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Table 5: Ex Ante Determinants of M&A against IPOs

Logistic models are estimated on the likelihood that a private firm will be acquired by a public firm (Panel A) or a private firm (Panel C) rather than go public on London Stock Exchange from 1993 to 2005. Comparable results are exhibited on the likelihood that a private firm will be acquired by a public firm (Panel B) or a private firm (Panel D) rather than staying private, respectively. Only independent companies are included. The data for the IPO and acquired companies are measured one year before their IPOs or acquisitions. The variables are defined in Appendix 1. Eight industry dummies are used but not reported. T statistics are in parenthesis. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Panel A: M&A (public) vs IPO				Panel B: M&A (public) vs Private			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**
pct_major			64.12**				4.42	
			(2.52)				(1.30)	
pct_block	1.03	2.26		2.19*	-0.14	-0.75*		-0.63**
	(0.70)	(1.42)		(1.70)	(-0.37)	(-1.92)		(-2.05)
logno_block		-0.59				0.41**		
		(-0.85)				(2.56)		
family				-0.04				-0.05
				(-0.05)				(-0.31)
pct_mgr_l	-15.42				7.45*			
	(-1.15)				(1.78)			
pct_mgr_m	1.11				-0.81			
	(0.24)				(-0.57)			
pct_mgr_h	2.91				-0.82			
	(1.03)				(-1.53)			
major*TA			-3.74**				-0.33	
			(-2.46)				(-1.52)	
VC	-2.08**	-1.98**	-2.44**	-2.33***	0.83***	0.75**	0.87***	1.01***
	(-2.27)	(-2.24)	(-2.41)	(-2.63)	(2.60)	(2.30)	(2.82)	(3.29)
multi_class	4.54**	3.98	4.31**	5.16**	0.71***	0.60**	0.70***	0.75***
	(2.22)	(1.34)	(2.07)	(2.33)	(2.74)	(2.14)	(2.70)	(2.90)
QuiScore	0.00	-0.01	-0.01	0.00	-0.02***	-0.02***	-0.02***	-0.02***
	(0.19)	(-0.27)	(-0.40)	(0.06)	(-3.19)	(-3.62)	(-3.27)	(-3.20)
big4		-0.71	-0.78			0.41**	0.43**	
		(-0.90)	(-0.93)			(2.08)	(2.27)	
logTA	-1.09***	-0.92**	0.59	-1.06***	0.08	0.03	0.20	0.06
	(-3.15)	(-2.57)	(0.94)	(-3.10)	(0.99)	(0.39)	(1.47)	(0.81)
logAge	0.84**	1.23**	0.90**	0.84**	-0.43***	-0.41***	-0.42***	-0.43***
	(2.01)	(2.45)	(2.08)	(2.07)	(-3.62)	(-3.39)	(-3.56)	(-3.66)
leverage	-0.84	-2.17	-1.05	-1.25	-0.01	-0.14	-0.01	-0.03
	(-0.43)	(-1.16)	(-0.52)	(-0.69)	(-0.02)	(-0.25)	(-0.03)	(-0.05)
year_MTB	-1.72	-1.90*	-1.81*	-1.88*	-0.39**	-0.42**	-0.39**	-0.40**
	(-1.52)	(-1.81)	(-1.71)	(-1.83)	(-2.02)	(-2.13)	(-2.06)	(-2.12)
ROA	1.25	2.40	2.34	2.44	3.03**	3.88***	2.94**	3.01**
	(0.39)	(0.74)	(0.69)	(0.78)	(2.54)	(3.26)	(2.49)	(2.53)
growth	-4.32***	-3.24**	-4.22**	-4.03***	-0.19	-0.32	-0.20	-0.16
	(-2.80)	(-2.12)	(-2.55)	(-2.78)	(-0.38)	(-0.64)	(-0.40)	(-0.32)
capex	-3.06*	-2.87*	-2.12	-3.16**	0.86**	0.68	0.85**	0.81**
	(-1.91)	(-1.79)	(-1.32)	(-2.01)	(2.13)	(1.63)	(2.11)	(2.01)
export	-2.23	-1.84	-3.37**	-2.07	0.25	0.22	0.22	0.21
	(-1.42)	(-1.13)	(-2.12)	(-1.38)	(0.62)	(0.52)	(0.53)	(0.52)
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	202	196	202	202	26391	25843	26391	26391
Pseudo R^2	71.8%	72.1%	74.3%	70.8%	6.8%	6.8%	7.1%	6.6%
Chi-Square	181.2	177.5	187.3	178.5	127.5	122.4	131.9	122.6
Prob > Chi2	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Table 5 (Cont'd): Ex Ante Determinants of M&A against IPOs

	Panel C: M&A (private) vs IPO				Panel D: M&A (private) vs Private			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**
pct_major			79.03***				2.06	
			(3.07)				(0.79)	
pct_block	-0.65	1.99		0.85	-0.38	-1.04***		-0.70***
	(-0.42)	(1.30)		(0.75)	(-1.25)	(-3.88)		(-2.98)
logno_block		-2.75***				0.12		
		(-2.82)				(1.03)		
family				0.54				0.31**
				(0.73)				(2.18)
pct_mgr_l	-16.43				6.58*			
	(-1.04)				(1.90)			
pct_mgr_m	-0.14				0.04			
	(-0.03)				(0.03)			
pct_mgr_h	6.10**				-0.44			
	(1.97)				(-1.10)			
major*TA			-4.51***				-0.18	
			(-2.98)				(-1.06)	
VC	-1.80**	-1.95**	-2.66**	-2.20**	0.94***	0.91***	0.93***	1.08***
	(-1.99)	(-2.01)	(-2.46)	(-2.51)	(3.63)	(3.60)	(3.73)	(4.37)
multi_class	4.29*	5.81	5.90	4.90	0.40*	0.49**	0.42*	0.43*
	(1.67)	(1.10)	(1.46)	(1.45)	(1.82)	(2.23)	(1.88)	(1.95)
QuiScore	0.00	0.00	0.01	0.00	-0.01***	-0.01***	-0.01***	-0.01***
	(0.24)	(0.20)	(0.47)	(0.21)	(-3.60)	(-3.46)	(-3.63)	(-3.64)
big4		0.23	-0.35			0.31**	0.31**	
		(0.25)	(-0.42)			(2.06)	(2.11)	
logTA	-1.34***	-1.70***	0.56	-1.27***	0.11*	0.04	0.14	0.09
	(-3.84)	(-3.70)	(0.91)	(-3.94)	(1.81)	(0.61)	(1.32)	(1.60)
logAge	1.22***	2.01***	1.06**	1.28***	-0.29***	-0.30***	-0.27***	-0.29***
	(3.06)	(3.46)	(2.53)	(3.18)	(-3.29)	(-3.40)	(-3.09)	(-3.38)
leverage	0.10	-2.17	-0.92	-0.81	0.58	0.63	0.60	0.57
	(0.06)	(-1.10)	(-0.44)	(-0.48)	(1.47)	(1.60)	(1.52)	(1.45)
year_MTB	-2.23**	-3.55***	-2.89**	-2.21**	-0.08	-0.17	-0.09	-0.10
	(-2.28)	(-2.78)	(-2.49)	(-2.45)	(-0.57)	(-1.13)	(-0.63)	(-0.71)
ROA	0.71	2.10	0.85	1.39	3.21***	3.05***	3.12***	3.22***
	(0.21)	(0.52)	(0.21)	(0.44)	(3.47)	(3.31)	(3.41)	(3.49)
growth	-5.32***	-5.38***	-4.83***	-4.68***	-0.02	0.01	-0.00	-0.00
	(-3.38)	(-2.98)	(-2.95)	(-3.39)	(-0.04)	(0.02)	(-0.01)	(-0.00)
capex	-3.63**	-4.79***	-4.53***	-4.22***	0.05	0.12	-0.01	0.02
	(-2.48)	(-2.77)	(-2.72)	(-2.97)	(0.15)	(0.34)	(-0.02)	(0.05)
export	-0.79	-1.34	-2.58	-0.80	-0.31	-0.44	-0.39	-0.33
	(-0.53)	(-0.76)	(-1.49)	(-0.58)	(-0.86)	(-1.22)	(-1.08)	(-0.93)
industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	308	303	308	308	26511	25964	26511	26511
Pseudo R^2	76.2%	79.5%	79.1%	74.4%	4.5%	4.6%	4.4%	4.3%
Chi-Square	240.0	246.2	248.9	234.2	136.2	136.4	132.0	130.1
Prob > Chi2	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Appendix 1: Variable Definitions

The variables used in the empirical tests in this paper are defined below. Panel A gives the definitions of the accounting variables, and Panel B gives the definitions of the ownership variables. The accounting variables are in GBP.

Panel A: Accounting Variables

logTA	= natural log of inflation-adjusted total assets
ROA	= earnings before interest and tax / total assets
growth	= annualized sales growth rate
logAge	= natural log of the number of years at the statement date since the date of incorporation
capex	= (capital expenditure + financial investments) / tangible assets
leverage	= long-term debts/total capital Note: total capital = book value of equity + book value of debts
QuiScore	= the credit rating score by a credit rating company Qui Credit Assessment It ranges from 0 to 100 with higher scores standing for higher credit.
big4	= 1 if the auditor is among the Big 4 accounting firms and 0 otherwise
industry_MTB	= the median market-to-book ratio of the industry that a firm belongs to
year_MTB	= the median market-to-book ratio of the industry of a specific year
cash_deficit	= (capital expenditure + acquisitions and disposals + dividend - EBITDA) / TA
div_payer	= 1 if the company pays dividend and 0 otherwise
export	= export / sales
industry1 (agriculture, forestry, and fishing)	= 1 if 2-digit US SIC is between 1 and 9 inclusive and 0 otherwise
industry2 (mining)	= 1 if 2-digit US SIC is between 10 and 14 inclusive and 0 otherwise
industry3 (construction)	= 1 if 2-digit US SIC is between 15 and 17 inclusive and 0 otherwise
industry4 (manufacturing)	= 1 if 2-digit US SIC is between 20 and 39 inclusive and 0 otherwise
industry5 (transportation)	= 1 if 2-digit US SIC is between 40 and 49 inclusive and 0 otherwise
industry6 (wholesale)	= 1 if 2-digit US SIC is between 50 and 51 inclusive and 0 otherwise
industry7 (retail)	= 1 if 2-digit US SIC is between 52 and 59 inclusive and 0 otherwise
industry8 (services)	= 1 if 2-digit US SIC is between 70 and 89 inclusive and 0 otherwise

Panel B: Ownership Variables

pct_all	= percentage of shares of all recognized shareholders
pct_mgr	= percentage of shares held by managers
pct_mgr_l	= percentage of shares held by managers at the low range (0-0.1)
pct_mgr_m	= percentage of shares held by managers at the middle range (0.1-0.4)
pct_mgr_h	= percentage of shares held by managers at the high range (0.4-1)
pct_fam	= percentage of shares held by individuals or a family
pct_major	= percentage of shares held by the shareholder with the largest shareholding and where the stake is no less than 10% of the total share of the company
pct_block	= percentage of shares held by the shareholders with at least 10% of the total shares
logno_block	= log(number of shareholders with at least 10% of the total shares)
VC	= 1 if the ownership of venture capital or private equity is greater than 20% of the total shares or the company name matches the VC list, and 0 otherwise
family	= 1 if the largest shareholder is an individual or family and its ownership is greater than 20% of the total shares, and 0 otherwise
multi_class	= 1 if there are more than one classes of shares, and 0 otherwise

Appendix 2: Testable Hypotheses and Predictions

Theory	Model	Predicted signs of proxies
IPO vs. Private		
H1. Private Benefits of Control	Demsetz & Lehn (1985), Jensen & Meckling (1976), Burkart, et al (2003), Holmstrom and Tirole (1993), Ehrhardt and Nowak (2003), Johnson, et al. (2000), Pagano and Roell (1998)	Low level of managerial ownership, pct_mgr_l (+) High level of managerial ownership, pct_mgr_h (-) Family controlled companies, family (-) Closely controlled companies, pct_major (-) Companies with multi-class shares, multi_class (-) Companies audited by Big Four CPA firms, big4 (+).
H2. Exit	Mello & Parsons (2000), Black & Gilson (1998), Brau, et al (2003), Zingales (1995a)	Companies with larger majority, pct_major (+) Companies with block ownership, pct_block (+) Companies backed by venture capital or private equity, VC (+)
H3. Liquidity	Amihud and Mendelson (1988)	Large firms with large controlling shareholders, major*TA (+)
H4. Diversification	Chemmanur & Fulghieri (1999), Pagano (1993), Leland & Pyle (1977)	Credit rating, QuiScore (-) Number of block shareholders, logno_block (-)
H5. **M&A vs. Private**	Zingales (1995a)	Closely controlled companies, pct_major (?) Family controlled companies, family (+) Companies with multi-class shares, multi_class (+) Number of block shareholders, logno_block (-) Managerial ownership, pct_mgr (-) Companies backed by venture capital or private equity, VC (+)
H6. **M&A vs. IPO**	Gompers (1996), Black & Gilson (1998)	Companies with larger majority, pct_major (+) Number of block shareholders, logno_block (-) Family controlled companies, family (+) Companies with multi-class shares, multi_class (+) Managerial ownership, pct_mgr (+) Large firms with large controlling shareholders, major*TA (-)

Appendix 3: Correlations among Ownership Variables

The following table shows Pearson correlations and p-values (in italic) among the ownership variables. The sample is the eligible sample used in this paper, i.e., all the private companies going public in the U.K. or those satisfying the listing requirements but remaining private. The variables are defined in Appendix 1. The mean, standard deviation and number of observations are in the last three rows. The sample period is from 1992 to 2005.

	pct_major	pct_block	logno_block	VC	multi_class	family	pct_mgr	pct_mgr_l	pct_mgr_m	pct_mgr_h
pct_major	1	0.55	-0.79	-0.02	-0.1	-0.42	-0.41	-0.59	-0.52	-0.33
	-	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
pct_block	0.55	1	-0.07	-0.03	-0.07	-0.15	0	-0.26	-0.18	0.07
	<.0001	-	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
logno_ block	-0.79	-0.07	1	0.03	0.09	0.43	0.48	0.56	0.54	0.44
	<.0001	*<.0001*	-	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
VC	-0.02	-0.03	0.03	1	0.05	-0.08	-0.06	-0.02	-0.04	-0.07
	<.0001	*<.0001*	*<.0001*	-	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
multi_class	-0.1	-0.07	0.09	0.05	1	0	0.01	0.04	0.02	-0.01
	<.0001	*<.0001*	*<.0001*	*<.0001*	-	*0.6611*	*0.3318*	*<.0001*	*<.0001*	*<.0001*
family	-0.42	-0.15	0.43	-0.08	0	1	0.84	0.83	0.88	0.83
	<.0001	*<.0001*	*<.0001*	*<.0001*	*0.6611*	-	*<.0001*	*<.0001*	*<.0001*	*<.0001*
pct_mgr	-0.41	0	0.48	-0.06	0.01	0.84	1	0.9	0.91	0.97
	<.0001	*<.0001*	*<.0001*	*<.0001*	*0.3318*	*<.0001*	-	*<.0001*	*<.0001*	*<.0001*
pct_mgr_l	-0.59	-0.26	0.56	-0.02	0.04	0.83	0.9	1	0.95	0.82
	<.0001	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	-	*<.0001*	*<.0001*
pct_mgr_m	-0.52	-0.18	0.54	-0.04	0.02	0.88	0.91	0.95	1	0.9
	<.0001	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	-	*<.0001*
pct_mgr_h	-0.33	0.07	0.44	-0.07	-0.01	0.83	0.97	0.82	0.9	1
	<.0001	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	-
Mean	0.72	0.89	0.39	0.01	0.04	0.54	0.47	0.06	0.17	0.25
Std Dev	0.29	0.2	0.5	0.09	0.19	0.5	0.44	0.05	0.15	0.27
No Obs.	121,860	121,860	120,204	328,737	153,759	121,860	121,860	121,860	121,860	121,860