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## Research on Capital Structure and Financing Decision: Evidence from the UK

### SUN, JI

# Research on Capital Structure and Financing Decision:

# Evidence from the UK

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# Abstract

This thesis focuses on whether the decisions of firms' external financing activities are influenced by ownership structure, market timing, or public media in the UK context. Chapter 2 examines the effect of ownership on firm capital structure by using a universal sample of UK firms over the period 1998–2009. The empirical results show that the relation between managerial share ownership (MSO) and leverage level is non-monotonic. This study further investigates the effect of ownership on firm financial issuance activities. The finding suggests that firms with higher MSO are more likely to choose equity issues instead of bonds, supporting the theory that managers have more incentive to avoid the bankruptcy risk associated with a bond issue. Further, this study finds a hot (cold) stock market valuation strengthens (weakens) this positive effect of higher MSO on the likelihood of equity issue.

Chapter 3 analyzes the role of ownership characteristics in a firm's choice of seasoned equity offering (SEO) methods, offer price discount, and market reactions to SEO announcements. This chapter examines UK firms' choices of seasoned equity issue methods, particularly the differences between rights offers (ROs), placings (PLs), open offers (OOs), and combinations of placing and open offer (PLOOs). This study finds that ownership-concentrated firms prefer rights or open offers to placings, supporting the argument that large shareholders favour right-preserving issues as the SEO method to maintain benefits of control. Consistent with the managerial entrenchment hypothesis, the results indicate that firms with high managerial ownership are more likely to choose placing as the

SEO method. This study also suggests that firms with lower institutional ownership are more likely to conduct placing to improve monitoring.

Chapter 4 investigates the role of the news media in SEOs in the UK market. The results show that issuers with positive (negative) media news are likely to price SEO shares higher (lower) and have higher (lower) announcement returns. This finding supports the argument that the media has impact on stock price through affecting investor expectations. Moreover, this study finds that issuers with greater pre-SEO media coverage are likely to have a more negative market response to the announcement, which strongly supports Merton's investor recognition model.

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# Chapter 1 Introduction

The importance of capital structure policy has received increasing attention from financial economists, since extensive empirical evidence has shown that the management of capital structure has a significant effect on firm value. A firm's capital structure is determined by its financing decisions. To maximize firm value, the capital structure should be managed through correct corporate financing decision. The financing decision has two components: first is to decide how much funds the firm need, which is based on firm's investment decision. Firm will suffer the risk if funds are insufficient or mismanaged (Shleifer and Vishny, 1997, Aghion and Tirole, 1997). Second is to choose financing source, debt or equity. The incorrect ratio of debt to equity can results in financing distress and even bankruptcy (Friend and Lang, 1988; Mishra and McConaughy, 1999).

Given the importance of capital structure, several theories have been proposed to explain the reasoning behind firms' financing decision, such as trade-off theory and pecking order theory. However, there has been much evidence that suggests a firm's financing decisions are inconsistent with either trade-off theory or pecking order theory. For example, trade-off theory predicts that firms immediately react to the changes in market value of equity, and thus they would choose various financing method to optimize its leverage. However, many studies find that firms are very slow to adjust their capital structure to its target leverage level (e.g., Hovakimian et al. 2001; Fama and French, 2002; Leary and Roberts, 2005). This

finding suggests that capital structure is persistent over long period, in which firms do not have optimal capital structure. Moreover, Fama and French (2002) find that small, young and high-growth firms prefer to issue equity rather than debt, while pecking order theory propose that firms choose debt over equity. These studies suggest that trade-off theory and pecking order theory do not completely explain all firm behaviour as they make financing decision.

To fill this gap, this study focuses on whether the decisions of firms' financing activities are influenced by ownership structure, market timing, or public media. Therefore, the main research questions in this study are: what are the determinants of firms' financing decision? What are the influences of controlling shareholders and institutional shareholders on firms' external financing activity? Do market conditions influence firms' making external financing decision? Are public media in affecting firms' equity issuance? This study attempts to address these research questions in Chapter 2, 3 and 4.

Chapter 2 analyzes the role of ownership structure in firm capital structure and external financing activities. Based on the presence of two main types of agency conflicts, this chapter proposes that ownership structure is a determinant of firms' financing decisions. The first agency cost, between large shareholders and minority shareholders, indicates that a firm's financing decisions are more likely to be controlled by large, undiversified shareholders, such as large shareholders on the board of directors. To maintain their empire-building activities or voting power in a firm, large shareholders are less likely to increase debt levels, which could

increase the probability of financial distress and bankruptcy risk (Mishra and McConaughy, 1999). This view implies that ownership concentration negatively affects a firm's debt ratio. However, Jensen and Meckling (1976) suggest that diversified shareholders are more interested in undertaking risky projects with high expected returns at the expense of bondholder wealth. Diversified shareholders benefit from any excess returns if the investment is successful, whereas debt holders bear the cost of failure. Consequently, the cost of debt is much higher. This view implies ownership-diversified firms are unwilling to issue debt.

The second agency cost arises from the separation of ownership and management. Managers desire to maximize their own wealth at the expense of shareholder interests (Jensen and Meckling, 1976). This suggests that firms' financing decisions may not be optimal from a shareholder's perspective. Accordingly, managerial incentives play a significant role in a firm's capital structure decisions. Shleifer and Vishny (1986, 1997) find that high external ownership may mitigate this conflict of interest, since large external shareholders have strong incentives to monitor and discipline management. The monitoring hypothesis assumes that a firm will make financing decisions that maximize the general shareholder's interests. This hypothesis predicts that monitors can influence a firm's choices when issuing securities.

Chapter 2 also investigates the effect of market valuation on firms' financing choices between bond and equity. According to market timing theory, this Chapter proposes that market valuation has an impact on firms' financing decisions. The

basic idea of market timing theory is that managers are market timers, so they issue equity when investors are overoptimistic about the value of new shares (Barker and Wurgler, 2002). Consequently, shares are issued at a higher price. Under this theory, managers consider market valuation before they make capital structure decisions. When the stock market is more favourable, investors are overoptimistic and stock prices are overvalued simultaneously. Managers may be aware that a hot stock market presents good opportunities to raise capital by issuing equity. Thus, initial public offerings (IPOs) and seasoned equity offerings (SEOs) are clustered in this period (e.g. Loughran and Ritter, 1995; Graham and Harvey, 2001). However, when the stock market is unfavourable, managers will defer equity issuance or choose debt financing.

To test these hypotheses, Chapter 2 uses three major variables to indicate firm ownership structure: ownership concentration, managerial share ownership, and institutional ownership. We use ownership concentration as a proxy for large shareholder incentives, measured as the sum of the percentage of shares owned by block holders whose ownership is over 3% of a firm's equity. The managerial share ownership variable is a proxy for managerial incentives, defined as the percentage of a firm's shares owned by all executive and non-executive directors. To capture external monitoring effects, this Chapter applies institutional ownership, measured as the proportion of equity owned by institutional investors whose ownership is over 3% of a firm's equity.

Moreover, Chapter 2 identifies the current market valuation by three-month

moving averages of scaled equity issue volume (Helwege and Liang, 2004). Scaled issue volume is the aggregate equity issue volume divided by the month-end value of outstanding equity for the London Stock Exchange (LSE). This Chapter classifies the market as hot or cold, where a hot (cold) market is a period during which the current market's valuation is in the top (bottom) 30% of the entire research period.

In Chapter 2, the data on issue characteristics are obtained from Thomson One Banker. The data on ownership information include the equity ownership of all block holders, managers, and large institutional investors and was manually collected from Thomson One Banker. Due to the limited ownership information Thomson One Banker provided, the research period is restricted to 12 years, from 1998 to 2009. This study examines the large sample of UK firms listed on the LSE and their security financing issuance. The final sample consists of 3,244 yearly firm observations and 348 bond and 378 equity issuances.

Chapter 2 provides several empirical results to prove the interaction between firms' financing decisions and their ownership structures. First, it is shown that ownership structure is an important determinant of a firm's leverage level. The results report that the relation between managerial share ownership and leverage is non-monotonic. At lower levels of managerial share ownership, the relation with leverage is positive, supporting interest alignment theory (Jensen and Meckling, 1976). This finding can be interpreted as higher managerial ownership plays an important role in aligning the interests of managers and shareholders, leading to a

lower cost of debt. In such situations, firms are likely to raise more debt, resulting in higher leverage levels. However, this relation turns to be negative when the MSO is relatively high, which is in line with the managerial entrenchment hypothesis (Fama and Jensen, 1983). Managers are more likely to protect their private interests from the risk of bankruptcy associated with a high leverage ratio. Moreover, it is shown that high institutional ownership can increase a firm's leverage ratio. This finding indicates that concentrated institutional ownership effectively lowers the cost of debt through strong external monitoring (Bhojraj and Sengupta, 2003).

Second, Chapter 2 finds that ownership structure has a significant effect on firms' financing issuance choices between bond and equity, as well as on the issue size. The results imply that ownership-concentrated firms are more likely to choose equity over bonds to avoid the potential increase in financial distress risk. However, large shareholders have an incentive to maintain their control benefits, so they should press firms to decrease the issue size of equity. The results also suggest that firms with a higher managerial ownership prefer issuing equity over bonds, while firms with a lower managerial ownership prefer issuing bonds over equity. This finding is also consistent with the managerial entrenchment and interest alignment theories. Moreover, firms with higher institutional ownership prefer issuing equity rather than bonds, although they can make larger bond issues because of lower bond yields (Bhojraj and Sengupta, 2003).

Third, the findings in Chapter 2 also strongly support the market timing

hypothesis. This Chapter studies the role of current market valuation in the choice of financing decisions. The results suggest that favourable stock market conditions dramatically increase the probability of equity issue, while an unfavourable stock market increases the probability of bond issue. Moreover, Chapter 2 links stock market valuations to the relation between MSO and a firm's external financing activities. It is shown that a hot market increases the probability that firms with high managerial ownership choose equity over bond issues. At the same time, a cold market decreases the probability of firms with low MSO issuing equity over bonds. In summary, the magnitudes of these effects suggest that firms make external financing decisions according to current market conditions.

Subsequently, this thesis lays emphasis on UK firms' Seasoned Equity Offering. Chapter 3 focuses on the role of ownership characteristics in a firm's choice of SEO methods, offer price discount, and market reactions to SEO announcements. This Chapter empirically examines UK firms' choices of seasoned equity issue methods. This Chapter addresses the lack of empirical research on four SEO methods, particularly the difference between a rights offer (RO), a placing (PL), an open offer (OO), and a combination of placing and open offer (PLOO).

Chapter 3 examines the seasoned equity issuance of firms traded on the London Stock Exchange during 1998–2010. The research sample consists of 653 UK SEOs, categorized into four subsamples by issue type: 156 ROs, 291 PLs, 54 OOs, and 152 PLOOs. We note that the average proceeds amount of PLs equals half that raised by ROs (US$91.21 million versus US$211.79 million, respectively).

The mean offer discount on a rights offer is the highest among the four issue types, while the lowest price discount occurs in placing (18.71% versus 7.83%, respectively).

Chapter 3 also tests the market reaction to SEO announcements by different issue types. Cumulative abnormal returns (CARs) are generated for the two-day [-1, 0] and three-day [-1, 1] event windows, where the SEO announcement takes place on event day 0. The estimated period is set covering [-260, -61] prior to announcement day. It is shown that market reactions to announcements of PLs or PLOOs are significantly positive, while the average announcement return of ROs is significantly negative. This result is consistent with previous studies on UK SEOs (e.g., Slovin et al., 2000; Barnes and Walker, 2006; Capstaff and Fletcher, 2011),

In Chapter 3, the empirical evidence further shows that ownership structure has an impact on a firm's choice of SEO methods. The results indicate that firms with higher OC are more likely to choose right-preserving issues over placings. This finding strongly supports the controlling hypothesis that large shareholders in firms have a strong incentive to maintain their voting rights and control. If a firm chooses a right-preserving issue, the ownership of large shareholders is preserved and large shareholders do not experience any reduction in control benefits. This Chapter also find that ownership-concentrated firms prefer ROs rather than OOs in the right-preserving issue. This is because a rights offer is more convenient for existing shareholders compared to an open offer. In a rights offer, existing

shareholders who does not wish to increase their holdings can sell their preemptive rights in the secondary market. However, this is not allowed in open offer.

The results in Chapter 3 also suggest the firms with a higher managerial ownership are more likely to choose placing as an equity issue method. This supports the argument that the usage of placings can solidify managerial control (Barclay et al., 2007). Entrenched managers are willing to place new shares with friendly investors who are relatively passive. Furthermore, this finding also shows that institutional ownership is negatively related to the probability of a firm choosing placing as the SEO method. It is generally believed that high institutional ownership is associated with effective monitoring (e.g. Zhang, 2004, Cronqvist and Fahlenbrach, 2009, Chemmanur, 2009). A firm's motivation in choosing placing is to improve monitoring. If a firm already has monitors, it is less likely to use placing.

Chapter 3 also analyzes the impact of ownership on UK SEO price setting and announcement returns. The results show that firms with high ownership concentration are likely to set the offer price at a higher discount. This finding can be explained as a high ownership concentration is associated with lower market liquidity; thus investors should require a larger discount to compensate their investments in illiquid stock (Intintoli and Kahle, 2010). The results also indicate that managerial ownership has a significant positive effect on offer discounts. This Chapter also finds some support for the monitoring hypothesis. Since institutional

holdings verify firm quality, firms with high institutional ownership are more likely to price share at a lower discount, which is consistent with the prediction of the monitoring hypothesis. Moreover, the results indicate that SEO announcement returns will be decreased by higher managerial ownership because of increased agency problems and adverse selection cost. Investors believe that entrenched managers have an incentive to issue equity when their firms are overvalued. The positive relation between institutional ownership and SEO announcement returns is also consistent with the monitoring hypothesis.

Notably, the results of Chapter 3 also show that announcement returns are higher (lower) when SEOs are conducted in a hot (cold) market. This evidence suggests that firms are likely to issue equity when the indirect cost is relatively low. Further, it is shown that firms are likely to choose ROs when the stock market is favourable, while they prefer placing in cold conditions. Since placing is value certification, overvalued (undervalued) firms are less (more) likely to choose placing as the issue method. This result implies that SEOs in a hot market are likely to be motivated by firm overvaluation.

In Chapter 4, this study emphasizes the role of financial media in SEO offer discounts and market reactions to SEO announcements. Based on investor recognition theory (Merton, 1987), this Chapter proposes that the public media can play a role in firms' equity issue decisions. This theory suggests that investors tend to hold stock they are more familiar with and therefore their portfolios will be underdiversified. Consequently, stocks with lower investor recognition must

offer higher returns to compensate investors for an imperfectly diversified portfolio. This suggests that investor recognition can influence stock price. Recent research uses the public media as a proxy for investor recognition and finds that the media have a significant effect on equity issuance and asset prices (e.g., Cook et al., 2006; Tetlock, 2007; Tetlock et al., 2008). By focusing on IPOs, Cook et al. (2006) argue that pre-offer media can promote IPO firms to retail investors by creating pre-offer publicity, resulting in upward offer price revisions. Liu et al. (2009) also find that more financial news is associated with a higher initial IPO return and better long-term performance. Given the similarity of IPO and SEO practice, this study expects a similar association between SEOs and the media.

Chapter 4 examines a sample of 415 UK seasoned equity issuances from 1996 to 2010. To examine the role of the media in the UK SEO market, all firm-related news in the pre-SEO period are collected from the LexisNexis UK database, which comprises the articles published in the Financial Times (London), The Times (London), the Guardian (London), the Daily Mirror, and the Sunday Mirror.

Chapter 4 constructs two media variables: media coverage and media sentiment. Media coverage is obtained by simply counting the number of pre-SEO media news articles for each issuer. Media coverage is measured as the summative amount of news articles covering the SEO issuer. Second, this Chapter constructs media sentiment according to the linguistic content of media articles, by counting positive words and negative words in each news article. Media sentiment is measured as the ratio of positive words minus negative words to the total words

for each article and then finding the average ratio of all related articles in the pre-SEO period. Positive and negative words are identified with the word list proposed by Loughran and McDonald (2011).

In Chapter 4, the results show a significant correlation between pre-SEO media coverage and the SEO offer price discount. The results suggest that high media coverage can decrease UK SEO offer discounts. This Chapter also finds that issuers covered by less negative media are likely to price offers higher. The findings contribute to the literature by adding new insight into the effect of media content in the case of SEOs. The results also imply that the media could be a potential determinant of SEO price setting. This Chapter further explores the pre-SEO media's influence on announcement returns. The empirical evidence suggests that SEOs with greater pre-SEO media coverage attract less favourable market responses. This is consistent with the investor recognition hypothesis (Merton, 1987). Investors continue to pay attention to the stocks with which they are more familiar. When issuers with high investor attention make SEO announcements, they will reach more investors. However, investors already realize that an SEO is a signal for overvalued equities (Asquith and Mullins, 1986; Masulis and Korwar, 1986). In this case, most existing and potential investors believe that issuers are opportunistic and revise the firm's valuation downward. As a consequence, the SEO announcement return will decrease. Moreover, in line with the studies on media content (e.g., Tetlock, 2007; Tetlock et al., 2008; Garcia, 2012), the finding supports the argument that media content can distort stock price by inducing behaviourally biased trading. Positive media news can induce

sentimental investors to be over-optimistic, resulting in higher announcement returns.

This thesis extends the knowledge of what influences firms when they are making external financing decisions in the following ways. First, this study investigates whether ownership structure affects firm financing choice. This thesis investigates whether and to what degree ownership concentration, managerial ownership, and institutional ownership affect choice between bond and equity financing. Subsequently, this study focuses on the effect of ownership on seasoned equity financing. In addition to rights offers and placing, this study considers open offers and open offer combined with placing as an alternative issue method for UK firm. By using multinomial logistic regressions, this study analyzes what factors influence UK firm decisions among these four SEO issue methods: rights offers, placings, open offers, and open offers with placing.

Second, this study investigates whether market valuation is a determinant of firm financial decisions. This study examines whether market valuations have a great influence on the choice between bond and equity financing, which provides new insights into the market timing theory. This study shows that firms are more likely to choose equity issue over bond, when stock market condition is favourable. By focusing on the equity issuance, this study further analyzes whether different market valuation affects the choice of SEO issue method, which provides greater insights into manager's market timing behaviour. This study finds that issuers are most likely to perform rights offers when the market is hot, but they prefer

placings in a cold market. Given that placing is a proxy for value certification, this finding implies that managers tend to sell the overvalued equity by using rights offers in the hot market.

Third, this study stress the importance of the role of the media in seasoned equity issuance, since recent studies focus on the role of the media in initial public offerings (e.g., Bhattacharya et al., 2009; Cook et al., 2006; Liu et al. 2009). The evidence provides new insights and explanations for the determinants of SEO discounts and announcement returns. Finally, this study adds new evidence to the UK SEO literature by covering the extended period from January 1996 to December 2010. Testing a longer period can ensure the results are persistent across time.

# Chapter 2 Ownership, Capital Structure, and Stock Market Valuation

## 2.1 Introduction

Capital structure is of great importance to firm performance and stakeholder interests. Although recent work emphasizes the primary determinants of capital structure (Gaud et al., 2007; Frank and Goyal, 2009), the findings on the effect of

ownership structure on capital structure have been limited and inconsistent. Anderson et al. (2003) find insider ownership is positively related to a firm's debt level. Using different data sources and sample periods, Moh'd et al. (1995) and Nam et al. (2003) draw the opposite conclusion. Brailsford et al. (2002) and Florackis and Ozkan (2009) report a nonlinear relation between managerial ownership and leverage. Such mixed findings lead us to clarify the relation between ownership structure and capital structure.

The UK provides an interesting context to study such a relation. Most large shareholders of UK firms are financial institutions. They are capable of monitoring the corporate governance of firms and constraining the choice of strategies. However, Franks et al. (2001) point out that UK institutional investors do not take an active role in monitoring management. Thus UK managers are posited to be more entrenched, regardless of whether firms have an optimal leverage ratio. Under this scenario, the cost of debt financing should be higher than in other market places. As reported by the Financial Times, however, the UK economy has expanded via increased junk bond sales in recent years and UK firms are more likely to possess high leverage ratios due to the junk bond problem.[1]

The literature on ownership structure is characterized by discussions of the agency problem, highlighting two types of agency conflict. The first arises from the

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[1] Bondt and Ibáñez (2005) find that high-yield corporate bonds in the UK grew faster than in the euro area since 1998, benefitting from a more market-based financial structure.

separation of ownership and management. Managers desire to pursue their own wealth, even where their behaviour may not act in the firm's best interests. Managerial ownership is an effective mechanism for resolving this agency problem by aligning the interests of managers and shareholders (Jensen and Meckling, 1976). [2] However, an increase in insider ownership can be associated with managerial entrenchment, where managers exert their increased managerial opportunism at the expense of outsider investors (Demsetz, 1983; Fama and Jensen, 1983). When managers own a large proportion of firm shares, the low market liquidity and high undiversified holding risk will increase the cost of capital. According to this view, managerial incentives play a significant role in a firm's capital structure. To address this issue, this study uses managerial share ownership as a proxy for managerial incentive (e.g., Morck et al., 1988; Moh'd et al., 1998; Lundstrum, 2009).

Moreover, this study constructs institutional ownership to capture external monitoring effects. Shleifer and Vishny (1986, 1997) find that high external ownership can also mitigate this standard owner–manager conflict of interests, since large external shareholders have strong incentives to monitor and discipline management. Aghion and Tirole (1997) show that higher outside ownership leads to more intense managerial monitoring. Although monitoring has a cost, large stakeholders can gain internal benefits from it (Grossman and Hart, 1986). The

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[2] Jensen and Meckling (1976) argue that managers may consume perquisites, expropriate shareholder wealth, or engage in other non–value-maximizing behaviour.

active monitoring mechanism effectively limits the scale of managerial opportunism and solves the problem of managers adjusting firm debt levels to serve their own interests; hence the cost of debt financing is reduced. This implies that firms with higher outside ownership prefer debt issue on account of its lower debt cost. In contrast, widely dispersed outside ownership can weaken the monitoring mechanism because of the free rider problem[3] (Grossman and Hart, 1980).

The presence of a secondary conflict between large undiversified shareholders and diversified shareholders means that the effect of ownership concentration on capital structure is far from conclusive (Rajan and Zingales, 1995). Firm capital structure decision making is more likely to be controlled by undiversified shareholders, such as large shareholders on the board of directors. To keep non-diversifiable portfolio risk low, large shareholders avoid increasing debt levels, which can increase the probability of financial distress and bankruptcy (Friend and Lang, 1988; Mishra and McConaughy, 1999). This suggests ownership concentration inversely affects a firm's debt ratio. On the other hand, diversified shareholders are more interested in undertaking risky projects with high expected returns at the expense of bondholder wealth (Jensen and Meckling, 1976). Therefore diversified shareholders obtain any excess returns if the investment is successful while debt holders bear the cost of failure. In this situation the cost of debt is much higher. Hence

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[3] The literature recognizes that individual investors who own a small fraction of firm shares expect others to take responsibility for monitoring, because their cost of monitoring is generally much higher than their return (Grossman and Hart, 1982).

ownership-diversified firms are also cautious about issuing debt. To conduct this analysis, this Chapter employs ownership concentration as a proxy for large shareholder incentives.

Through resolving the agency conflicts above, this study suggests that proper management of a firm's ownership structure can have a significant effect on its leverage level, echoing the argument of Friend and Lang (1988), Brailsford et al. (2002), and Florackis and Ozkan (2009), where ownership structure in corporate governance is a crucial instrument in alleviating the agency problem. Therefore, the main research question is: what are the influence of controlling shareholders and institutional shareholders on firms' capital structure? Given that a firm's external financing policies using security issue methods and proceeds can directly affect its debt ratio, this study uses UK bond and equity issues to extend the literature by shedding light on the role of ownership in firms' external financing decisions. This study is in line with the recent work by Lundstrum (2009), who investigates 111 financing offerings of US firms, suggesting a positive relation between managerial share ownership and a decline in leverage from before issuance to afterward.

In addition, the literature also suggests that market valuation plays an important role in determining firm capital structure. Baker and Wurgler (2002) propose that firms raise external funds when their cost of equity is temporarily low and that past market timing decisions have long-lasting impacts on leverage. Welch (2004) further concludes that the fluctuation of a firm's own stock price is a primary determinant of capital structure changes. In a hot market, a firm's stock price is

likely to increase because of the rising demand of individual investors, naturally leading to a lower debt level. Furthermore, Pedersen and Thomsen (2000) consider stock market valuation a probable determinant of firm ownership structure. In the case of a hot market, the demand for stocks rises and firm equity is overvalued such that managers prefer to issue equity and sell shares, resulting in diffuse managerial ownership (Pedersen and Thomsen, 2000). In contrast, if firm stock prices are undervalued, managers tend to repurchase shares to increase managerial ownership. Briefly, firms are more likely to issue equity under hot stock market conditions, causing a decreasing in both the leverage ratio and firm managerial ownership. Hence this Chapter examines whether the relation between managerial share ownership and a firm's external financing decision varies under different stock market valuation conditions.

Despite this field of research's growing importance and interest therein, only limited literature directly links firm ownership with capital structure decisions. Therefore this study makes several contributions to the literature. First, this chapter is similar in sprit to the studies of Brailsford et al. (2002) and Florackis and Ozkan (2009). However, in addition to managerial share ownership, this Chapter considers institutional ownership and ownership concentration as additional ownership structure variables in the analysis, which leads to a more precise measurement of ownership ratio. Second, for the first time in the literature, by using updates to the data set, this study investigates whether and to what degree ownership concentration, managerial share ownership, or institutional ownership affects firms' external financing decisions. Third, we take explicit account of

different market valuations (hot/cold) to interact with firm ownership and assess their impact on external financing decisions. Market conditions have a great influence on not only the timing of a new issuance but also its relation with managerial share ownership.

The remainder of this chapter proceeds as follows. Section 2.2 provides the theoretical background. Section 2.3 sets forth the arguments underlying the main hypotheses by reviewing the literature. Section 2.4 presents the sample selection and summary statistics. Section 2.5 discusses the main findings from the empirical analysis. Finally, Section 6 concludes the chapter.

## 2.2 Theoretical Background and Related Literature

This section focus on the most relevant theories related to capital structure and ownership structure.

### 2.2.1 Capital structure theories

Theories of corporate capital structure have received increasing attention from financial economists since the publication of Modigliani and Miller (1958). The literature develops three major theories of capital structure to explain how firms manage their capital structure: trade-off theory, pecking order theory, and market

timing theory.

**2.2.1.1 Trade-off theory**

Trade-off theory refers to firms choosing how much equity and debt to use in their capital structure as determined by trade-offs between the costs and benefits of debt and those of equity. This theory suggests that firms are willing to carry more debt as long as its benefits are higher than its costs. The benefits of debt involve the interest tax shields and reduced free cash following agency costs (Jensen, 1986). The major costs of debt include agency conflicts between shareholders and bondholders, potential financial distress, and bankruptcy risk.

Trade-off theory is derived from the theorem of Modigliani and Miller (1958), who propose that a firm's value is irrelevant to the cost of capital or capital structure in a perfect market. In a second seminal paper, Modigliani and Miller (1963) consider corporate taxes in their analysis and draw a different conclusion about capital structure: They argue that a firm's value increases with the use of debt in its capital structure due to the interest tax shield. In this scenario, firm value is maximized when the firm is financed entirely with debt. Furthermore, Miller (1977) finds that both personal and corporate taxes can determine an economy-wide leverage ratio. DeAngelo and Masulis (1980) analyze not only the tax shield but also the interest payments of debt. They find that firms use a mix of debt and equity to achieve optimal capital structure ratios. In addition to the trade-off between the tax advantages of debt against its costs of financial distress,

Jensen and Meckling (1976) and Jensen (1986) focus on the agency costs that stem from conflicts of interest between the different stakeholders. The addition of agency costs to trade-off theory suggests that firms manage capital structure by balancing the agency costs of debt versus those of equity.

Unlike a capital structure model in a static setting, Fischer et al. (1989) propose a model of dynamic capital structure choices in the presence of recapitalization costs. The authors find that a firm's optimal leverage ratio can vary. They argue that a firm's actual leverage ratio may therefore deviate from an optimal ratio. Firms continuously readjust their capital structure towards optimal ratios to balance the costs and benefits associated with various levels of leverage. However, responding immediately to capital structure shocks may be suboptimal because of adjustment costs (Leary and Roberts, 2005). Leary and Roberts (2005) argue that if the costs of such adjustments are higher than the benefits, a firm would wait to recapitalize. Their results show that most firms are relatively inactive, making financing decisions once a year, on average.

A number of studies provide empirical evidence to support trade-off theory. For example, Hovakimian et al. (2001) find that firms tend to adjust their leverage ratios towards target ratios when making financing and repurchase decisions. Their study has two main stages: The first stage estimates the target leverage ratio by regressing the observed debt ratio on a series of accounting variables. The second stage uses the difference between a firm's target leverage ratio and its actual ratio as a predictor of whether the firm will issue debt or equity. The results

also suggest that capital structure considerations play an important role when firms repurchase stock rather than raise capital. Moreover, Fama and French (2002) examine the trade-off model and find firm leverage only slowly adjusts to target levels as firms balance the costs of adjustment against the benefits of approaching the target leverage ratio. Consistent with dynamic rebalancing after accounting for adjustment costs, Leary and Roberts (2005) find that firms indeed respond to equity issues and stock price shocks by rebalancing their leverage over the next two to four years.

**2.2.1.2 Pecking Order Theory**

Pecking order theory proposes a hierarchy to a firm's financing decisions. Firms choose internal financing in the first place, which involves the use of profits or retained earnings. If internal financing is insufficient for a new investment, firms will resort to external financing, where risk-free debt should be applied first, then risky debt, and then equity issue as a last choice.

According to pecking order theory, Myers (1984) argues that firms' financing decisions are influenced by adverse selection costs, which arise from the information asymmetry between managers and outside investors. Managers know more about a firm's financial condition and future growth opportunities than outside investors do. The usage of external financing induces managers to make public disclosures about investing opportunities and potential retained earnings. Therefore, internal funds are preferable because of the lower level of asymmetric

information.

Myers and Majluf (1984) add information asymmetry to a signalling model of investment and financing decisions. They argue that outside investors obtain information about firm value from the financing decisions made by managers. Under this assumption, managers act in the best interest of existing shareholders. Debt issuance implies that managers have confidence in future cash flows and their ability to pay the interest on the debt. However, managers issuing equity issue rather than riskless debt signal to outside investors that the managers believe the firms' shares are overvalued. Consequently, investors rationally discount the firm's equity. In this case, the equity is issued only after internal financing and debt capacity has been exhausted.

Several studies find a strong support for pecking order theory. Shyam-Sunder and Myers (1999) propose the pecking order models, in which the external debt financing is driven by the internal financial deficit. They conclude that the pecking order theory has greater time-series explanation power than trade-off theory. Frank and Goyal (2003) further find that the pecking order theory should perform best among small, high-growth firms because these firms are likely to have higher level of information asymmetry, and therefore suffer higher adverse selection cost when issuing securities.

**2.2.1.3 Market timing theory**

Market timing theory suggests that firms time their equity issues, so they issue new equity when shares are perceived to be overvalued and repurchase the shares when the shares are undervalued. As a result, share prices change and security financing decisions have a significant effect on capital structure changes.

Several studies suggest that managers time equity issues to take advantage of periods of high stock prices and investor overoptimism (e.g., Ritter 1991, Bayless and Chaplinsky, 1996; Graham and Harvey, 2001). The 'window of opportunity' hypothesis (Ritter, 1991) suggests that the best time for firms to issue equity is when that equity is overvalued. Managers are assumed to have information about firm fundamental values that investors do not have; therefore they time equity issues to when the market is overoptimistic about stock prices. This hypothesis also suggests that investors are slow to react to information contained in equity issue announcements, leading to underperformance in the long run. Ritter (1991) finds that IPO firms underperform their benchmarks in the long run and that underperformance is more pronounced for hot market IPOs. Similarly, Loughran and Ritter (1995) find that firms issuing either IPOs or SEOs have significantly lower long-run performance than matched non-issuing firms do.

Moreover, Bayless and Chaplinsky (1996) examine whether market timing influences firm SEO decisions. They use the aggregate volume of equity issues to identify periods when market conditions are most favourable or unfavourable for

issue. They define high equity volume periods as hot and low equity volume periods as cold. Their results suggest that the average price reaction to an SEO announcement in a hot market is significantly less negative than at other periods, while that in a cold market is significantly more negative. By focusing on IPOs, Alti (2006) examines whether an IPO in a hot issue market is characterized by a high IPO volume in terms of the number of issuers or a cold issue market. This author further finds that firms tend to increase the amount of their equity issues in hot markets and to minimize it in cold markets.

Based on an extensive survey of 392 CFOs, Graham and Harvey (2001) find that two-thirds of CFOs admit market timing is an important consideration for financing decisions. The respondents said that they would time equity issues when share price had increased dramatically and would conduct debt issues when the interest rates were low. Hovakimian et al. (2001) find that stock price run-ups are a determinant of firm financing decisions. Firms with higher current stock prices are more likely to issue equity than debt and to repurchase debt rather than equity. Baker and Wurgler (2002) propose the external finance weighted historical market-to-book ratio as a market timing measure. They find that firms tend to raise external funds when their cost of equity is temporarily low and that past market timing decisions have a long-lasting impact on leverage. Moreover, Welch (2004) concludes that the fluctuations of a firm's own stock prices are a primary determinant of the debt–equity ratio and that the effect is permanent.

The above findings suggest that market timing has a persistent effect on firm

capital structure. Following the trade-off theory of capital structure, once a firm's capital structure is out of target, the firm will slowly adjust it back to optimal levels (Fama and French, 2002). Leary and Roberts (2005) find that the influence of equity issues on firm leverage completely vanishes within four years. Furthermore, Alti (2006) show evidence of slow rebalancing toward target leverage levels, consistent with dynamic trade-off theory.

## 2.2.2 Ownership structure and Agency Cost

Most of the related literature is involved with agency theory, which is a fundamental theory of ownership structure. The separation of ownership and management (Berle and Means, 1932) is the source of agency costs, mitigating the incentive of managers to improve corporate efficiency. Later, Jensen and Meckling (1976) develop this principle–agent problem further, which becomes well known as agency theory. They advocate that managers desire to maximize their own wealth despite the fact that their behaviour may damage shareholder interest. Since the 1980s, ownership structure has been broadly accepted as an effective approach to mitigate agency costs and improve firm performance. There are three typical agency conflicts in ownership structure, including conflicts of interest between shareholders and managers, shareholders and creditors, large shareholders and minority investors.

According to the agency conflicts between shareholders and managers, managers' incentives have attracted lots of academic attention. With low levels of managerial

share ownership, managers are willing to consume perquisites and expropriate shareholder interest, even displaying inefficient management, raising agency costs. Jensen and Meckling (1976) present the alignment effect in their seminal paper and imply that a high level of managerial ownership can help closely align the interests of managers and shareholders and then improve firm value. However, a high level of managerial ownership means managers hold a large number of stakes. They may have not only enough voting power to ensure their empire building in the firm, but also more discretion from outside monitoring. Consistent with this reasoning, Demsetz (1983) and Fama and Jensen (1983) explore managerial entrenchment theory. They claim that high insider share ownership may result in managers obtaining effective control over firms and then pursuing their own interests by expropriating firm resources, ultimately reducing firm value.

Moreover, Shleifer and Vishny (1986, 1997) find that the shareholders with high ownership concentration have strong incentives to monitor and discipline management, resulting in decreased agency costs, which is well known as the efficient monitoring hypothesis. Grossman and Hart (1986) support this argument and indicate that large stakeholders are able to gain the internal benefit from their monitoring. In contrast, wide ownership may weaken the monitoring mechanism due to the free rider problem. In a corporation with dispersed ownership, each shareholder hopes others will do the monitoring because if one shareholder does, all shareholders benefit. However, the cost of supervision is generally much higher than an individual shareholder's return, so that no shareholder has an initiative to watch over management (Grossman et al., 1982). Moreover, shareholders who hold

only a small fraction of a firm may invest in many firms to minimize their portfolio risk. They are more concerned with the dividend payments instead of the firms' future.

Ownership structure could lead to another agency conflicts between shareholders and creditors. In regard to firms with high ownership concentration, large shareholders are usually risk averse, so they may avoid undertaking investments with high risk premiums, resulting in an under-investment problem (Demsetz and Lehn, 1985). However, Jensen and Meckling (1976) demonstrate that diversified shareholders have greater interest in undertaking a risky project with a high expected return at the expense of bondholder wealth. The reason is that diversified shareholders are able to obtain the excess returns if the investment is successful; however, creditors bear the cost of failure. Thus the creditors will ask for higher debt costs if they realize this adverse situation.

Since the 1990s, conflicts of interest between controlling shareholders and minority shareholders have become main stream in the literature. Due to the divergence between voting rights and cash flow rights, controlling shareholders desire to consume and take advantage of corporate resources, but minority shareholders cannot share with them (Morcket al., 1988; Holderness, 2003). Furthermore, larger shareholders potentially expropriate minority investors in firms with high concentrated ownership (La Porta et al., 1998; Denis and McConnel, 2003). Johnson et al. (2000) put forward the term tunnelling to describe observe how controlling shareholders extract private benefit from firm assets and resources.

Theories regarding agency problems and ownership structure follow two streams: ownership concentration and managerial ownership. Morck et al. (1988) suggest that ownership concentration has a positive effect on firm performance in the 0–5% board ownership range because of the efficiency monitoring hypothesis; the effect may exist beyond 25%, but it turns negative at the 5–25% level of ownership concentration, consistent with the hypothesis of minority shareholder expropriation. While much evidence [4]shows that agency conflicts in ownership structure have an impact on firm performance, only a handful of studies look into the issue of how ownership structure affects firm capital structure by considering agency problems.

### 2.2.3 Ownership Structure and Capital Structure

The literature mentions the impact of ownership on leverage and obtains mixed results: positive, negative, and no impact. The disagreement is due to differences in research period, target market, estimating technique, and data selection bias. Moreover, some studies illustrate that the impact of ownership on capital structure is non-monotonic over time, changing with a firms' growth opportunities and assets.

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[4] Some studies find that the relation between ownership structure on firm performance is non-monotonic (e.g. Morck et al., 1988; Anderson and Reeb, 2003). Thomsen and Pedersen (2000) find a positive relation, while Cronqvist and Nilsson (2003) report that this relationship is significant negative.

The majority of the evidence indicates a positive impact (Grossman and Hart, 1986; Anderson et.al., 2003). Firms with high ownership concentration should exhibit greater financial leverage, since controlling shareholders maintain their voting control for a given level of equity investment and thus avoid hostile takeovers. Debt financing is a good method to restrict managerial entrenchment and overcome the risk of being a takeover target. Furthermore, it can relieve agency conflicts between large shareholders and bondholders due to the long-term commitment on debt. In general, family-owned firms bear lower cost of debt financing, so they hold greater debt in their capital structure (Anderson et al., 2003). Managers of firms with dispersed ownership prefer equity to debt because they desire to avoid the pressure of paying interest on the debt. Moreover, leverage is a monitoring mechanism used by creditors to limit controlling shareholder power. However, according to agency costs and dividend-paying behaviour, Rozeff (1982) argues that dividend payments are part of a firm's monitoring methods, in which firms tend to pay out more in dividends when insiders own lower proportions of shares. Moreover, shareholders in firms with dispersed ownership tend to diversify their risk to invest in multiple firms. This finding can explain why firms are concerned about risky projects, since their creditors' interests can be harmed (Jensen and Meckling, 1976). Due to this situation, debt holders will demand higher interest on debt to compensate their potential loss. As a result, the cost of debt financing increasingly reduces debt in capital structure.

The explanation for the negative impact of ownership on leverage is built on the

theory that a high leverage ratio exposes a firm to higher bankruptcy risk and, following this, managers should lower debt in capital structure (Friend and Lang, 1988; Nam et al., 2003). Additionally, firms are easier to finance when their large shareholders are financial institutions, such as banks, but financial institutions have more incentives to restrain a firm's investments because they are usually risk averse (Elyasiani et al. 2010).

Some scholars argue that ownership structure is an exogenous variable that influences firm performance and leverage. Demsetz (1983) believes that ownership structure is not only affected by firm- and industry-specific characteristics, such as firm size and product uniqueness, but also closely linked with large shareholders' wealth. Holderness (2003) notes the causation between ownership and performance and finds that performance appears to be a determinant of ownership structure, but not vice versa.

Investor type is also relevant to leverage in the context of the agency problem. When controlling shareholders have professional knowledge and financial and business experience, the quality of monitoring may be better. Ownership identities are traditionally categorized into different types – such as government ownership, founding family ownership, institutional ownership, and foreign ownership – in which family ownership and institutional ownership are studied most (e.g. Anderson et al.,2003; Cronqvist and Fahlenbrach, 2009)).

Institutional investors' role in corporate governance is known as institutional

shareholder activism, which can effectively solve the agency problem of dispersed ownership (Black, 1992). Pension funds, mutual funds, insurance companies, and banks are typical institutional shareholders and are capable of monitoring and affecting investment strategies to their benefit. However, certain characteristics of institutional shareholders make them take on an inactive role in monitoring management. Major institutional investors invest in various firms to diversify risk, so they may just be interested in short-term firm performance, even pushing firms to undertake risky investments with high returns (Black, 1992; Tufano, 1996). Additionally, due to the stock market's liquidity, it is easy for institutional investors to sell and buy large shares that influence corporate efficiency. On the other hand, institutional shareholders are regulated to prevent them from holding significant percentages of shares in any one firm and consequently affect management passively (Black, 1992; Black and Coffee, 1994). To attract outside institutions, firms may issue more debt to adopt investment strategies consistent with their targets.

In most family firms, the largest shareholder or blockholders are involved in management as executives and directors. Therefore family owners are in a better position to monitor corporate governance, overcoming the agency problem between managers and shareholders (Jensen and Meckling, 1976). Since owners in a family tend to maintain voting and control power, they may make better investment decisions with longer horizons. However, family-owned firms are less transparent to the public, so stock prices are more sensitive to information asymmetry than non-family firms. On account of the higher cost of equity and

greater asymmetric information, family firms prefer issue debt over equity. These statements can be summarized as family firms have higher debt levels than non-family firms.

## 2.3 Hypothesis Development

Due to the different incentives of various investors, this study develops the hypothesis regarding the effect of ownership concentration, managerial share ownership, and institutional ownership on a firm's capital structure decisions,.

The results obtained in the literature thus far with respect to the impact of managerial ownership on firm debt ratio are mixed. Grossman and Hart (1986) developed a model to formulate the costs and benefits of firm ownership structures, implying that managerial ownership is positively related to leverage. Subsequent the finding of Anderson et al. (2003) supports this proposition. Several theories from the literature underpin such a positive relation. First, to maintain the level of voting control and influence for a given level of equity, large undiversified shareholders prefer debt over equity financing. Second, a higher level of debt can reduce the probability of a firm becoming a takeover target (Stulz, 1988; Harris and Raviv, 1991). Third, according to the signalling hypothesis, managers may implement higher leverage to convince investors of their ability to generate sufficient earnings to repay their debt (Leland and Pyle, 1977).

However, some authors find that the effect is negative, that is, managers prefer to keep a firm's debt ratio low, alleviate the pressure that accompanies interest payment commitments (Jensen, 1986), and reduce bankruptcy risk and protect their undiversified human capital (Fama, 1980). In this context, it is implied that that risk-averse managers are more reluctant to raise a firm's debt level.

Moreover, Brailsford et al. (2002) and Florackis and Ozkan (2009) report a non-monotonic relation between managerial share ownership and a firm's leverage level. The finding can be interpreted by two competing theories: interest alignment theory (Jensen and Meckling, 1976) and managerial entrenchment theory (Fama and Jensen, 1983). At low levels of managerial ownership, an increase therein promotes the alignment of management and shareholder interests. In this case, managers prefer a higher level of debt since the use of more debt can efficiently alleviate agency conflicts. However, when managerial share ownership surpasses a certain point, managers have more discretion to adjust debt levels for their own interests (Brailsford et al., 2002). To avoid the constraints from debt financing and bankruptcy risk, managers have more incentive to lower the debt level at high levels of managerial ownership.

According to the active monitoring hypothesis, institutional investors can reduce the owner—manager agency conflict by closely monitoring firm performance (Jensen, 1986; Shleifer and Vishny, 1986). Higher debt levels bring about more monitoring (Jensen and Meckling, 1976). The benefits of monitoring cash flow motivate external investors to bear the cost of active monitoring. Compared with

individual investors, institutional investors are better at monitoring due to their access to various sources of information and their large stakes in firms. A high degree of institutional ownership causes managers to follow corporate strategies in the interest of the shareholder. Institutional investors can share the benefits from proportionate cash flow dividends and the appreciation of firm shares with all shareholders. Furthermore, institutional investors can obtain private benefits from other providers of capital (small shareholders and creditors), such as the ability to trade firm shares below market price, access to private information, and the ability to influence firm policies (Grossman and Hart,1980; Barclay and Warner,1993).

Ownership concentration measures the power of shareholders to influence managers (Thomsen and Pedersen, 2000). High ownership concentration fundamentally constrains manager discretion through the distribution of voting power and control among shareholders. To avoid sharing or losing control, firms with concentrated ownership prefer debt over equity, which leads to high levels of debt. However, as proposed, the risk of bankruptcy cannot be underestimated. The interests of large shareholders are highly linked to firm operations and force firms to hold a certain degree of debt.

*Hypothesis 1a: The relation between managerial share ownership and firm leverage is nonlinear. This relation is positive at lower levels of managerial share ownership and negative at higher levels.*

*Hypothesis 1b: Institutional ownership is positively related to firm leverage*

***Hypothesis 1c:*** *The relation between ownership concentration and firm leverage is nonlinear. This relation is positive at lower levels of ownership concentration and negative at higher levels.*

A considerable body of research on the above aspects of managerial perspective suggests that a firm's financing decisions are influenced by its managers' objectives, desires, and preferences. In particular, the structure of equity ownership is an important proxy for manager's incentives (Jensen and Meckling, 1976; Fama and Jensen, 1983). Using the underlying agency theory and following the survey evidence to date (Grossman and Hart, 1986; Mishra and McConaughy, 1999; Anderson et al., 2003), this study expects a strong linkage between managerial ownership and firm securities financing decisions.

According to pecking order theory, adverse selection leads managers to consider internal funds as a first choice, followed by debt issuance, with equity issuance as a last resort (Myers and Majluf, 1984). Shareholders who hold a significant proportion of a firm's share may favour debt over equity issuance since they intend to maintain their voting and control powers. Furthermore, debt financing is an efficient mechanism to assist creditors in disciplining the controlling shareholder and in imposing constraints via covenants (Shleifer and Vishny, 1986, 1997). In general, family-owned firms prefer debt issuance due to their long-term commitment, which means that they usually enjoy lower costs of debt financing (Anderson et al., 2003).

Nevertheless, it is expected that managers are likely to issue equity based on several conjectures. On the one hand, the regular interest on debt reduces the probability of management overinvestment. On the other hand, managers are unwilling to accept monitoring by outside investors and creditors. Moreover, a high debt level is associated with a corresponding high risk of financial distress and bankruptcy. Since managers bear the non-diversifiable employment risk linked to a firm's survival, bankruptcy or financial distress will result in their demotion or loss of employment (Friend and Lang, 1988; Brailsford et al., 2002). This risk aversion argument can also be applied to institutional and other shareholders. When a firm goes into bankruptcy and liquidation, shareholders have only a residual claim on its assets and cash flow, after creditors, employees, suppliers, and taxes are remunerated. Since large shareholders hold high equity stakes, their wealth is closely tied to firm survival. Naturally, they are more averse to raising a firm's debt level (Friend and Lang, 1988; Mishra and McConaughy, 1999). In other words, when loss of control is less of a concern, firms are more likely to fund their growth with equity issuances.

Hence, this study predicts the following hypotheses.

***Hypothesis 2a****: A firm with high managerial ownership is likely to choose equity over bond financing to secure external funds.*

***Hypothesis 2b:*** *A firm with high institutional ownership is likely to choose equity over bond financing to secure external funds.*

***Hypothesis 2c:*** *A firm with high ownership concentration is likely to choose equity over bond financing to secure external funds.*

In practice, equity offerings are often related to the state of the market, that is, whether it is hot or cold (Ibbotson and Jaffe, 1975). Loughran et al. (1994) document that the issuing firm takes advantage of a window of opportunity known as a hot market, in which it schedules new issues to maximize issue proceeds simultaneously. The literature offers many explanations for this hot market phenomenon. Allen and Faulhaber (1989) built a signal model based on the theory of asymmetric information, predicting that a hot market induces a large number of IPO from high-quality firms. This is because the offer price is less affected by the costs of asymmetric information in hot markets. Subsequently, Bayless and Chaplinsky (1996) developed the SEO model, which also predicts that better-quality firms are more likely to undertake equity issues when information asymmetry is low, as in a hot market. As a result, the cost of equity is reduced in a hot market. Furthermore, Ljungqvist et al. (2006) provide another explanation based on investor sentiment, that a favourable market valuation generates wild bullishness from some investors about the prospects of issuing firms. Investors are more willing to purchase new shares during hot markets (Helwege and Liang, 2004).

In line with market timing theory, Frank and Goyal (2009) also claim that issuing firms and underwriters investigate current market valuation before issuing a new security. When the stock market is hot, investors are overoptimistic and consequently stock prices are overvalued (Baker and Wurgler, 2002). This increased market value directly generates lower leverage levels for firms. Managers may perceive a hot stock market as a good opportunity to issue new shares because of the lower cost of equity, further reducing firm debt ratios. If the stock market is cold, managers are willing to defer or withdraw the equity issue. Hence, this study further investigates whether the impact of managerial ownership on financing decisions of debt or equity vary in accordance with stock market valuation.

Thus, this Chapter further proposes the following hypotheses.

*Hypothesis 3:* Hot (cold) stock market valuation strengthens (weakens) the positive effect of managerial share ownership on the likelihood of equity issue.

## 2.4 Data and Descriptive Statistics

This section presents the data sources and descriptive statistics for the firm and issue variables. It also shows how this study constructs the measures of ownership, leverage, and market valuation and provides variable definitions and a discussion of their evolution over the sample period.

## 2.4.1 Data Source and Sample Selection

This study obtains the accounting and market data for the sample period 1998–2009 from the DataStream. The information on ownership and security issuances are derived from Thomson One Banker. The ownership data include the following terms for each firm: the equity ownership of all block holders (the %O/S[5] > 3%), managers, and large institutional investors. the sample exclude observations where the total percentage of block holders exceeds 100%.

To examine the impact of ownership on firm leverage, the sample consists of all UK firms listed on the London Stock Exchange. Due to the limited ownership information Thomson One Banker provided, the research period is restricted to 12 years, from 1998 to 2009. The ownership dataset represents all of a firm's shareholder information for each year, including investor type, investment style, and %O/S. the sample eliminates firms in the financial industry (Standard Industrial Classification, or SIC, codes 6000–6999) and utilities (SIC codes 4900–4949) from the sample because the leverage ratio of financials is significantly different from that of non-financials and the utility industry operates under a regulatory regime, with limited scope for corporate control activity. This study thus reduces the sample to 275 firms. Additionally, this Chapter excludes

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[5] Thomson One Banker defines % O/S as the percentage of total shares outstanding that a shareholder holds of a firm, calculated by dividing the investor's share positions in the firm by the firm's most recent publicly available total number of shares outstanding.

firm observations with incomplete data. The final overall sample consists of 3,244

yearly firm observations from the period 1998–2009.

The second motivation behind this chapter is to investigate how ownership affects

securities financing decisions under different stock market valuations. Therefore

we examine all UK firm bond and equity issuances reported by Thomson One

Banker over the 12-year period. This study focuses on relatively large offerings,

whose value exceeds US$1 million. After excluding financials and utilities,   the

initial sample size is reduced to 1,372 bond offerings and 5,038 equity offerings.

Since the analysis focuses on listed firms, IPO-related equity issuances are

removed from the database. This study match ownership and accounting data with

offering activity and then drop the missing issue observations. Thus the final

sample comprises 348 bond and 378 equity issuances.

## 2.4.2 Variable Definitions

The empirical analysis uses ownership concentration (thereafter OC) as one of the

proxies for firm ownership structure. Demsetz and Lehn (1985) measure OC as the

fraction owned by the five, 10, or 20 largest shareholders. Earle et al. (2005)

explore alternative measures to capture several important interactions between

large shareholders and patterns of concentration that may influence the effect of OC

on leverage. With this in mind, this study employs the sum of the percentage of

shares owned by block holders to measure OC,[6] where a block holder in a UK firm

is defined as one owning over 3% of the firm's equity.

Managerial share ownership (MSO) is defined as the percentage of a firm's

outstanding shares owned by all executive and non-executive directors.[7] This

measure indicates whether the management party on the board has an incentive to

involve firm operations. Besides the squared MSO term, this study also uses

piecewise linear regression to explore a nonlinear relation between MSO and

leverage ratio. According to the studies of Morck et al. (1988) and Lundstrum

(2009), this chapter classify MSO into three different levels: Low MSO (0–5%)

indicates a firm whose MSO level is lower than 5%, median MSO (5–25%)

indicates a firm whose MSO is in the range 5–25%, and high MSO (>25%)

indicates a firm whose MSO is over 25%.

In recent years, institutional investors have become the largest shareholders in UK

firms. This chapter applies institutional OC as the proportion of corporate equity

owned by institutional investors that own at least 3% of the firm's outstanding

shares held by all institutional investors. The role of institutional investors in

[6] For robustness tests, this study employs three other variables to measure OC: C1, defined as the

percentage of shares held by the largest shareholder; C2, the sum of the holdings of the largest and

second largest shareholders; and C3, the sum of the holdings of the three largest shareholders. The

results based on these distinct OC variables also support this chapter's findings.

[7] This study does not separate non-executive ownership from managerial share ownership because

of the limitation of data source.

corporate governance is known as institutional shareholder activism, which can effectively reduce the cost of debt financing. Typical institutional shareholders – pension funds, mutual funds, insurance companies, and banks – have the capacity to monitor and affect investment strategies for their own benefit. Bhojraj and Sengupta (2003) find that firms with concentrated institutional ownership have lower yields and higher ratings on their new bond issues. Furthermore, Cronqvist and Fahlenbrach (2009) find that different large shareholders have distinct impacts on leverage. Klein and Zur (2009) document that hedge fund targets usually make continuous payouts in the form of interest payments to creditors to reduce the free cash flow problem. Hence their leverage level is higher.[8] On the other hand, Black and Coffee (1994) argue that regulations restrict institutional shareholders from holding significant percentages of shares in any one firm, which passively affects management.

In reference to the most frequently used concept of a hot market (e.g., Helwege and Liang, 2004), this author identifies the current market by ranking three-month moving averages of scaled equity issue volumes. Scaled issue volume is the aggregate equity issue volume divided by the month-end value of outstanding equity for the London Stock Exchange. Here Hot (Cold) is a dummy variable equal to one when the valuation of current market is in the top (bottom) 30% of the entire research period and zero otherwise.

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[8] This study emphasizes the relation between institutional ownership and a firm's capital structure, so it does not consider the type of institutional investor.

This study defines a firm's debt level, leverage, as the book value of debt over the market value (Fama and French, 2002). Book debt is total assets minus book equity. We define book equity as total assets minus total liabilities plus investment tax credits minus preferred stock. We define market value as total liabilities minus investment credits plus preferred stock and market equity, where market equity is the number of common shares outstanding times the stock price.

In addition to ownership structure, other factors affect the firm's leverage ratio and external financing policies and can be grouped by firm-specific characteristics such as profitability, market-to-book ratio, tangibility, sales growth, dividend, non-debt tax shield, and credit rating. The impact of each factor on capital structure decisions is indicated in the relevant literature (Anderson et al., 2003; Frank and Goyal, 2009). This study calculates all of these variables, including ownership variables, as of the end of the preceding calendar year.

This study defines firm profitability as earnings before interest, taxes, depreciation, and amortization over total assets. The literature has long argued about the effect of profitability on leverage (Harris and Raviv, 1991; Rajan and Zingales, 1995; Booth et al., 2001) but the findings are mixed. More profitable firms have lower costs of bankruptcy and financial distress. Moreover, the use of debt as a monitoring mechanism is more likely to solve the free cash flow problem (Jensen, 1986). Thus profitable firms use more debt financing. However, profitable firms probably have more internal funding to invest in new projects. Conversely, less

profitable firms need to resort to debt financing. This negative impact of profitability on a firm's debt level can be countered by the presence of substantial investments (Booth et al., 2001).

This study defines a firm's market-to-book ratio as the ratio of total assets minus the book value of equity plus the market value of equity to the book value of assets. The market-to-book ratio is the most widely used indicator to predict firm growth opportunities. It can also capture the change of leverage brought about by equity mispricing. According to asymmetric information theory, overvaluation causes firms to issue equity but, when stock prices are undervalued, firms purchase shares or issue debt. Therefore firms with higher market-to-book ratios should have lower debt levels via equity issuance.

Sales growth is measured by the change in the logarithm of total assets, which is considered in the literature to be an alternative measure of firm growth. Typically, low-growth firms can carry more debt in their capital structure because they are more secure and stable, incurring lower agency costs of debt. On the other hand, high-growth firms may face a more intense debt overhang problem, as described by Jensen and Meckling (1976) and Myers (1977). In other words, the effect of sales growth on leverage is positive. This impact is more significant in small, family-owned firms, where there is a fear of losing control to the bank.

The tangibility of firm assets is closely associated with agency costs of debt and the cost of financial distress (Myers, 1977; Booth et al., 2001), which is the ratio

of tangible assets to total assets. Firms with more tangible assets are better able to secure debt since these assets can be used as collateral (Jensen and Meckling, 1976). In the case of liquidation, tangible assets are worth more than intangible assets. Hence bondholders generally demand a lower risk premium. This indicates that asset tangibility has a positive effect on leverage (Titman and Wessels, 1988).

Based on agency theory and market efficiency theory, a firm's dividend payout ratio is considered an important factor adversely impacting leverage (Rozeff, 1982). However, Chang and Rhee (1990) argue that firms with high dividend payout ratios are likely to issue more debt than those with low payout ratios. The authors reason that this is due to the effective capital gain tax rate being lower than the dividend tax rate. In the present study, this Chapter uses the term dividend to express a common dividend payout.

Non-debt tax shield is an inverse proxy for the effect of tax on the leverage ratio (Frank and Goyal, 2009). Trade-off theory posits that firms increase the amount of debt to take advantage of greater interest tax shields (Haugen and Senbet, 1987). DeAngelo and Masulis (1980) demonstrate that non-debt tax deductions can be used to describe the tax shield benefits of debt. Titman and Wessels (1988) further employ the depreciation ratio, net operating loss carry-forwards, and investment tax credits as proxies for non-debt tax shields. The regressions define the non-debt tax shield as the ratio of depreciation to total assets.

A firm's credit rating is a dummy variable that takes the value of one if the firm's Standard & Poor's bond rating is above A- and zero if not. This variable is shown only in the regressions of bond issuance because it can be downloaded only to accompany bond issuers from Thomson One Banker. As posited in pecking order theory, firms with higher ratings have fewer adverse selection problems because credit rating involves a process of information revelation by the rating agency. Firms with higher reputation in the debt market may issue more corporate bonds (Denis and Mihov, 2003). Sufi (2009) further explores Standard & Poor's credit ratings as a new measure of information asymmetry.

### 2.4.3 Descriptive Statistics

Table 2.1 presents descriptive statistics of firm characteristics for 275 UK firms for the period 1998–2009, including OC, MSO, institutional ownership, leverage, profitability, firm size, market-to-book ratio, sales growth, tangibility, dividend payout ratio, and non-debt tax shield. The average level of MSO is 11.7%, which is very similar to the average level of 10.65% reported by Brailsford et al. (2002). The fact that the median value of MSO is smaller than the average value (4.7% versus 11.7%, respectively) indicates that firms with lower managerial ownership dominate the UK market. Due to the definition of OC and institutional ownership, institutional investors hold a significant proportion of the total shares of firms in UK firms, 31.9% on average, whereas the average value of OC is 36.1%. It is notable that the mean level of leverage is 37.1% in the sample of all UK firms. This ratio is considerably higher than that in other countries, for example, 24.85% in US

firms over the period 1965–2001 (Flannery and Rangan, 2006) and 30.3% in Brazil and 34.7% in Mexico for the period 1985–1991 (Booth et al., 2001). Profitability and firm size have mean values of 13.5% and 13.11, respectively. This Chapter uses the market-to-book ratio and sales growth as proxies for growth opportunity, with average values of 1.906 and 6.2%, respectively. Panel B shows that most firm observations have low MSO (51.78% of all firms' observations) in the full sample.

*(Please insert Table 2.1 here)*

In Table 2.2, this study uses firm accounting data matched to security issuance and obtain 348 bond issues and 378 equity issues. Panel A shows issuance distribution by year. Bond and equity issues, as highly important financing decisions, raise US$99.45 billion and US$40.22 billion, respectively. It is shown  that the total number of equity issues is greater than the number of bond issues, while the sum of the proceeds of bond issues is significantly greater than that of equity issues.

In panel B, this study also merges bond issues and equity issues with ownership and accounting variables. This table presents descriptive statistics by issue type and highlights the differences across bond and equity issuers. As shown in panel B, the average amount of bond issues is around US$285.8 million, while it is around US$106.3 million for equity issues. Bond issues, on average, raise more funds than equity issues did. On average, bond issuers have lower OC than equity issuers (22.5% versus 34.3%, respectively). On average, MSOs are 4.0% and 12.8% for bond and equity issuers, respectively, and this difference is significant at the 1% level. This

result is consistent with the managerial entrenchment hypothesis and means a higher-MSO firm perfers equity issue over bond to retain a lower level of debt. The average value of institutional ownership for bond issuers is 20.2%, while it is 31.5% for equity issuers. These findings suggest that firms that have higher OC, MSO, or institutional ownership values rely more on equity than bond financing. Another important observation is that the leverage ratio is much smaller for bond issuers than for equity issuers (39.5% versus 58.8%, respectively). This implies that bond issues are more likely to cluster for a firm with a lower debt level.

Panel B also reports other firm characteristics of bond and equity issues. The profitability of bond issuers is greater than for equity issuers (14.6% versus 13.8%, respectively). On average, bond issuers have a significantly higher average firm size than equity issuers. The sales growth ratio for bond issuers is 4.4% while it is 5.6% for equity issuers. This indicates that equity issuance exhibits greater clustering in high-growth firms, consistent with Frank and Goyal (2009). The average dividend is much higher for bond issuers than for equity issuers (13.8% versus 6.6%, respectively). The average value of the market-to-book ratio and tangibility do not differ between bond and equity issuers.

To address the issue of whether bond and equity issues are associated with different market states, the evidence supports the expectations, that equity issues are more likely to cluster in a favourable market.

*(Please insert Table 2.2 here)*

## 2.5 Empirical Results

This Chapter applies several ordinary least squares models[9] to explore the propositions argued above. The first is a regression for examining how ownership impacts firm leverage. The second model is applied to examine how various levels of MSO affect firm bond–equity choice. Here external financing choice includes not only the likelihood of issuing bonds or equity but also the amount of security insurance proceeds. The third tests whether the effect of MSO on external financing policy changes under different stock market valuations.

Table 2.3 presents the results of four models where the level of leverage is regressed against the ownership measures and other firm characteristics, using the overall sample of UK yearly firm observations. The analysis also includes industry and year dummies to control for industry- and time-specific effects.

As shown in Estimation 1, the coefficient of OC for the leverage ratio is positive and significant at the 1% level, whereas the coefficient of $OC^2$ is negative and significant. This result confirms a non-monotonic relation between leverage and ownership. Firms with concentrated ownership exhibit a negative association with

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[9] This Chapter addresses the potential endogeneity effect of ownership concentration and managerial share ownership on leverage levels by using Hausman's two-stage least squares test. The difference between the two estimations is insignificant. Therefore, this study favours OLS regressions.

the level of debt, while firms with dispersed ownership are positively related to the level of debt. By simple differentiation, the turning point of this relation is 17.8%. That is, the positive relation between ownership and leverage holds up to 17.8%. After the reaching the turning point, the higher the OC, the lower the debt level. This suggests that high-OC firms tend to maintain lower levels of leverage. Normally the voting rights that accompany the ownership of common shares enable shareholders to participate in management either directly or through electing the board of directors, who select the management team. However, a greater debt level is associated with a higher probability of financial distress and bankruptcy risk, which threatens large shareholders' voting and control rights (Mishra and McConaughy, 1999).

Estimations 2 and 3 contain the results of the model in which leverage is regressed on MSO and $MSO^2$, respectively. They reveal a similar pattern as OC in Estimation 1. This result supports the hypothesis that the relation between MSO and leverage is nonlinear. Specially, firms tend to align the interests of managers and shareholders at a lower level of MSO by choosing a higher level of debt. However, when MSO is high, more entrenched corporate managers are likely to pursue their own self-interests, resulting in a lower debt ratio. This finding is consistent with the studies of Brailsford et al. (2002) and Florackis and Ozkan (2009). The turning point is around 33%, that is, higher than OC's turning point, because of the effect of institutional investors and other block shareholders.

Followed the findings in Estimations 2 and 3, MSO is replaced by three piecewise variables, as in Estimation 4 (Morck et al., 1988). Consistent with earlier findings, this study shows a positive and significant relation between MSO and leverage when MSO is lower than 25%. This association turns negative when MSO is over 25%.

This Chapter also examines the effect of institutional ownership on a firm's debt level. As shown in Estimations 3 and 4, the coefficients of the institutional variable are positive and statistically significant. This suggests that firms with higher institutional ownership are prone to hold more debt in their capital structure. Consistent with the argument of Bhojraj and Sengupta (2003), concentrated institutional ownership effectively lowers the cost of debt capital through strong external monitoring. Tufano (1996) provides another potential explanation: Most institutional shareholders invest in a variety of firms to diversify risk. They may thus be interested only in the firm's short-term performance. Hence, to attract outside institutions, firms may raise capital via debt financing to adopt investment strategies that meet institutional investors' requirements.

With regards to other important firm characteristics, the coefficient of profitability is significantly negative. The regression results indicate that profitable firms are less likely to increase their debt level, consistent with pecking order theory (Myers and Majluf, 1984). Moreover, the negative coefficient of the market-to-book ratio suggests that a firm's leverage level is inversely correlated to its equity valuation. As an alternative proxy for firm growth opportunities, sales growth negatively

affects firm debt levels. A survey investigating trade-off theory finds that firm growth increases the cost of financial distress, weakens the free cash flow problem, and exacerbates the agency cost of debt (Frank and Goyal, 2009). Hence firms with more growth opportunities are less likely to raise debt.

The results in Table 2.3 further demonstrate that firms with more tangible assets are more likely to raise debt in their capital structure. This supports such findings in the literature as those of Friend and Lang (1988) and Jensen et al. (1992). The dividend variable has a positive effect on the leverage ratio that is consistent with Chang and Rhee (1990). It is also shown that the coefficient of non-debt tax shield is positive and significant at the 10% level, which is consistent with the argument of Moh'd et al. (1995). These authors regard depreciation as the primary component of the non-debt tax shield and posit that higher depreciation charges represent a higher level of tangibility, which implies a higher collateral value for the firm; thus the capacity for debt rises.

*(Please insert Table 2.3 here)*

Thus far this Chapter has documented that a firm's ownership structure is related to capital structure in a non-monotonic manner. This Chapter proceeds to examine the effect of ownership on a firm's external financing activity according to two aspects: issue type and offer size. Plainly, issuing public debt increases a firm's debt level, while equity issue decreases the leverage ratio. Furthermore, the bigger offer size of security issuance strengthens such effects. However, it is unclear from the extant

literature whether firms' external financing decisions are somewhat subject to their ownership structure. Therefore this study should establish the connection between ownership structure and firms' external financing decisions. Tables 2.4 and 2.5 present the results of regressing ownership on issue choice and offer size by examining 726 issues, a combination of 348 bond and 378 equity issues, over the period 1998–2009.

In Table 2.4 this study uses a binary dependent variable that takes the value of one for equity issues and zero for bond issues. Following the theoretical literature on the function of ownership structure in financing choices, this Chapter uses ownership concentration, managerial ownership, and institutional ownership as a proxy for ownership structure. The models in this table also include the determinants of bond–equity choice that earlier empirical work (Morck et al., 1988; Frank and Goyal, 2007; Frank and Goyal, 2009) views as important.

As reported from Estimation 1 in Table 2.4, OC is positively related to the probability of equity issue. Issuers with concentrated ownership are more likely to choose equity, while bond ownership-dispersed firms are more likely to issue bonds. Table 2.5 reports that OC is positively related to the amount of debt issuance and inversely affects the amount of equity issuance. This suggests that firms with high OC tend to increase the proceeds of bond issue but reduce the proceeds of equity offerings compared with low-OC firms.

Combining the OC results shown in Tables 2.4 and 2.5, this study can explain matters as follows. Since large shareholders hold high equity stakes, their private interests are closely associated with firm survival. Hence large shareholders may prefer equity over debt to avoid the risk of bankruptcy. However, bigger offer sizes of equity financing would weaken their control and decision power. Large shareholders are expected to carry larger bonds. The implication is that the bigger the bond a firm raises, the greater the interest payment, which means the firm has more active monitoring mechanisms in place to reduce the agency conflict between owner and manager, especially in family firms (Morck et al., 1988; Anderson and Reeb, 2003). This result also explains the nonlinear relation between OC and leverage, that is, high-OC firms are more (less) likely to issue equity (bonds) but they tend to decrease (increase) the amount.

Estimation 2 in Table 2.4 shows that the coefficients of MSO are positive and significant at the 1% level. This finding suggests that an increase in MSO level is associated with a higher likelihood of issuers choosing equity over debt. In other words, firms with a lower MSO prefer bonds over equity and the inverse at higher MSO levels. This result supports the interest alignment hypothesis of Jensen and Meckling (1976) and managerial entrenchment theory (Jensen, 1986). Although bond issue can alleviate agency conflicts and the cash flow problem (Jensen and Meckling, 1976), most managers are risk averse to raising debt levels by bond issue, especially those who own a large proportion of firm shares. This is because they tend to reduce non-diversifiable employment risk (Friend and Lang, 1988). Additionally, the obligations associated with bond issue constrain managers'

discretion on a firm's free cash flow, who then adjust debt ratios according to their incentives (Grossman and Hart, 1980; Jensen, 1986).

Moreover, it is shown that the coefficients of MSO in Table 2.5 are not significant, suggesting that the offer size of bond or equity issue is unrelated to managerial share ownership. Associating these findings with those in Table 2.3, this Chapter can summarize them as meaning that lower levels of MSO induce firms to issue bonds instead of equity, leading to increased debt levels. Moreover, firms with higher MSO tend to choose equity financing over bonds, resulting in reduced leverage ratios. This finding is consistent with the results of the association between MSO and leverage level in Table 2.3.

To better investigate the relation between MSO and the choice of financing, this Chapter employs, as in Table 2.3, a piecewise linear specification of MSO in Estimation 3. The results show that the coefficients of MSO (5–25%) are significantly positive; however, the coefficients of the MSO (0–5%) and MSO (>25%) variables are not statistically significant. This suggests that MSO has a significant impact on financing decisions at the 5–25% level but no influence under 5% or over 25%. At this range of MSO, an increase in MSO makes issuers more likely to choose equity over debt. Firms with lower MSO prefer bonds over equity.

The positive and significant coefficient of institutional ownership in Table 2.4 suggests that firms with greater institutional ownership are less likely to issue bonds over equity. This finding can be explained by institutional shareholder risk aversion.

However, Table 2.5 reports that the institutional variable has a strongly positive effect on the amount of bond issuance. This finding suggests that firms with high institutional ownership tend to maximize their bond size. This is because greater institutional ownership leads to lower bond yields and higher ratings on their new bond issue (Bhojraj and Sengupta, 2003). Thus the proceeds of new bonds are greater when the issuer has concentrated institutional ownership.

Another important finding is that the coefficient of current market is positive and significant at the 1% level. This suggests that favourable market conditions increase the probability of equity issue, while an unfavourable market increases the probability of bond issue. This finding supports the previous literature (Allen and Faulhaber, 1989; Bayless and Chaplinsky, 1996), which states that firms decide to raise equity capital under favourable current market conditions. Allen and Faulhaber (1990) argue that a hot market is a sign of a positive shock to a firm's expected profits. Bayless and Chaplinsky (1996) demonstrate that a hot market offers a window of opportunity for seasoned equity issues because the asymmetric information cost and adverse selection cost should be lower then.

In Estimations 4 and 5 in Table 2.4, to investigate the role of current market valuation on the relation between ownership and firms' external finding decisions, this Chapter constructs two binary variables, Hot and Cold, representing hot and cold stock market periods, respectively. Then this study proposes two interaction terms between MSO and stock market valuation in the regressions: MSO*Hot and MSO*Cold. As reported in Estimation 4, the results on the effect of MSO or current

market on financing decisions are also consistent with earlier findings. The coefficient of the interaction term MSO*Hot is positive and statistically significant, implying that a hot market increases the probability that firms with a higher level of managerial ownership choose equity over bond issues. The results of Estimation 5 show that the interaction variable MSO*Cold is significantly positive at the 10% level, which indicates that a cold market reduces the likelihood that firms with a higher level of managerial ownership issue equity over bonds.

Consistent with the descriptive statistics reported in panel B in Table 2.2, other controlling variables also have a significant impact on a firm's external financing choice. The coefficient of leverage suggests that a firm with a higher debt level tends to issue equity instead of bonds. This finding can be explained by a firm's attempt to restructure its capital. The positive probability coefficient indicates that firms with higher retained earnings are more likely to issue equity than bonds. At same time, firms with higher growth opportunity, measured by sales growth, also tend to issue equity over bonds. However, greater tangibility promotes the probability of firms choosing bonds over equity, supporting the findings of Friend and Lang (1988) and Jensen et al. (1992). The dividend coefficient suggests that firms with higher cash dividend payments have more incentive to issue bonds over equity, consistent with pecking order theory (Myers and Majluf, 1984). Finally, the coefficient of non-debt tax shield indicates that firms with higher depreciation charges tend to raise equity capital over public debt. This supports the argument of DeAngelo and Masulis (1980).

In Table 2.5, this Chapter further examines other factors relevant to offer size. The level of debt is negatively related to offer size because the cost of capital rises when a firm carries more debt. The proceeds of bond issuance are inversely correlated with firm profitability, in line with the results of Myers and Majluf (1984), who show that profitable firms lower the proceeds of bond offerings because they can employ internal funds for new investments instead. The market-to-book ratio has a negative effect on the proceeds of bond issues, which implies that managers should time the stock market to issue equity instead of bonds when stock prices are overvalued. However, the effect of sales growth on the size of bond issues is significantly positive, suggesting that sales growth, as another indicator of firm success, is closely correlated with the availability of internal funds.

As posited earlier, the coefficients of tangibility in Estimations 2 and 4 suggest that high-tangibility firms tend to increase the proceeds of bond issues relative to the proceeds of equity offerings. This finding implies that firms with higher levels of tangible assets are expected to have a lower cost of debt because they have more collateral to offer. Consistent with Chang and Rhee (1990), the dividend variable has a positive impact on bond size. A significant positive correlation is found between the non-debt tax shield and the amount of bond issuance, which suggests that firms with higher levels of depreciation are willing to increase their bond size. This supports the argument of Moh'd et al. (1995). Another important finding is that credit rating, a significant determinant of bond size, has a significantly positive effect, consistent with findings reported by Denis and Mihov (2003).

*(Please insert Tables 2.4 and 2.5 here)*

## 2.6. Conclusions

This study extends the existing knowledge of capital structure in the following ways. First, this Chapter stresses the importance of the relation between ownership and leverage ratio in the UK context. The analysis uses three major proxies for ownership: ownership concentration, managerial share ownership, and institutional ownership. The empirical results show that the association between OC and the debt ratio is non-monotonic, as is the relation between MSO and the level of debt. At lower levels of managerial share ownership, its relation with leverage is positive, supporting interest alignment theory (Jensen and Meckling, 1976). This is because higher managerial ownership plays an important role in aligning the interests of corporate managers and outside shareholders, leading to a lower cost of debt. In this case, firms are likely to raise more debt, resulting in higher debt levels. However, this relation becomes negative, which can be explained by the managerial entrenchment hypothesis (Fama and Jensen, 1983). Corporate managers are in a better position to protect their private interests from the risk of bankruptcy associated with a high leverage ratio. Our finding is consistent with the studies of Brailsford et al. (2002) and Florackis and Ozkan (2009). Interestingly, institutional ownership is found to be positively related with a firm's leverage ratio. This implies that institutional investors have a strong incentive to mitigate agency costs through monitoring. As a result, public debt

issuance is more favourable than other external financing channels.

Second, this Chapter further examines the impact of ownership structure on firms' external financing decisions. Our empirical results strongly suggest that firms with a higher level of MSO prefer to issue equity over bonds to avoid the risk of bankruptcy. This study also considers the role of current market valuation in the choice of security issuance. Consistent with previous findings (Allen and Faulhaber, 1989; Bayless and Chaplinsky, 1996), firms raise new seasoned equity when the market is favourable; otherwise, they are more likely to choose a bond issue instead. Further, this study ties stock market valuations to the relation between MSO and a firm's external financing activities. This study finds that a hot market increases the probability of firms with higher levels of managerial ownership choosing equity over bond issues. At the same time, a cold market decreases the probability that firms with a low level of managerial ownership issue equity over bonds. In summary, the magnitudes of these effects suggest that firms, on average, time current market valuation when they plan to raise external financing.

Third, this Chapter investigates whether ownership can influence the proceeds of issuance. The empirical results suggest that high-OC firms prefer to issue more bonds and less equity to maintain their corporate control and reduce agency costs. In contrast, firms with dispersed ownership tend to maximize the proceeds of equity and reduce the amount raised from bonds.

It is notable that this research highlights OC, managerial share ownership, and institutional ownership as proxies of ownership structure. Due to the difficulty of obtaining reliable data, this study does not take institutional shareholder type into account, although it plays a vital role in ownership structure. For the same reasons, it is unclear how institutional differences affect firm capital structure decisions. Furthermore, in this chapter, there is no optimal capital structure, so further research may determine how ownership influences firm capital structure adjustment speed according to dynamic trade-off theory.

# Table 2.1 Descriptive Statistics of the Full Sample

This table reports key descriptive statistics of the sample of 275 UK listed companies (Panel A) and the number of firm observations with different levels of managerial share ownership (Panel B), excluding financials and utilities. All firm observations are yearly, based on the period 1998–2009 (from January 1, 1998, to December 31, 2009).Panel A reveals the means, standard deviations, medians, and 25th and 75th quartiles of the firm characteristics of the full sample. Here OC is the sum of shares held by block holders with at least 3% stakes; MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors; Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors; Leverage is the ratio of total debt to the sum of book debt and the market value of equity; Profitability is earnings before interest, taxes, depreciation, and amortization over total debt; M/B ratio is the ratio of the book value of total assets minus the book value of equity plus the market value of equity to the book value of assets; Sales growth is the change in the log of total assets; Tangibility is tangible assets over total assets; Dividend expresses the common dividend payout ratio; Non-debt tax shield denotes the ratio of depreciation to total assets;Low MSO (0–5%) represents firms whose level of managerial share ownership is lower than 5%;Median MSO (5–25%) represents firms whose MSO is in the range 5–25%; and High MSO (>25%) represents firms whose MSO is over 25%.

| Panel A Descriptive statistics of the 275 sample firms | | | | | | |
|---|---|---|---|---|---|---|
| **Variables** | **Mean** | **St. Dev.** | **25th percentile** | **Median** | **75th percentile** | **No. of Obs.** |
| **OC** | 0.361 | 0.230 | 0.181 | 0.357 | 0.517 | 3,244 |
| **MSO** | 0.117 | 0.17.2 | 0.009 | 0.045 | 0.141 | 3,244 |
| **Institutional OC** | 0.319 | 0.224 | 0.144 | 0.301 | 0.472 | 3,244 |
| **Leverage** | 0.371 | 0.187 | 0.238 | 0.359 | 0.495 | 3,668 |
| **Profitability** | 0.135 | 0.141 | 0.092 | 0.137 | 0.191 | 3,781 |
| **M/B ratio** | 1.906 | 1.706 | 1.167 | 1.498 | 2.044 | 3,668 |
| **Sales growth** | 0.062 | 0.151 | -0.005 | 0.040 | 0.095 | 3,763 |
| **Tangibility** | 0.312 | 0.248 | 0.108 | 0.258 | 0.451 | 3,782 |
| **Dividend** | 0.086 | 0.110 | 0.0015 | 0.0546 | 0.114 | 3,648 |
| **Non-debt tax shield** | 0.037 | 0.029 | 0.017 | 0.030 | 0.047 | 3,706 |
| Panel B Number of firm observations with different levels of MSO | | | | | | |
| **Firm Observations** | **Low MSO (0–5%)** | | **Median MSO (5–25%)** | **High MSO (>25%)** | | **Total** |
| **No. of obs.** | 1680 | | 1036 | 528 | | 3244 |
| **%** | 51.79 | | 31.94 | 16.28 | | 100 |

**Table 2.2 Issue Distributions and Firm Characteristics of Bond and Equity Issues**

This table presents the distributions of 348 equity issues and 378 bond issues by year (Panel A), the firm characteristics for the sample of bond and equity issues, respectively (Panel B), and the number of issues from issuers with different levels of managerial share ownership (Panel C), excluding financials and utilities. All issues are for the period 1998–2009 (from January 1, 1998, to December 31, 2009),.Here Annual proceeds is the sum of proceeds in one year; Proceeds is the proceed amount of the issues, in millions of US dollars; OC is the sum of shares held by block holders with at least 3% share stakes; MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors; Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors; Leverage is the ratio of the book value of debt to the market value; Profitability is earnings before interest, taxes, depreciation, and amortization over total debt; M/B ratio is the ratio of total assets minus the book value of equity plus the market value of equity to the book value of assets; Sales growth is measured by the change in the log of total assets; Tangibility is tangible assets over total assets; Dividend expresses the common dividend payout ratio; Non-debt tax shield denotes the ratio of depreciation to total assets;Current market is defined as a three-month moving average of scaled equity issue volumes, where scaled issue volume is the aggregate equity issue volume divided by the month-end value of outstanding equity for the London Stock Exchange; Low MSO (0–5%) represents issuers whose level of managerial share ownership is lower than 5%;Median MSO (5–25%) represents issuers whose MSO is in the range 5–25%; and High MSO (>25%)represents issuers whose MSO is over 25%. The superscripts ***，**, and * denote statistical significance at 1%, 5%, and 10% levels, respectively, for the Wilcoxon signed ranks test of the difference in means between bond and equity issues.

| Panel A. Bond and equity issue distribution | | | | |
|---|---|---|---|---|
| | **Bond Issues** | | **Equity Issues** | |
| **Year** | **No. of Obs.** | **Annual Proceeds** | **No. of Obs.** | **Annual Proceeds** |
| **1998** | 16 | 2252.54 | 20 | 1658.64 |
| **1999** | 8 | 1134.68 | 10 | 4765.32 |
| **2000** | 24 | 7103.15 | 16 | 454.31 |
| **2001** | 32 | 6228.17 | 24 | 1794.20 |
| **2002** | 38 | 12399.49 | 55 | 2675.72 |
| **2003** | 19 | 5803.68 | 21 | 1317.84 |
| **2004** | 42 | 12508.13 | 37 | 4460.86 |
| **2005** | 20 | 3197.81 | 44 | 3325.10 |
| **2006** | 39 | 10527.04 | 37 | 4889.71 |
| **2007** | 60 | 20011.32 | 53 | 5247.06 |
| **2008** | 25 | 12237.47 | 41 | 8166.32 |
| **2009** | 25 | 6046.05 | 20 | 1478.29 |
| **Total** | 348 | 99449.53 | 378 | 40233.37 |

## Table 2.2 Continued

### Panel B. Firm characteristics for bond and equity issues

| Variables | Bond issues | | Equity issues | | Difference in means |
|---|---|---|---|---|---|
| | Mean | St. Dev. | Mean | St. Dev. | |
| Proceeds | 285.775 | 258.161 | 106.437 | 143.234 | 179.338*** |
| OC | 0.225 | 0.174 | 0.343 | 0.197 | -0.118** |
| MSO | 0.040 | 0.072 | 0.128 | 0.162 | -0.088*** |
| Institutional OC | 0.202 | 0.164 | 0.315 | 0.195 | -0.113*** |
| Leverage | 0.395 | 0.139 | 0.588 | 0.150 | -0.193*** |
| Profitability | 0.146 | 0.084 | 0.138 | 0.040 | 0.008*** |
| M/B ratio | 1.715 | 1.081 | 1.112 | 0.312 | 0.603 |
| Sales growth | 0.044 | 0.072 | 0.056 | 0.113 | -0.012*** |
| Tangibility | 0.429 | 0.263 | 0.531 | 0.224 | -0.102 |
| Dividend | 0.138 | 0.18 | 0.066 | 0.072 | 0.072*** |
| Non-debt tax shield | 0.042 | 0.03 | 0.067 | 0.055 | -0.025* |
| Current market | -0.092 | 1.062 | 0.087 | 0.931 | -0.179** |
| No. of obs. | 348 | | 378 | | |

# Table 2.3 The Impact of Ownership Structure on Firms' Capital Structure

This table reports the estimates of several OLS regressions of firm leverage levels on ownership measures and a series of control variables over the period 1998–2009 (from January 1, 1998, to December 31, 2009).Here Leverage is the ratio of the book value of debt to the market value; OC is the sum of shares held by block holders with at least 3% share stakes; MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors; Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors; Profitability is earnings before interest, taxes, depreciation, and amortization over total debt; M/B ratio is the ratio of total assets minus the book value of equity plus the market value of equity to the book value of assets; Sales growth is measured by the change in the log of total assets; Tangibility is tangible assets over total assets; Dividend expresses the common dividend payout ratio; and Non-debt tax shield denotes the ratio of depreciation to total assets.Estimation 3 is a piecewise linear specification in managerial share ownership such thatMSO (0–5%) is equal to MSO when MSO is lower than 5% and MSO (0–5%) is equal to 5% otherwise; MSO (5–25%) is equal to zero if MSO is lower than 5%.When MSO in the range 5–25%, MSO (5–25%) is equal to MSO minus 5%; otherwise, MSO (5–25%) is equal to 25%;MSO (>25%) is equal to zero if MSO is lower than 25%. When MSO is over 25%, MSO (>25%) is equal to MSO minus 25%.All independent variables are lagged with respect to the dependent variable. All regressions include year and industry fixed effects. The p-value for the chi-squared test statistic is shown in square brackets. The superscripts ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| Variable | Estimation 1 | | Estimation 2 | | Estimation 3 | | Estimation 4 | |
|---|---|---|---|---|---|---|---|---|
| | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value |
| **Intercept** | 0.205*** | [<.0001] | 0.498*** | [<.0001] | 0.479*** | [<.0001] | 0.474*** | [<.0001] |
| **OC** | 0.126*** | [<.0001] | | | | | | |
| **OC$^2$** | -0.321*** | [0.003] | | | | | | |
| **MSO** | | | 0.564*** | [<.0001] | 0.486*** | [<.0001] | | |
| **MSO$^2$** | | | -0.863*** | [0.005] | -0.672*** | [0.004] | | |
| **MSO (0–5%)** | | | | | | | 0.082** | [0.021] |
| **MSO (5–25%)** | | | | | | | 0.016*** | [0.001] |
| **MSO (>25%)** | | | | | | | -0.008*** | [0.001] |
| **Institutional OC** | | | | | 0.046*** | [0.000] | 0.046*** | [0.001] |
| **Profitability** | -0.228*** | [<.0001] | -0.196*** | [<.0001] | -0.199*** | [<.0001] | -0.195*** | [<.0001] |
| **M/B ratio** | -0.061*** | [<.0001] | -0.064*** | [<.0001] | -0.064*** | [<.0001] | -0.064*** | [<.0001] |
| **Sales growth** | -0.046** | [0.024] | 0.040 | [0.846] | 0.088 | [0.670] | 0.047 | [0.820] |
| **Tangibility** | 0.029** | [0.020] | 0.026** | [0.045] | 0.032** | [0.014] | 0.028** | [0.031] |
| **Dividend** | 0.091*** | [0.000] | 0.016*** | [<.0001] | 0.017*** | [<.0001] | 0.018*** | [<.0001] |
| **Non-debt tax shield** | 0.258** | [0.026] | 0.244** | [0.039] | 0.208* | [0.078] | 0.200* | [0.091] |
| **Adjusted R$^2$** | 0.325 | | 0.296 | | 0.299 | | 0.300 | |
| **No. of obs.** | 3244 | | 3244 | | 3244 | | 3244 | |

# Table 2.4 The Impact of Ownership Structure on Firms' Financing Decisions

This table reports the estimates of logistic regressions where the dependent variables are binary variables that take the value of one if the issuer issues equity and zero for bond issues. The sample comprises 726 issues combined with 348 bond and 378 equity issues over the period 1998–2009 (from January 1, 1998, to December 31, 2009).Here OC is the sum of shares held by block holders with at least 3% share stakes; MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors; Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors; Leverage is the ratio of the book value of debt to the market value; Profitability is earnings before interest, taxes, depreciation, and amortization over total debt; M/B ratio is the ratio of total assets minus the book value of equity plus the market value of equity to the book value of assets; Sales growth is the change in the log of total assets; Tangibility is tangible assets over total assets; Dividend expresses the common dividend payout ratio; Non-debt tax shield denotes the ratio of depreciation to total assets; andCurrent market is a three-month moving average of scaled equity issue volumes, where scaled issue volume is the aggregate equity issue volume divided by the month-end value of outstanding equity for the London Stock Exchange. The variable Hot(Cold) is a dummy variable equal to one when the valuation of the current market is in the top (bottom) 30% of the whole research period and zero otherwise; MSO*Hot (MSO*Cold) is the interaction term of MSO and Hot (Cold), that is, MSO times the Hot (Cold) dummy variables. Estimation 3 is a piecewise linear specification in managerial share ownership such that MSO (0–5%) is equal to MSO when MSO is lower than 5% and MSO (0–5%) is equal to 5% otherwise; MSO (5–25%) is equal to zero if MSO is lower than 5%. When MSO in the range 5–25%, MSO (5–25%) is equal to MSO minus 5%; otherwise MSO (5–25%) is equal to 25%; MSO (>25%) is equal to zero if MSO is lower than 25%. When MSO is over 25%, MSO (>25%) is equal to MSO minus 25%.All independent variables are for the year-end prior to issuance. All regressions include year and industry fixed effects.The p-value for the chi-squared test statistic is shown in square brackets. The superscripts ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| Variables | Estimation 1 | | Estimation 2 | | Estimation 3 | | Estimation 4 | | Estimation 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value |
| Intercept | -1.469*** | [<.0001] | -0.521*** | [<.0001] | -1.456*** | [<.0001] | -1.590*** | [<.0001] | -0.864** | [0.014] |
| OC | 0.042*** | [<.0001][ | | | | | | | | |
| MSO | | | 0.052*** | [<.0001] | | | 0.021*** | [0.000] | 0.033** | [0.011] |
| MSO (0–5%) | | | | | 0.119 | [0.162] | | | | |
| MSO (5–25%) | | | | | 0.073*** | [0.005] | | | | |
| MSO (>25%) | | | | | 0.020 | [0.534] | | | | |
| MSO*hot | | | | | | | 0.218*** | [0.000] | | |
| MSO*cold | | | | | | | | | -0.165* | [0.052] |
| Current market | 0.631*** | [0.003] | 0.513*** | [0.000] | 0.832*** | [0.000] | | | | |
| hot | | | | | | | 1.283*** | [<.0001] | | |
| cold | | | | | | | | | -0.601** | [0.036] |
| Institutional OC | | | 0.041*** | [<.0001] | 0.035*** | [<.0001] | 0.039*** | [<.0001] | 0.038*** | [<.0001] |
| Leverage | 0.127*** | [0.001] | 0.197*** | [0.002] | 0.297*** | [<.0001] | 0.164** | [0.012] | 0.194*** | [0.002] |
| Profitability | 0.419*** | [0.007] | 0.396** | [0.013] | 0.510*** | [0.003] | 0.486*** | [0.003] | 0.464*** | [0.003] |
| M/B ratio | -0.141 | [0.281] | -1.057 | [0.423] | -0.237* | [0.095] | -0.115 | [0.390] | -1.290 | [0.328] |
| Sales growth | 0.784*** | [<.0001] | 0.491*** | [<.0001] | 0.524*** | [<.0001] | 0.563*** | [<.0001] | 0.513*** | [<.0001] |
| Tangibility | -0.201*** | [<.0001] | -1.837*** | [<.0001] | -0.207*** | [<.0001] | -2.040*** | [<.0001] | -1.942*** | [<.0001] |
| Dividend | -0.693*** | [<.0001] | -0.656*** | [<.0001] | -0.683*** | [<.0001] | -0.549*** | [<.0001] | -0.579*** | [<.0001] |
| Non-debt tax shield | 0.896** | [0.043] | 0.170 | [0.722] | 0.266 | [0.599] | -0.034 | [0.947] | 0.207 | [0.656] |
| Pseudo-R$^2$ | 0.297 | | 0.298 | | 0.336 | | 0.349 | | 0.307 | |
| No. of obs. | 726 | | 726 | | 726 | | 726 | | 726 | |

**Table 2.5 The Impacts of Ownership on the Proceed Amount of Issuance**

This table reports the estimates of several OLS regressions where the dependent variable is the proceed amount of issuance (scaled by the issuer's market value for the year-end prior to issuance). Our two subsamples consist of 348 bond and 378 equity issues, respectively, over the period 1998–2009(from January 1, 1998, to December 31, 2009).Estimations 1 and 2 are used to examine the relation between ownership and the proceed amount of bond issues, while Estimations 3 and 4 are employed to test the impact of ownership on the proceed amount of equity issues. Here OC is defined as the sum of shares held by block holders with at least 3% share stakes; MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors; Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors; Leverage is the ratio of the book value of debt to the market value; Profitability is earnings before interest, taxes, depreciation, and amortization over total debt; M/B ratio is defined as the ratio of total assets minus the book value of equity plus the market value of equity to the book value of assets; Sales growth is the change in the log of total assets; Tangibility is tangible assets over total assets; Dividend expresses the common dividend payout ratio; Non-debt tax shield denotes the ratio of depreciation to total assets;andCredit rating is a dummy variable that equals one when a firm's S&P bond rating is above A- and zero if below A-.All independent variables are lagged with respect to the dependent variable. All regressions include year and industry fixed effects. The p-value for the chi-squared test statistic is shown in square brackets. The superscripts ***，**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | Bond issue | | | | Equity issue | | | |
|---|---|---|---|---|---|---|---|---|
| | Estimation 1 | | Estimation 2 | | Estimation 3 | | Estimation 4 | |
| | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value |
| **Intercept** | -0.185 | [0.613] | 0.498*** | [<.0001] | 0.323*** | [<.0001] | 0.976*** | [<.0001] |
| **OC** | 0.026*** | [<.0001] | | | -0.006** | [0.044] | | |
| **MSO** | | | -0.065 | [0.885] | | | -0.020 | [0.262] |
| **Institutional OC** | | | 0.013*** | [<.0001] | | | 0.047 | [0.462] |
| **Leverage** | -0.098*** | [0.001] | -0.096*** | [0.001] | -0.263*** | [<.0001] | -0.265*** | [<.0001] |
| **Profitability** | -1.326* | [0.070] | -1.478** | [0.022] | -1.706** | [0.015] | -0.312** | [0.027] |
| **M/B ratio** | -1.073* | [0.064] | -1.812*** | [0.001] | 0.482 | [0.501] | 0.765*** | [<.0001] |
| **Sales growth** | 1.916*** | [0.000] | 1.093** | [0.022] | 0.22 | [0.404] | 0.089 | [0.857] |
| **Tangibility** | 0.316** | [0.029] | 0.651*** | [<.0001] | -0.298 | [0.238] | -0.124** | [0.011] |
| **Dividend** | 0.517** | [0.011] | 0.481*** | [0.006] | -0.576 | [0.441] | 1.888 | [0.234] |
| **Non-debt tax shield** | 1.585*** | [<.0001] | 1.258*** | [<.0001] | 0.323 | [0.123] | 0.702* | [0.075] |
| **Credit rating** | 0.168** | [0.044] | 0.141* | [0.078] | | | | |
| **Adjusted R$^2$** | 0.474 | | 0.471 | | 0.228 | | 0.245 | |
| **No. of obs.** | 348 | | 348 | | 378 | | 378 | |

# Chapter 3 Ownership Structure and the Choice of SEO Issue Method

## 3.1 Introduction

Seasoned equity offerings (SEOs) are an important external financing decision for publicly listed firms. The research on UK SEOs mainly focuses on the choice of issue type, such as rights offers versus placings, as well as the market reactions to announcements of SEO issuance. For example, Slovin et al. (2000) find that rights offer generates a significantly negative effect on firm stock price, while placing has a significantly positive effect. Based on a different sample period, Barnes and Walker (2006) obtain similar outcomes. They further develop a model to examine the determinants of choice between rights offers and placings. However, in addition to rights offers and placing, there are alternative SEO choices for UK firms, such as open offers or a combination of an open offer and placing.

To the best of my knowledge, there is no previous research on these alternative SEO choices. Therefore, the basic motivation of this chapter is to fill this gap by examining the choice of alternative issue methods, including rights offers, placing, open offers, and open offers combined with placing. This chapter mainly investigates the choices of financing decisions relating to firm ownership structure.

It further analyzes the effects of ownership structure on the price setting and announcement returns of SEOs.

When UK firms conduct an SEO, they can choose from four flotation methods: a rights offer (RO), placing (PL), an open offer (OO), and a combination of placing and an open offer (PLOO). The RO and OO are right-preserving issue methods, in which existing shareholders are entitled to preemption rights for purchasing new shares in proportion to their holdings. This preemption right is an effective mechanism to protect shareholder wealth and control, which is enshrined in UK Company Law (Companies Act 1985). Moreover, preemption rights in ROs are allowed to be sold in the market, whereas those in OOs are not marketable. As an alternative to a right-preserving issue, UK firms may issue equity through placing, in which the entire amount of shares is purchased by an underwriter at a fixed price; the underwriter then places the shares with outside investors rather than existing shareholders. Additionally, UK firm usually conduct OOs combined with conditional PLs, that is, PLOOs. In such an offer, the proportion of the share placed is subject to the proportion of shares taken up by existing shareholders.

The role of ownership structure in a firm's choice of issue method is discussed in the context of agency costs between large undiversified and diversified shareholders and between managers and shareholders. According to the control hypothesis, block holders, who hold large fractions of a firm's shares, are assumed to have a large influence on firm equity issue decisions by voting rights and control. Block holders of the firm are expected to press the firm to choose a right-preserving

issue rather than placing to avoid the reduction in private benefits of control. Moreover, if block holders do not exercise the preemption rights, they can also obtain benefits from selling these rights to other investors (Cronqvist and Nilsson, 2003). In this case, an RO is more likely to be chosen over an OO. Based on these considerations, it is implied that a firm's ownership structure may have large impact on its financing choices. To conduct this analysis, this chapter uses ownership concentration as a proxy for the incentive of block holders.

Under the managerial entrenchment hypothesis, managers are assumed to choose the issue method that maximizes their private wealth. However, the choice in this case may not be optimal from a shareholder's perspective. This setting will lead to two outcomes. First, placings can dilute the control power of firms; thus entrenched managers are less likely to choose placing. Second, placings can also be used to strengthen the control rights of management (Barclay et al., 2007). Managers can place the shares directly with affiliated investors who vote in favour of managers, resulting in more entrenched management. For this reason, managers prefer placing rather than other issue methods. To analyze this issue, we construct managerial ownership as a proxy for the incentive of entrenched managers.

To investigate the monitoring effect on this issue, this Chapter uses institutional ownership as a proxy for the incentive of external monitors. The monitoring hypothesis suggests that the monitoring of management can constrain managerial opportunism in corporate policy decision making. Therefore, firms with active monitors tend to choose the issue method that maximizes shareholder interests.

Shleifer and Vishny (1986) indicate that placing can strengthen the monitoring of management by creating potential monitors. However, if the firm already has monitors, the benefit of adding one by placing should be lower. In this case, the probability of firms implementing SEOs by placing will be decreased.

This study examines the SEOs of firms traded on the London Stock Exchange (LSE) during the period 1998–2010. The data on SEO and ownership characteristics are obtained from Thomson One Banker's database. The research sample comprises 653 UK SEOs, categorized into four subsamples by issue type: 156 ROs, 291 PLs, 54 OOs, and 152 PLOOs. The descriptive statistics analysis shows that the average issue size of ROs is the largest, while that of PLs is the smallest (US$211.79 versus US$91.21 million, respectively) among the four issue types. Moreover, the highest price discount occurs for ROs, while the lowest appears in PLs. These results are consistent with the restrictions of the LSE (also found in Barnes and Walker, 2006; Capstaff and Fletcher, 2011). To examine the choice of SEO issue method more explicitly, this Chapter applies not only the basic logistic models, but also multinomial logistic regression. This is because the latter model allows for four possible conditions of the dependent variable. Subsequently, event study methodology and cross-sectional regressions are used to examine the determinants in offer price setting and market reactions to SEO announcements. Consistent with previous studies (Slovin et al., 2000; Barnes and Walker, 2006; Capstaff and Fletcher, 2011), this study finds significantly positive market reactions to PLs and PLOOs, but a negative reaction to ROs. This indicates that SEOs choosing a PL or

PLOO provide a positive signal for firm value, which results in lower indirect costs, but an RO is a negative signal for firm value and entails larger indirect costs.

By investigating the determinant of the choice of issue method, the empirical results strongly support the hypotheses. Consistent with the control hypothesis, high ownership concentration firms prefer ROs and OOs over PLs. Moreover, they choose ROs over OOs. For firms with higher managerial ownership, placing is the first choice for these firms' equity issues. This evidence is in line with the prediction of the entrenched management hypothesis. Moreover, firms with lower institutional ownership are more likely to choose placing over other issue methods to improve monitoring.

This Chapter also finds evidence that the probability of choosing placing is significantly related to issue size, offer discount, and previous stock performance. More specifically, firms with smaller offer sizes, higher discounts, and better stock performance are more likely to use the placing method. These results are consistent with Barnes and Walker (2006). Interestingly, the results also suggest that pre-issue market conditions have a significant effect on the choice of issue method. Placing is the first choice for firms who conduct SEOs in a cold market; however firms are less likely to choose placing in a hot market. The result supports the argument that firms are willing to conduct equity issues when they are overvalued. A hot market is highly associated with overoptimistic investors and overvalued equity (Barker and Wurgler, 2002). Given the argument that using placing is a proxy for value

certification (Hertzel and Smith, 1993), SEOs in a hot market are likely to be motivated by firm overvaluation.

Furthermore, this Chapter provides evidence of the SEO price-setting process and subsequent announcement returns. In particular, our analysis focuses on the influence of ownership structure on such issues. The results suggest that firms with concentrated ownership or higher managerial share ownership are likely to offer a higher discount in their SEOs. Consistent with the private benefit prediction of the controlling hypothesis, the share's public float and market liquidity should decrease with the ownership of controlling shareholders. Therefore, such firms should offer a higher discount to compensate for investing in illiquid stock.

Moreover, this study finds that SEOs conducted by firms with higher managerial ownership receive less favourable market reactions. On the contrary, there is a significantly positive relation between pre-issue institutional ownership and SEO announcement returns. This result indicates that high pre-issue institutional ownership is a positive signal for firm value due to the monitoring by institutional investors. This Chapter also reports that the market condition is positively associated with market reactions to SEO announcements. This finding further supports market timing theory. It implies that managers are market timers who are likely to issue equity when indirect costs are lower.

The results support the theoretical predictions of Wruck (1986), Shleifer and Vishny (1986), Eckbo and Masulis (1992), Hertzel and Smith (1993), and Barclay

et al. (2007). Private placement creates a large shareholder with an incentive to monitor, which can mitigate the problem of managerial moral hazard and raise the probability of a value-increasing takeover (Wruck, 1986; Shleifer and Vishny, 1986). Eckbo and Masulis (1992) argue that the use of a rights offer may fully solve the underinvestment problem if all existing shareholders exercise 100% of their rights. However, it becomes costly to issue equity by a rights offer with lower shareholder participation, especially for an undervalued firm, due to wealth transfers from existing shareholders to new shareholders.

Hertzel and Smith (1993) propose that private placements may solve the underinvestment problem. They argue that private placement is a value certification from informed investors. The informed investor confirms firm value by agreeing to purchase a large fraction of new shares. Barclay et al. (2007) find that private placements can assist management solidify their control of a firm, the rationale being that private placements are often made to friendly investors who will not 'rock the boat', leading to a more entrenched management.

This study makes several contributions to the literature. First, this Chapter extends prior studies on UK SEO. More specifically, in addition to ROs and PLs, this Chapter also consider OOs and PLOOs as alternative issue methods in the analysis. This consideration adds new insights on the choice of SEO issue methods. Second, for the first time in the literature, this study constructs three ownership variables – ownership concentration, managerial ownership, and institutional ownership – to examine the role of ownership structure in UK SEOs. Third, this Chapter use

multinomial logistic regressions to analyze what factors influence a firm's decision among the four SEO types, RO, PL, OO, and PLOO. Fourth, this study also explicitly considers SEO price setting and assesses its effect on market reactions to SEO announcements.

This chapter is organized as follows. Section 3.2 briefly summarizes the different SEO methods in the UK. Section 3.3 discusses the underlying theory and hypothesis development. Section 3.4 describes the sample selections and presents descriptive statistics. Section 3.5 discusses the main finding from the empirical results. Finally, our conclusions are presented in Section 3.6.

## 3.2 SEOs and Different Issue Methods

This section provides a brief overview of seasoned equity issues in the UK, including different issue types, underwriting procedures, the SEO process, and conflicts of interests.

### 3.2.1 Regulation and Issue Method in UK SEOs

In the last two decades, the regulation of issue methods in UK firm has changed. Rights offers were the only method for UK firms to issue seasoned equity until 1986. After that, placing offers were allowed. Since 1996, the proportion of issues

conducted by placing has increased dramatically, while the proportion of issues by rights offers has declined.

In practice, UK firms issuing a seasoned equity can choose from three flotation methods: rights offers, placings, and open offers. Both rights offers and open offers, give existing shareholders' preemption rights to purchase new shares in proportion to their holdings, and the sale of new shares turns to other investors, only if shareholders do not exercise any or part of the preemption rights. Thus, rights and open offers are also called a preemption issue. However, placing is a non-preemption issue, in which the seasoned shares in the placing are sold at a fixed price to outside investors. Preemption rights are a principal mechanism to protect shareholders from dilution of their wealth and control in the firm, enshrined in UK Company Law and LSE listing rules.

### 3.2.1.1 Rights Offer

In a rights offer, existing shareholders are entitled to subscribe to the new shares in proportion to their existing shareholdings at an exercise price that is below the pre-announcement share price. Typically, existing shareholders are allowed to process this preemption right within 21 days after the initial announcement (LSE listing rules). To maintain their proportionate ownership and value of shareholding, existing shareholders have an incentive to exercise their rights and undertake their proportional stakes in the new shares. However, this is not compulsory. Since the new shares are usually offered at a discount, the rights have an intrinsic value,

allowing shareholders to trade them in the secondary market. Thus, existing shareholders can sell part or all rights to other investors who are willing to participate in the new equity issue. Rights that are not exercised or traded during the subscription period can be allotted or sold to underwriters and are likely to be taken up by other shareholders in the issuing firm, who desire to purchase more shares over their pro rata share of the issue (Eckbo and Masulis, 1995; Barnes and Walker, 2006). This method is called the overallotment option.

In a rights offer, the LSE listing rules stipulate that the value of rights must exceed 25% of the total amount of shares offered and the exercise price must be below one-half of the difference between the offer price and the ex-rights price. Moreover, a rights offer in UK can be insured (underwritten) or uninsured. In the insured rights offer, the issuing firm pays an underwriter a standby fee to guarantee that all shares can be sold at the offer price. The underwriter is responsible for any unsubscribed shares. The standby fees are relatively uniform. Most UK rights offers are insured, as confirmed by Marsh (1979, 1980). Furthermore, Slovin et al. (2000) find that 91% of right issues were insured in the period of 1986–1994.

**3.2.1.2 Placing**

In a placing, the lead underwriter or broker commits to buy all of the new shares from the issuing firm at a given price and then places the shares directly with outside investors, primarily institutions. On the initial announcement date, the issuing firm obtains a certain amount of proceeds based on the fixed offer price.

Meanwhile, the underwriter takes the responsibility for issued shares. The offer conducted by placing cannot be withdrawn or postponed and, moreover, the offer characteristics as reported in the initial announcement cannot be revised. Thus, the underwriter cannot adjust offer proceeds or the offer price according to the market reaction to the announcement. As a result, the underwriter must bear not only the risk of offer failure and the risk of undersubscription, but also the risk from subsequent adverse share price changes. To reduce these risks, underwriter certification of the issuing firm value becomes more important in the case of UK placing. Thus, conducting SEOs by placing can be perceived as a signal of the issuing firm's quality (Slovin et al., 2000). High-quality firms are more likely to choose placing as the offer method to distinguish themselves from other firms, which can mitigate the adverse selection problem.

Slovin et al. (2000) further propose that underwriting risk for a placing in the UK is much greater than for a firm's commitment offering in the US. Similar to firm commitment offers in the US, in the UK offer characteristics are solicited based on the information of investor potential demand and market conditions. Such information is acquired by the underwriter's bookbuilding activities. In a US firm's commitment offer, the offer terms can be adjusted on the basis of such information during the period from the initial announcement date to the actual offer date. The offer price and size are finalized by the offer date. However, the bookbuilding of UK placings takes place prior to the issue announcement date. The offer terms are set upon initial announcement and, furthermore, the placing can be postponed or withdrawn after the initial announcement date.

Since placing is an invitation to outside investors, the wealth of the existing shareholders is more likely to decline and dispersion in post-issue equity holdings is likely to be greater than in the case of rights issues. To limit such a dilution in ownership, the LSE listing rules stipulate that issue proceeds in placing cannot exceed 5% of the current share capital, unless the excess part is approved by the shareholders in an extraordinary general meeting (EGM, hereafter) with a majority of 75% of the votes. The 5% limitation is relaxed to 10% for the shares issue as part of vendor placing (the UK Listing Authority, hereafter UKLA). Moreover, the offer size of the placing is restricted to 5% of existing capital in any one year and 7.5% in any three years (UKLA). The offer discount in placing is limited to at most 10% of the middle market price at the time of the placing (UKLA). Burton et al. (2005) state that existing shareholders generally vote against any proposed share issues through their preemption rights, especially since the proposed discount is higher than 5% of the middle market price in reaction to the SEO announcement.

Moreover, UK firms are permitted to carry out placings since 1986. Prior to 1990, offer sizes over £3 million could not be conducted by placing. The maximum value of the offer size then increased to £15 million during 1990–1995. The restriction of the offer size in placings was removed in January 1996. Slovin et al. (2000) define a post-deregulation period and a pre-deregulation period, respectively, as 1986–1994 and 1982–1985, to examine the effect of regulation changes on the choice of issue method.

### 3.2.1.3 Open Offer and Open Offer Combined with Placing

Open offer has similar characteristics to both rights offers and placings. To attract investors to participate in the issue, the new shares are offered at a discount. As in a rights offer, existing shareholders in open offers are also entitled to purchase new shares in proportion to their existing holdings. However, there is no renounceable allotment letter or negotiable document in an open offer, so that existing shareholders are unable to sell entitlements to other investors. Therefore, existing shareholder wealth is likely to decline when shareholders do not take up their pro rata entitlements. This suggests that an open offer is less convenient for existing shareholders who do not wish to increase their holdings, compared with a rights offer. Similar to the case with a placing, shares that are not taken up by existing shareholders are allocated privately to new investors, primarily institutions, prior to the issue announcement. This is called a placing with clawback (Barnes and Walker, 2006).

In the UK, most open offers are usually made in conjunction with conditional placing, which is called placing with an open offer (PLOO). Typically, in this type of offer, the shares are placed by an underwriter or directly with institutions or other investors, subject to recall for 21 days by shareholders that exercise the preemption right. Moreover, the offer price in such an issue must not be discounted by more than 10% of the middle market price at the time of issue announcement, unless approved by an EGM (LSE listing rule).

### 3.2.2 Underwriting and the Process of SEO

Since the late 1980S, in the UK, SEO-issuing firms usually hire an investment bank or broker to underwrite the share issue. The most important role played by the underwriter is to ensure that the required capital from the SEO will be successfully raised. Armitage (2000) states that investment bankers and brokers in the   agree to underwrite new shares before the issue is publicly announced. However, the agreement may be verbal and not legally binding, unless it is written on or after the announcement date.

In the SEO process, basic underwriting services include advising how and when to conduct the issue, pricing the offer, allocating the shares, writing up the prospectus, conducting a road show, and acting as a sponsor to the issue. In the US , underwriters set the offer price range on the basis of the demand information provided by investors, who would be compensated by more favourable allocation (Benveniste and Spindt, 1987). Unlike in the US, there is no initial price range in the case of UK SEOs. By studying the SEO bookbuilding process, Cornelli and Goldreich (2003) find that underwriters consider entire bids in the demand curve and finalize the offer price accordingly. Although the pre-issue market price is observable in the second SEO market, pricing setting cannot fully rely on this price because the market reaction to SEO announcements should be considered. Thus the issuing firm also needs to build a book, especially since the stock has low liquidity or the required amount of issue is large relative to existing capital (Cornelli and Goldreich, 2003).

In UK SEOs, investment bankers or brokers that have an established relationship with the issuing firm are more likely to be used as underwriter (Armitage, 2000). The number of underwriters in the syndicate is determined by the transaction risk and the size of the underwriter's balance sheet. Each underwriter in the syndicate is allocated a proportion of the transactions. Underwriters normally arrange the proportion of shares with high transaction risk to be sub-underwritten. To guarantee the success of the issue, the sub-underwriting is generally taken on by institutions who already hold pre-issue shares of the issuing firm. In this case, the risk has been transferred from the underwriter to institutions, which are compensated by the sub-underwriting fees.

In a rights offer, the underwriter is required to prepare the prospectus and send it out to shareholders (Financial Services and Market Act, 2000). Before the announcement, the underwriter can communicate with existing shareholders and provide compelling reasons for the issue. This can increase the likelihood of approval of right issues at the general meeting and the take-up of new shares during the subscription period. The general meeting extends the process by at least two weeks. The amount of a rights issue has no limitation, although the directors in the issuing firm have no authority to raise capital beyond two-thirds of the existing capital. In common practice, the underwriter suggests that the issuing firm choose a rights offer when the required capital is over 10% of existing capital.

Moreover, there is non-underwritten issue under the rights offer approach, which has become rare since 1999: The offer price of such an issue type is deeply discounted to enhance the take-up of shares among investors and thus issuing firm are more likely to gain capital successfully without underwriting costs. However, this issue type is perceived as a negative signal, that the issuing firm has lower quality, and results in a negative market reaction to the announcement (Heinkel and Schwartz 1986). Korteweg and Renneboog (2003) further find that non-underwritten rights offers are mostly conducted by financially distressed firms.

Given that the opportunities to subscribe for new shares are equal for either existing shareholders or new investors, placing does not require a prospectus. The amount of issue is restricted by regulation, because placing leads to the dilution of shareholder ownership. Consequently, the amount of placing is likely to be smaller than for a rights offer of open offer. In a placing the underwriter runs the bookbuilding to market the new shares and negotiate the offer price with selected investors. Unlike a rights offer, there is no time for existing shareholders trading preemption rights in the event of non-exercise. The timing of placing is much quicker than in other issue methods, from one day to one week. In practice, firms are more likely to choose placing in the case of a stock-financed merger (Fama and French, 2005).

Similar to the rights offer process, an open offer requires a prospectus and the issuing firm to hold a general meeting. However, the decision to conduct an open offer does not have to be approved by existing shareholders. The role of the general meeting is to notify the shareholder of the subscription period, typically at least 10

days. The time to prepare for the general meeting is shorter in an open offer than in a rights offer. Therefore, issues conducted by open offers or open offers with placing are quicker, compared with rights offers. Given an open offer combined with placing with clawback, new investors are encouraged to subscribe to the new shares. The discount in an open offer is restricted to no more than 10% of the current market price.

### 3.2.3 Conflicts of Interest in the SEO Process

By reviewing the SEO process and underwriting practice in SEOs, two main conflicts of interest should be considered. First is the conflict between the underwriter and the issuing firm. During the issue, the issuing firm and underwriter have the same target: maximizing the take-up of new shares. For the issuing firm, a high take-up indicates that more investors are confident of its prospects. For the underwriter, a high take-up reflects the underwriter's ability and thus improves reputation. However, information asymmetry exists between the issuing firm and the underwriter in SEO price setting. The underwriter has superior information regarding the potential demand of the shares through bookbuilding activities. To guarantee that the shares are fully subscribed, the underwriter is likely to set a lower offer price. Additionally, since information acquisition is costly, the underwriter may price the share at a high discount to reduce such costs. In this case, the price is not optimal for the issuing firm. This conflict of interests can be weakened by the underwriter's reputation (Cornelli and Goldreich, 2003).

A second conflict of interests arises among the shareholders. The information about the issuing firm is asymmetric between existing shareholders and outside investors. To resolve this problem, an underwriter is hired to price the shares accurately, in line with the true value of the issuing firm. In the case of rights issues, Heinkel and Schwartz (1986) argue that high-quality firms are more likely to choose underwritten issues than non-underwritten issues. The empirical results of Slovin et al. (2000) and Balachandran et al. (2008) support this argument in the UK and Austria, respectively. Balachandran et al. (2008) further demonstrate that high-quality firms prefer underwritten issues over partial or non-underwritten issues. Eckbo and Masulis (1992) propose that underwriting may signal to the market that the issuing firm is not overvalued, which influences investor expectations of a new issue. As a result, more investors, whether existing shareholders or new investors, participate in the issue. However, Armitage(1999) finds there is no relation between the proportion of shares sold to new investors and the proportion underwritten.

## 3.3 Theories and Hypothesis Development

This section provides previous evidence and relevant theories about SEOs, including the choice of issue method, offer price discount, and announcement effect of SEOs. Based on the theoretical literature, this study develops several testable hypotheses for the empirical analysis.

### 3.3.1 The Choice of SEO Issue Method

Previous studies provide several explanations behind a firm's choice of a rights issue, placing, or open offer at the time of the SEO. Various issue methods may have differential effects on firm ownership structure. Unlike the rights offer, placing allows other investors to purchase the new shares, rather than just existing shareholders. Therefore, placing may induce a major ownership change, while ownership structure after a rights issue may be relatively unaltered (Barnes and Walker, 2006). By studying US SEOs, Kothare (1997) finds that ownership becomes more diffuse after a public offering, but more concentrated following a rights issue.

The preemption right in a rights issue and an open offer can protect the existing shareholders' wealth and control. Cronqvist and Nilsson (2003) find that right issues are used to maintain family control. Consistent with this result, Wu and Wang (2005) argue that family-controlled firms are more likely to choose a rights issue because they desire to preserve the private benefits of control. By developing a model for the choice of equity issuing method, Rinne and Suominen (2009) claim two major determinants of the choice: value uncertainty and the price impact of selling shares. They argue that undervalued firms are likely to use rights issues, while overvalued firms choose public offers. Moreover, the price impact is larger for rights issues than for public offers, because in the latter case the offer discount can be lowered by the underwriter's market effort.

There are several reasons for firms to use placing. First, firms with higher information asymmetry are more likely to choose placing over public offers, because placing can reduce information production cost (Chemmanur and Fulghieri, 1999). To ensure the success of an equity issue, the issuing firm must provide information to the public and attract larger amounts of investors to purchase new shares in the public offer. However, placing only involves target investors, typically one or small amounts of investors. Therefore, given a level of information asymmetry, placing incurs lower information cost than an open offer. Wu (2004) finds that private placement firms have higher information asymmetry than public offering firms.

Second, Hertzel and Smith (1993) propose that using private placement as an issue method is value certification. Private placement investors, as informed investors, affirm a firm's market value by agreeing to buy large percentage blocks of stock at a given offer price. Therefore, undervalued firms prefer private placement over public issues (Hertzel and Smith, 1993). Eckbo and Masulis (1992), Barnes and Walker (2006), and Cronqvist and Nilsson (2003) also find firms with a high degree of value uncertainty – for example, undervalued firms – are more likely to choose placing over a rights offer.

Third, placing improves the monitoring of management, because of increased active block holders (Shleifer and Vishny, 1986, Wruck, 1989). The new shares in placing are purchased by outside block-holders, resulting in higher external ownership. Motivated by the shared benefits of control, such new block holders

have an incentive to monitor management and ensure that corporate policy decision making is more efficient. Shleifer and Vishny (1986) further suggest that external ownership is positively related to firm value. However, most placings in private placement are passive, which suggests placings may have no effect on monitoring incentives (Wu, 2004; Barclay et al., 2007).

Fourth, placing may induce more entrench management. The buyers in a placing are usually institutions or large block holders, who may participate on the board as an inside investor following the placing. In some cases, managers will provide a higher offer discount for select investors in exchange for their votes in the managers' favour, resulting in an entrenched management (Barclay et al., 2007; Armitage, 2010).

### 3.3.2 SEO Discount

It is common for a new issue to be priced at a discount in an SEO. Given that the pre-issue price can be observed in the market, an SEO discount is usually measured as the percent change between the closing price on the day prior to the issue and the offer price or the percent change between the offer price and the closing price one day after the issue. The latter measure is also used to proxy for SEO underpricing.

The pricing of SEOs has attracted much attention in the academic literature. Eckbo and Masulis (1992) find the average discount in US SEOs from 1963 to 1981 is only 0.44%. Loderer et al. (1991) report that during 1980–1984, the discount is

1.4%, rising to around 3% in the 1990s (Mola and Loughran, 2004). During the 1980s and 1990s, Corwin (2003) shows that the discount of seasoned offerings increased substantially over time, averaging 2.2%. Meanwhile, Slovin et al. (2000) examine UK SEOs and find a significant discount of 17% for insured issuers over 1986–1994. Barnes and Walker (2006) report that the average discount between 1989 and 1998 is 15%.

The SEO discount is an indirect cost for firms of issuing new shares, based on uncertainty about firm value, gathering information, and marketing the new shares. The literature provides several potential explanations for SEO discounting. In the value uncertainty hypothesis (Ritter, 1984), uninformed investors should require higher compensation for stocks with greater value uncertainty. Corwin (2003) argues that SEO discounting is positively related to the level of uncertainty about firm value. The investigation of Altinkilic and Hansen (2003) also confirms the positive relation between discounting and value uncertainty in US SEOs. According to the winner's curse problem (Rock, 1986), the issuer must price the shares at a discount to guarantee that uninformed investors will participate in the new equity issue. Otherwise, informed investors will squeeze uninformed investors out of the good issues and withdraw from the new issue market for bad issues. Beatty and Ritter (1986) argue that SEO discounting is positively related to the level of ex ante uncertainty about the value of the issue.

Furthermore, Benveniste and Spindt (1989) suggest that underwriters attempt to pay for acquiring information from better-informed investors by allocating the new

shares at a higher discount. In line with this argument, Aggarwal et al. (2002) demonstrate that in initial public offerings, underwriters are likely to allocate more shares to institutional investors with a higher discount. Additionally, Corwin (2003) finds that a bigger offer induces a larger discount, which is consistent with price pressure caused by a downward-sloping demand curve. In principle, the demand for shares decreases as the supply of shares is permanently increased in an SEO. The discounting of an SEO is compensation for the investor, who is willing to absorb the additional shares.

### 3.3.3 Announcement Effect on SEOs

Numerous studies have documented that SEOs have a negative average announcement effect (e.g., Asquith and Mullins, 1986; Masulis and Korwar, 1986; Clarke et al., 2002; Corwin, 2003). Asquith and Mullins (1986) explore the phenomenon of offering dilution in equity offerings, where the dilution is measured by the change in the ratio of the equity value of the firm to the proceeds of the issue. Bayless and Chaplinsky (1996) observe that the equity value of firms declines by around 13% of the issue proceeds after the equity announcement. Interestingly, Clarke et al. (2002) find that the negative announcement return for secondary offerings is less negative than for SEOs, -2% versus -3%, respectively.

The explanations of the negative price impact of SEOs are often based on the information asymmetry model. Ross (1977) and Leland and Pyle (1977) develop a signalling model to explain the negative announcement return. They suggest that

managers have an incentive to maintain their stock ownership if they are highly optimistic with regard to the firm's future performance. Thus equity issuance is a bad signal to the market that managers have negative private information for the firm's prospects, resulting in a fall in stock price. In the spirit of the signalling models, Myers and Majluf (1984) propose the adverse selection model to predict the timing of firms' issues of equity. The authors suggest that managers tend to issue new shares when they believe the current stock price is overvalued. Managers tend to act in the interests of existing shareholders, who can benefit from an SEO if the overvalued shares are issued only to new investors. In contrast, managers are unwilling to issue undervalued shares, to avoid decreasing the wealth of existing shareholders. Thus, rational investors perceive an SEO announcement as a signal that the issuer's stocks are overvalued. According to another asymmetry information model, developed by Miller and Rock (1985), an unanticipated equity issue is used to compensate for factors that create a shortfall compared to the expected cash flow, such as low earnings. This shortfall can be interpreted as a decrease in firm value and can result in a negative announcement return.

A negative market reaction can also be triggered by the intensified agency problem between managers and investors in an SEO. Jensen and Meckling (1976) posit that the managerial entrenchment effect is negatively related to managers' stock ownership. New equity financing is likely to reduce managerial ownership and thus managers have more discretion to consume perquisites and exert sub-optimal investments, resulting in a decline in stock price. Additionally, the introduction of a new equity issue increases the supply of shares to the market. Kalay and Shimrat

(1987) state that a negative SEO announcement return can be explained by the price pressure due to the down-sloping demand curve. Petajisto (2009) supports this argument by modelling a negative demand curve with a fixed cost.

However, several studies find there is a positive market reaction to placing and open offers (e.g., Slovin et al., 2000; Armitage, 2002; Barnes and Walker, 2006). This reaction can be interpreted as a positive signal of firm quality to the market. Moreover, placing brings new investors into the firm, which enhances external monitoring for corporate control (Slovin et al., 2000).

### 3.3.4 Hypotheses Development

In this section, several hypotheses are developed to test whether ownership has an effect on the choice of issue method, offer price discount, and announcement effect. To capture the different incentives of various investors, this study proposes three ownership variables, for ownership concentration, managerial shares ownership, and institutional ownership.

The first discussion concerns the influence of ownership on the probability of firms choosing various issue methods. More specifically, this section discusses which method firms decide to use in the first place and which method is the last choice.

Ownership concentration is used to capture the incentives of large shareholders, measured as the sum of the percentage of shares owned by block holders.[10] Given that concentrated ownership generates strong monitoring (Shleifer and Vishny, 1986), it is assumed that block holders have a strong incentive to influence the decision of equity issue. Placing will decrease ownership concentration and thus the control of block holders may be diluted. To avoid such a loss in the private benefits of control, block holders are more likely to press the firm to choose a right-preserving issue over placing.

To capture the incentives of entrenched managers, this Chapter applies managerial share ownership, defined as the sum of the ownership of executive and non-executive directors. The results of previous studies with respect to the impact of managerial ownership on the choice of issue method are mixed. According to the managerial self-dealing hypothesis, managers are assumed to engage in self-serving behaviour and are therefore concerned about maintaining control and wealth (Cronqvist and Nilsson, 2003). In this setting, a right-preserving issue is preferred. Managerial ownership can be preserved and managers do not have to experience any reduction in control benefits (Cronqvist and Nilsson, 2003). Moreover, placing may lead to enhanced monitoring to constrain the scale of managerial opportunism (Shleifer and Vishny, 1986). Thus, entrenched managers are unwilling to accept such monitoring pressure.

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[10] Here, a block holder in a UK firm is defined as one owning over 3% of the firm's share.

However, the managerial entrenchment hypothesis suggests that entrenched managers are more likely to choose placing as the issue method. Barclay et al. (2007) propose that placing is often made to passive investors, thereby helping management solidify its control of the firm. Managers seek target investors, usually affiliated institutional investors, to participate in placing. Such target investors should vote with managers on decisions of corporate policy, leading to a more entrenched management (Barclay et al., 2007; Armitage, 2010). In this setting, placing will be used as a first choice.

To explore the role of institutional investors in the choice of SEO method, this Chapter constructs an institutional ownership variable. It is measured as the sum of shares held by all institutional investors whose shareholding is over 3% of the firm's share. According to the monitoring hypothesis (Shleifer and Vishny, 1986), institutional ownership, as a proxy for the monitoring of management, plays an important role in corporate governance. In the SEO process, institutional investors are the major target in bookbuilding activities. In the UK, placing is the most common issue method that can create a monitoring incentive by adding institutional investors. In this setting, placing is preferred when institutional ownership is lower.

Based on the discussion above, this study proposes the following hypotheses.

***Hypothesis 1a:*** *Ownership-concentrated firms are less likely to choose placing as the equity issue method.*

***Hypothesis 1b:*** *Firms with higher managerial ownership are more likely to choose placing as the equity issue method.*

***Hypothesis 1c:*** *Firms with lower institutional ownership are more likely to choose placing as the equity issue method.*

This study now discusses the role of ownership in SEO discounts and announcement returns. According to the argument that SEO discounts are partially due to price pressure resulting from a down-sloping demand curve, Intintoli and Kahle (2010) find that higher ownership concentration may decrease public float, resulting in increased price pressure and a higher offer discount. They also find that this effect becomes stronger in firms with low trading volume. Moreover, concentrated ownership will lead to low market liquidity and such high undiversified holding risk will increase the cost of capital. In this case, investors require a higher discount as compensation for investing in low-liquidity stock.

In the context of conflicts of interest between managers and shareholders, managers are assumed to have an informational advantage about firm value over outside shareholders. Myers and Majluf (1984) argue that a firm's equity issuance is perceived as the manager's belief that the firm is overvalued. Moreover, managerial entrenchment is likely to be more severe for firms with higher managerial ownership. Entrenched managers will pursue their own wealth or empire building in management at the expense of outside shareholders (Demsetz, 1983; Fama and Jensen, 1983). In this case, investors believe that SEOs are motivated by

overvaluation and thus require deeper discounts in offer price. In addition, since managers hold large proportions of firm shares, low market liquidity and high undiversified holding risk will increase the cost of equity. In this setting, the offer price discount should be larger in such firms.

These arguments make us propose the following hypotheses.

***Hypothesis 2a:*** *Ownership-concentrated firms will price the offer at a higher discount and receive a lower announcement return.*

***Hypothesis 2b:*** *Firms with high managerial ownership will price the offer at a higher discount and receive a lower announcement return.*

Given the fact that institutional investors are one of the major investor groups in the UK, the role of institutional investors in SEOs has become an important question in academic research. According to the manipulative trading hypothesis (Kyle, 1985; Gerard and Nanda, 1993), institutional investors attempt to trade the stock strategically as they receive private information prior to a public announcement. Institutional investors may sell the stock when they receive positive private information and thus pre-SEO stock prices will fall, resulting in a higher offer discount. Although there is a loss due to such short-term price manipulation before the SEO, institutional investors can benefit from the large allocation of new shares at the declined offer price and then sell these allocations after the SEO. In this case, the SEO discount is intended to compensate uninformed investors, consistent with

the winner's curse hypothesis in the IPO allocation process (Rock, 1986). This hypothesis implies that institutional investor trading behaviour acts in the opposite direction of private information.

However, Chemmanur et al. (2009) find the opposite results, that institutional investors are likely to buy the issuing firm's stock before the SEO if they possess positive private information. By investigating the institutional investor's trading behaviour before and after the SEO, they find that the pre-SEO net buying of institutional investors is associated with greater SEO allocation and more institutional investors' post-offer net buying, where net buying is measured as total institutional buying minus the sale of the SEO firm's shares. This result can be interpreted through the information production hypothesis. When Institutional investors identify a good offer from private information, they have an incentive to participate in this offer and request more allocations. To lower the risk of SEO failure, institutional investors will provide the issuing firm or underwriter with the information regarding the market demand. Such information production effectively decreases the information asymmetry between the issuing firm and shareholders. This makes SEO price setting easier and the offer discount can be set lower.

According to the monitoring hypothesis (Shleifer and Vishny, 1986), institutional ownership, as a proxy for the monitoring of management, plays an important role in corporate governance. Higher institutional ownership can improve shareholder value by constraining managerial discretion to waste corporate resources through inefficient investment. Moreover, higher institutional ownership can partially

resolve the free rider problem. All shareholders in the firm can benefit from active monitoring carried out by institutional shareholders, whereas the institutional shareholders have to bear the monitoring cost. Pre-issue institutional ownership suggests that potential monitors are already in place. Thus, new investors are more likely to subscribe for new shares from issuers that already have potential monitors in place.

Zhang (2004) demonstrates that new shares are easier to place when issuing firms have higher pre-issue institutional ownership. Huang and Zhang (2011) further find a negative relation between pre-issue institutional ownership and the SEO offer price discount. Pre-issue institutional holding also suggests existing institutional investors are already familiar with the stock. Gibson et al. (2004) propose that institutional investors have better stock picking ability. They find that institutional holdings can separate above-average SEO firms from underperforming firms. Since institutional investors have better information than individuals, higher institutional ownership implies more informed institutional investors have put their stamp of approval on the firm value. Thus higher institutional ownership signals the better quality of the issuing firm, making it easier for underwriters to market the new offer at a lower discount.

Therefore, this study proposes the following hypothesis.

***Hypothesis 2c:*** *A firm with higher institutional ownership will price the offer at a lower discount and receive a higher announcement return.*

## 3.4 Data Selection and Descriptive Statistics

### 3.4.1 Data Selection

This study examines the seasoned equity issues of firms traded on the LSE from January 1998 through December 2010. The reason why this study uses this research period is that ownership data about UK firms only started in 1997 in Thomson One Banker's database. Moreover, since regulation removed the restriction on the issue size of placings since January 1996, UK firms in the research sample have more discretion to choose the SEO issue method.

The sample excludes firms in the financial industry (Standard Industrial Classification, or SIC, codes 6000–6999) and utilities (SIC codes 4900–4949), since these firms differ dramatically from firms in other industries in their financial reporting, structure, and management. Pure secondary and joint issues are also excluded, following Slovin et al. (2000). This Chapter focuses on issues with proceeds over US$1 million. The data on issue characteristics and ownership information were initially obtained from Thomson One Banker's database. The items of the issue include the announcement date, the offer date, the closing price one day before the announcement date, the offer price, the offer amount, and the issue method. Ownership data include each firm's investor types, investment style, and shareholder equity holdings. Finally, the daily stock price data and financial statement data are from the Datastream databases.

After excluding issues with incomplete data, the final sample consists of 653 seasoned equity issues, distributed over years, and issue methods, as shown in Table 3.1 and Figure 3.1. The whole sample of SEOs is categorized into four subsamples by issue type: ROs, PLs, OOs, and PLOOs.

### 3.4.2 Descriptive Statistics

Table 3.1 and Figure 3.1 report the trends in SEO issue methods over the sample period. As shown in Table 3.1, listed UK firms conducted 653 SEOs over 1998–2010, 156 of which were ROs, 291 were PLs, 54 were OOs, and 152 were PLOOs. There is a general surge in SEOs during 1998–2001. However, the number of SEOs dramatically falls to 36 in 2002, followed by a resurgence during 2002–2005. The number of SEOs reaches its highest level of 142 issues in 2009. A potential interpretation for this pattern is the financial crisis. Financially distressed firms prefer equity to debt to raise additional capital. It is clear that placings are the dominant issue type in the sample, approximately 44.56% of all issues. This finding is consistent with the evidence of Capstaff and Fletcher (2011), who find the proportion of placings is the largest in UK SEOs during 1996–2007. During 2008–2010, almost all UK SEOs were conducted as placings, with 81.25%, 69.01%, and 76.79% of total issues in each of the years, respectively.

*(Please insert Table 3.1 and Figure 3.1 here)*

Table 3.2 presents the mean and median value of the key issue and firm characteristics for the whole sample, as well as for the four subsamples of SEOs by issue type. As shown in panel A, proceeds average US$211.79 million for ROs and US$91.21 million for PLs. This finding suggests that placings raise considerably less capital than rights offers do, consistent with the findings of Barnes and Walker (2006). The average rights offer discount is 18.71%, which is close to the findings of Armitage (2002) and Capstaff and Fletcher (2011), 21% and 21.56%, respectively. Moreover, the mean offer discount on a rights offer is the highest among the four issue types. This indicates that issuers choosing rights offers set the offers at lower prices to guarantee the success of the issuance; in contrast, the lowest price discount occurs for placings, with an average of around 7.83% (median around 7.24%). These results are consistent with the restrictions of the LSE, as discussed in Section 3.2.

Panel B of Table 3.2 reports descriptive statistics for the firm variables of the SEOs. The average ownership concentration is highest for OO issuers and lowest for PLOO issuers (63.98% and 49.04%, respectively). It is notable that placing issuers have the highest average managerial ownership, at 15.38%, while the lowest managerial ownership, 6.34%, is found for the right issuer groups. Another important finding is that the mean ownership and median institutional ownership in right issuers are significantly larger than for other issue types. This means that rights offers cluster more in firms with higher institutional ownership.

This Chapter now focuses on the other firm variables. The average firm size that is measured as the market value of equity is higher for right issuers than for placing issuers (US$286.24 million versus US$256.12 million). It is interesting to note that the largest average firm size is that of PLOO issuers, around US$353.8 million. This finding suggests that PLOO issuers cluster more in the large firm size class. We also find that right issuers have higher returns on equity, a higher market-to-book ratio, and higher leverage levels in comparison to other issuers.

*(**Please insert Table 3.2 here**）*

### 3.4.3 Announcement Returns on SEOs

Table 3.3 reports the results of the announcement returns of UK SEOs. The announcement returns are calculated by referring to the event study method introduced by Asquith and Mullins (1986) and Kang and Stulz (1996). This Chapter applies the cumulative average abnormal return (CAAR) to examine market responses to SEO announcements. The abnormal return (AR) is the unexpected stock return, constructed as the actual return minus the expected return. The average AR (AAR) is the mean of N issuers' ARs for each event window, described as

$$AAR_t = \frac{1}{N} \sum_{i=1}^{N} AR_{it}$$

The CAAR is the sum of the AARs over T days in the event window:

$$CAAR_T = \sum_{t=1}^{T} AAR_t$$

To generate the expected stock return, the literature introduces several models developed from the traditional capital asset pricing model, such as the Fama–French (1993) three-factor model[11] or the Carhart (1997) four-factor model., this Chapter chooses the Carhart four-factor model to estimate the time-series monthly portfolio return,

$$R_{it} - R_{ft} = \alpha_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_T + h_i HML_t + m_i MOM_t + \varepsilon_{it}$$

In the formula above, $R_{it}$ is the average monthly return on the portfolio of issuers during the estimated period, $R_{ft}$ is the monthly Treasury bill rate, $R_{mt}$ represents the actual monthly market returns, and $R_{mt} - R_{ft}$ is the excess market return, which is the proxy for the market factor. The terms SMB and $HML_t$ are obtained from Fama and French (1993), where $SMB_t$ is the size factor, measured as the difference between the returns on the portfolio of small stocks (bottom 30%) and big stocks (top 30%); HML is the value factor, measured as the difference between the returns on the

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[11] Fama and French's (1993) three-factor model can be written formally as $R_{it} - R_{ft} = \alpha_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it}$. The authors propose three stock market factors – excess market return ($R_{mt} - R_{ft}$), size ($SMB_t$), and book to market (HML) – that have strong explanatory power for the differences in the average returns across stocks.

portfolio of high (top 30%) and low (bottom 30%) book-to-market stocks; $MOM_t$ is the momentum factor, measured as the difference between the returns on the portfolio of high- and low-return stocks; and $\alpha_i$ is the average monthly AR on the portfolio of issuers over the estimated period.

The estimated period is chosen as the period of [-260, -60], where day 0 is the announcement date. This Chapter uses t-test statistics to report the significant levels of market reaction to the announcement (e.g., Eckbo and Masulis, 1992; Balachandran et al., 2008). By focusing on the two-day and three-day event windows [0, 1] and [-1, 1], this study finds the means of the CAAR are negative and significant in the group of all SEOs, at -0.03 and -0.06 respectively. This finding is consistent with previous evidence; for example, Asquith and Mullins (1986) and Kange and Stulz (1996) document that the SEO announcement return is negative and statistically significant at around -3%. This Chapter now examines the market reaction to SEOs according to the various issue types. For rights offers, it is notable that both the two- and three-day average excess returns are negative and significant, at -1.25 and -0.81, respectively.

However, for placings, the announcement returns are positive and significant, at 0.18 and 0.08, respectively. These results are consistent with other studies on UK SEOs. For instance, Slovin et al. (2000) report that during 1986–1994 the announcement return is significantly negative in a sample of 220 UK rights offers, while it is significantly positive for a small group of 76 placings. By using a larger sample comprising 268 placings and 600 rights offers during 1989–1998, Barnes

and Walker (2006) also make the same conclusion for SEO announcement returns. Both studies cover the pre-deregulation period and a post-deregulation period.[12] A recent study of Capstaff and Fletcher (2011) calculates the CAARs in the announcement month and finds similar results for market reactions to rights issues and placings over the period 1996–2007. Combined with the previous finding, it can be concluded that market reactions to rights issues are less favourable compared to placings. This indicates that rights issues signal to the market that the issuer's equity is overvalued or its corporate cash flows are lower than expected (Myers and Majluf, 1984; Miller and Rock, 1985). In contrast, placings convey favourable information to the market because they can be viewed as a verification of firm value. It is notable that the two-day average excess returns are highest for open offers, at 1.66. This indicates that open offer announcement appear to send a better-quality signal regarding the issuer compared to other issue types. This finding is inconsistent with Capstaff and Fletcher (2011), who find that issuers choosing PLOOs have the best stock performance in the announcement month compared to other issue types.

Additionally, this Chapter examines the past stock performance of the issuer, measured as the cumulative excess return of SEO stock during the period [-260,-2] prior to the announcement date. The mean past stock performance of all issuers is

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[12] Since 1986 UK firms have been permitted placings. Therefore, the pre-deregulation period is defined as before 1986 and the post-deregulation period means the period since or any time after 1986 (Slovin et al., 2000).

positive and statistically significant at the 1% level. This finding is consistent with previous literature that documents a stock price run-up period prior to a seasoned equity issue (e.g., Marsh, 1982, Loughran and Ritter, 1996, Wu et al., 2005). Comparing the four subsamples, it is also notable that PLOO issuers are the best past stock performers.

*(Please insert Table 3.3 here)*

## 3.5 Empirical Results

In this section, several models are applied to explore the propositions above. This Chapter uses basic logistic regression and multinomial logistic regression to test which factors determine the choice of issue method in SEOs. Then several ordinary least squares models are employed to examine how ownership variables affect the offer price discounts and announcement returns of SEOs.

To analyze the probability of a firm choosing various SEO issue methods, this study conducts the logistic regressions as shown in Table 3.4. this study models the decision to issue an RO, PL, OO, or PLOO respectively, and the results are reported in panels A, B, C, and D, respectively. The dependent variable is defined as a binary variable that takes the value of one if the firm chooses one of the methods over the others.

In panel A, the value of the dependent variable equals one if the issue is conducted by an RO and zero if the issue is conducted by another issue method. Estimations 1 and 2 present that the coefficients of Proceed/MV and Discount to be positive and significant. This result suggests that the larger the issue and the higher the offer price discount, the more likely the firm conducting an SEO is to choose a rights offer. Then ownership concentration (OC) is found to be positively associated with the probability of a firm choosing a rights offer, where OC is used to capture the incentives of large shareholders. Large shareholders are more concerned about their private benefits of control and therefore choose rights offers over control-diluting issues. This results support the hypothesis that rights offers can help a large shareholder maintain control of a firm. For this reason, rights offers are more likely to be chosen in family-controlled firms (Cronqvist and Nilsson, 2003). Additionally, the significant coefficient for Pasts and Market condition suggests that the probability of a firm conducting a rights offer is negatively related to past stock market performance but positively related to market performance.

Panel B reports the results for the probability of a firm choosing a placing. Here, this study focuses on the variables with a significant coefficient, that is, Proceed/ MV, Discount, MSO, institutional OC, Leverage, Pasts and Market condition. Both Proceed/MV and Discount take on a negative role, that is, a smaller issue and a lower discount indicate a higher probability of a UK firm choosing a placing. With respect to the role of MSO, the results suggest higher managerial share ownership increases the probability of a firm choosing placing. This supports the managerial entrenchment hypothesis, where entrenched managers can use placing to solidify

their control of the firm (Barclay et al. 2007). The coefficient of Institutional OC suggests that the lower pre-issue institutional ownership, the higher the probability of a firm choosing placing. This finding is consistent with the argument that firms use placing to improve the monitoring of management (Wruck, 1989). The large shareholders created by placing have an incentive to monitor and benefit from their monitoring efforts. Furthermore, the benefit of adding such large shareholders should be lower if there are more potential monitors in place (Cronqvist and Nilsson, 2003).

Leverage takes on a negative role, where firms with higher debt levels are less likely to issue equity by placing. A higher leverage level indicates active monitoring from debt holders and therefore firms do not have to choose placing for monitoring. In addition, investors are unwilling to buy shares from a highly leveraged firm because it has a higher risk of financial distress and bankruptcy. These result in a higher risk of SEO failure. The results also indicate that firms with better past stock performance tend to select placings and this issue method becomes more popular in a cold market.

Panel C displays the logistic modelling results for a standalone open offer. The coefficients of Proceed/MV and MSO are positive and significant. This finding suggests that firms with larger issues or with higher managerial ownership are more likely to make open offers. It is noteworthy that Size takes on a negative role. Firm size is a proxy of uncertainty and asymmetric information. This result implies that an open offer is more likely to be chosen in firms with a higher level of uncertainty

and asymmetric information. The result in panel D suggest that the larger the issue, the higher the offer discount and the more favourable market conditions can increase the probability of a firm making a combined open offer with placing. The leverage variable has negative coefficients, indicating that financially distressed firms are less likely to select PLOOs.

By combining the results of different models, several variables have a significant effect on issue method choice. First are issue characteristics. Firms with larger issues are less likely to choose PLs. A larger offer discount increases the probability of choosing an RO or PLOO but decreases the likelihood of using a PL. Second is ownership. Ownership-concentrated firms prefer right-preserving issue methods, such as the RO and OO, but dislike the PLOO. This evidence strongly supports the controlling theory. Firms with higher managerial ownership are more likely to use PLs and OOs, which is consistent with the incentive of entrenched managers. Lower institutional ownership can raise the probability of a firm using placing due to enhanced monitoring. Third are the firm variables. Firm size is negatively related to the probability of a firm choosing an OO. Firms with higher leverage are less likely to issue PLOOs. However, the results suggest a firm's ROE and MV/BV have no effect on the choice of SEO. Fourth are firm-specific and market conditions. Better stock performance, as a potential proxy for firm quality, is associated with a higher probability of choosing placings and a lower probability of choosing rights offers. In a hot market, firms are more likely to choose rights offers but less likely to conduct equity issues by placing.

*(Please insert Table 3.4 here)*

To examine the choice of SEO issue method more explicitly, this Chapter applies multinomial logistic regression. The models allow for four possible outcomes: a firm can choose to issue a rights offer, issue a placing, issue an open offer, or conduct combined open offer/placing. The dependent variable is the four issue choices and takes a value of zero for an RO, one for a PL, two for an OO, and three for a PLOO.

The results are consistent with the easier finding on the probability of firm choosing various SEO issue methods in Table 3.4 and provide new insights. First, higher offer discount firms prefer to conduct ROs rather than PLOOs. Second, the coefficient of OC indicates that for the choice between an RO and an OO, ownership-concentrated firms are more likely to conduct SEOs by ROs. Third, for the choice between a PL and an OO, firms with higher managerial ownership are more likely to conduct SEOs by PL. This evidence confirms the managerial entrenched hypothesis. Another important finding is that favourable market conditions significantly decrease the probability of a firm choosing a PL or a PLOO. Given that placing is a proxy for value certification, the result implies that firm equity is overvalued in a hot market.

*(Please insert Table 3.5 here)*

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Table 3.6 presents the results of cross-sectional tests on SEO offer price discounts. It is notable that the coefficient for proceeds/MV is significantly positive, indicating that the larger the issue size, the higher the discount. This result strongly supports the downward-sloping demand and price pressure hypotheses Corwin (2003).

This Chapter now observe the roles of ownership variables in SEO price setting. The coefficients of the three ownership variables OC, MSO, and institutional OC are significant. Here OC plays a positive role, suggesting that firms with higher ownership concentration tend to set offers at a lower price, that is, a higher discount. Concentrated ownership is more likely to result in a less public float and lower market liquidity, so investors require a larger discount to compensate for their investment in illiquid stock (Intintoli and Kahle, 2010).

The positive relation between managerial ownership and offer discounts can be explained by the managerial entrenchment hypothesis. Managers have an incentive to place shares with those buyers who may be passive investors or managerial investors. Thus, a higher discount needs to be used in compensation for monitoring (Barclay et al., 2007). However, firms with higher institutional ownership tend to offer a lower discount. Under the monitoring hypothesis, the information asymmetry between managers and shareholders is reduced by the presence of institutional monitors. Moreover, investors are more likely to participate in the placing that the issuer already has active monitors (usually institutional investors),

because they can directly benefit from existing monitoring and do not have to be concerned about the free rider problem. Additionally, large institutional holdings imply the stock's value has been approved by institutional investors. Therefore, it is easier for issue new shares with marketing and the offer discount will be lower.

The evidence shows that smaller firms are more likely to set the discount at a high level. This result implies firms have to offer a deeper discount to compensate for the high level of information asymmetry (e.g., Corwin, 2003). Leverage has a significantly negative effect, which is inconsistent with the theory that high leverage reduces information asymmetry due to monitoring by creditors. This evidence can be explained as follows: To guarantee the success of an SEO, a financially distressed firm must price its offer with a high discount.

Furthermore, the results suggest that a pre-issue stock run-up decreases the offer discount. Better stock performance reveals positive information to the market, which can increase investor willingness to participate in the SEO. Another important finding is that the offer price discount is higher when the market is hot. This may be explained as equity issues clustering in a hot market, such that the competition among issuers becomes intense. Therefore, a firm has to use a higher discount to gain the attention of investors.

*(Please insert Table 3.6 here)*

Table 3.7 reports the cross-sectional analysis of SEO announcement returns. The dependent variable is defined as the three-day [-1, 1] cumulative abnormal return with respect to the announcement date. First, it is shown that the offer price discount is negatively related to the announcement return in all estimations. The offer discount can appear to be a signal of firm quality to the market (e.g., Slovin et al. 2000; Balachandran et al. 2008). A lower price discount signals that the firm has high quality and thus the market response to its SEO will be more favourable, resulting in a higher announcement return.

The coefficient of MSO is negative and significant, suggesting higher managerial share ownership and a less favourable market reaction. This result can be explained by the underinvestment problem (Myers and Majluf, 1984) and the managerial entrenchment hypothesis. The underinvestment problem becomes severe in high managerial ownership firms. Because entrenched managers have more discretion to pursue their wealth, they may even act against firm interests. The SEO of such firm is more likely to convey managers' belief that the firm is overvalued, resulting in a lower announcement return. As expected, the results suggest that larger pre-issue institutional ownership leads to better SEO outcome. This is because the strong monitoring carried out by institutional investors may press managers into making optimal financing and investment decisions. Moreover, the rest of the shareholders can benefit from this effort.

The evidence also suggests that a higher announcement return can be driven by better pre-issue stock performance. The results on market condition suggest that

market reactions to announcements are more favourable in a hot market, leading to a lower indirect cost of equity issue. This finding strongly supports the market timing hypothesis. Firms are market timers. They are more likely to issue seasoned equity at a time when the cost of equity is temporarily low.

To examine whether the issue method can influence market reactions to SEO announcements, we further include four dummy variables (RO, PL, OO, PLOO) in the regressions of panel B. Consistent with the earlier finding, right offers incur a negative market reaction, while market reactions to placings are more favourable. A potential explanation for the latter result is that a placing is a proxy for firm value certification Shares in a placing are usually purchased by institutional investors, who are expected to have superior information about firm value. As a result, the market believes that placing is less likely to be conducted by an overvalued firm (Eckbo and Masulis, 1992; Cronqvist and Nilsson (2003).

*(Please insert Table 3.7 here)*

## 3.6 Conclusions

This chapter extends the existing knowledge of UK SEO methods along the following three aspects: the probability of the choices of alternative SEO methods, SEO price setting, and market reactions to SEO announcements. In this chapter, we focus on examining the influence of firm ownership structure on these three issues

by constructing three measures: ownership concentration, managerial share ownership, and institutional ownership.

First, this chapter examines how and why UK firms choose one issue method over another in SEO issuances among four major SEO methods: ROs, PLs, OOs, and PLOOs. The results provide reliable evidence to strongly support the controlling hypothesis that block holders press a firm into choosing a right-preserving issue to maintain their voting rights and control. Moreover, the evidence suggests that firm with firms with high ownership concentration prefer ROs over OOs as issue method, when they conduct SEO. By contrast, the PL is the last choice for these firms. Consistent with the findings of Barnes and Walker (2006), the results also suggest that firms with higher managerial ownership are most likely to choose placing, supporting the argument that the use of placing can strengthen managerial control (Barclay et al. 2007). Institutional ownership, as a proxy for monitoring effects, is negatively associated with the probability of conducting an SEO by placing. Given that placing can improve the monitoring of management, firms that already have monitors are less likely to implement placing.

This chapter also analyzes the role of ownership in the SEO price-setting process. The results indicate that for issuing firms with concentrated ownership and a high level of managerial ownership, investors may require large offer price discounts since the stocks of these firms present lower market liquidity. this study also finds empirical evidence to support the monitoring hypothesis. Since institutional holdings relate to the verification of firm quality, firms with higher institutional

ownership are likely to set the offer at a higher price, that is, a lower discount, consistent with the monitoring hypothesis.

Furthermore, this chapter examines market reactions to SEOs by different issue type. Consistent with the findings of previous UK SEO studies, this study find s that PLs and PLOOs generate significantly positive announcement returns, while market reactions to announcements of an RO is significantly negative. This result indicates that a PL or a PLOO is a positive signal of firm value and leads to lower indirect costs, but the use of an RO conveys a negative signal and entails larger indirect costs.

This Chapter further investigates the role of ownership in such an issue. The finding shows that SEO announcement returns decrease with managerial ownership because of increased agency problems and adverse selection costs. Investors believe that entrenched managers have a strong incentive to issue equity when firms are overvalued. Moreover, institutional ownership has a positive effect on SEO announcement returns, which is also consistent with the monitoring hypothesis.

Notably, the results also strongly support market timing theory. Announcement returns are higher (lower) when SEOs are conducted in a hot (cold) market. Firms are likely to issue equity when the indirect cost is relatively low. Further, firms are likely to choose ROs when the stock market is favourable, while they prefer placings in a cold market. Since placing is value certification, overvalued (undervalued) firms are less (more) likely to choose placing as the issue method.

This result implies that SEOs in a hot market are likely to be motivated by firm overvaluation.

# Appendix: Variables Definitions

| Variable | Definition | Source |
|---|---|---|
| **Issuer characteristics** | | |
| Discount | 1- Offer price/price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. | Thomson One Banker |
| Proceed | Gross proceeds. For missing data, the value is constructed as the number of new shares times the offer price. | Thomson One Banker |
| Proceeds/MV | The ratio of proceeds divided by the issuer's market value. | Thomson One Banker and DataStream |
| RO | Dummy. Takes the value of one for a rights offer and zero for the others. | Thomson One Banker |
| PL | Dummy. Takes the value of one for placing and zero for the others. | Thomson One Banker |
| OO | Dummy. Takes the value of one for an open offer and zero for the others. | Thomson One Banker |
| PLOO | Dummy. Takes the value of one for the combined offer of placing–open offer and zero for the others. | Thomson One Banker |
| **Ownership characteristics** | | |
| OC | Ownership concentration is the sum of shares held by block holders with at least 3% share stakes. | Thomson One Banker |
| MSO | MSO represents managerial share ownership, defined as the sum of the ownership of executive and non-executive directors. | Thomson One Banker |
| Institutional OC | Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors. | Thomson One Banker |

| Variable | Definition | Source |
|---|---|---|
| **Firm characteristics** | | |
| MV | The issuer's market value. | Datastream |
| Size | the natural logarithm of market value | Datastream |
| ROE | The ratio of net income over the book value of equity. | Datastream |
| MV/BV | The ratio of the market value of equity to the book value of equity. | Datastream |
| Leverage | The ratio of total debt to total assets. | Datastream |
| Pasts | Past stock performance is defined as the CAAR for SEO firms during the estimated period [-260, -2] prior to the announcement day. | Datastream |
| Market condition | Past market condition is defined as the cumulative equal-weighted market returns during the estimated period [-260, -2] prior to announcement day. | Datastream |

**Table 3.1 Trend in SEO Issue Method by UK Firms from 1998 to 2010**

This table presents the annual number of SEOs listed on LSE from January 1996 to December 2010. The whole sample of SEOs is categorized into four subsamples by issue type: rights offers (RO), placings (PL), open offers (OO) and issues that combined a placing with an open offer (PLOO).

| Year | RO | PL | OO | PLOO | Total | RO% | PL% | OO% | PLOO% | Total% |
|------|-----|-----|-----|------|-------|-------|-------|-------|--------|--------|
| 1998 | 7 | 5 | 1 | 5 | 18 | 38.89 | 27.78 | 5.56 | 27.78 | 100 |
| 1999 | 8 | 9 | 1 | 4 | 22 | 36.36 | 40.91 | 4.55 | 18.18 | 100 |
| 2000 | 14 | 15 | 2 | 10 | 41 | 34.15 | 36.59 | 4.88 | 24.39 | 100 |
| 2001 | 18 | 43 | 7 | 10 | 78 | 23.08 | 55.13 | 8.97 | 12.82 | 100 |
| 2002 | 9 | 7 | 9 | 11 | 36 | 25.00 | 19.44 | 25.00 | 30.56 | 100 |
| 2003 | 10 | 9 | 3 | 20 | 42 | 23.81 | 21.43 | 7.14 | 47.62 | 100 |
| 2004 | 10 | 9 | 7 | 25 | 51 | 19.61 | 17.65 | 13.73 | 49.02 | 100 |
| 2005 | 17 | 5 | 1 | 32 | 55 | 30.91 | 9.09 | 1.82 | 58.18 | 100 |
| 2006 | 14 | 12 | 2 | 19 | 47 | 29.79 | 25.53 | 4.26 | 40.43 | 100 |
| 2007 | 12 | 10 | 7 | 4 | 33 | 36.36 | 30.30 | 21.21 | 12.12 | 100 |
| 2008 | 3 | 26 | 2 | 1 | 32 | 9.38 | 81.25 | 6.25 | 3.13 | 100 |
| 2009 | 31 | 98 | 7 | 6 | 142 | 21.83 | 69.01 | 4.93 | 4.23 | 100 |
| 2010 | 3 | 43 | 5 | 5 | 56 | 5.36 | 76.79 | 8.93 | 8.93 | 100 |
| Total | 156 | 291 | 54 | 152 | 653 | 23.89 | 44.56 | 8.27 | 23.28 | 100 |

**Figure 3.1 Trend in SEO Issue Method by UK Firms from 1998 to 2010**

This figure presents the trend in SEO issue method by UK firms listed on LSE from January 1996 to December 2010. The whole sample of SEOs is categorized into four subsamples by issue type: rights offers (ROs), placings (PLs), open offers (OOs) and issues that combined a placing with an open offer (PLOOs).
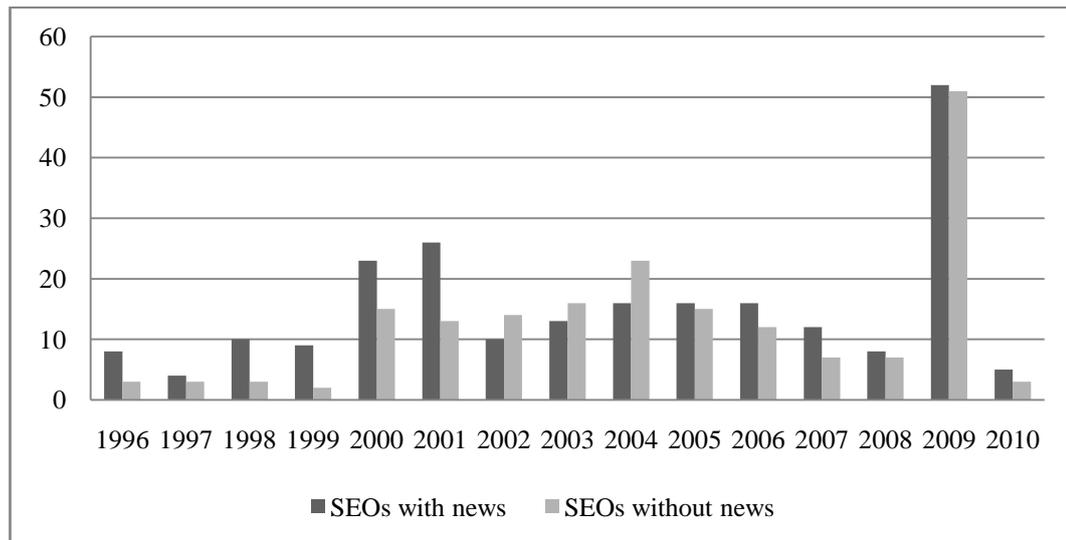
**Table 3.2 Issue and Firm Characteristics of SEOs**

The table presents the mean, median and standard deviation of issue (Panel A) and firm characteristics (Panel B) for UK SEOs (excluding utilities and financials) from 1998 to 2010. All SEOs are divided into four subsamples by issue type: rights offers (RO), placings(PL), open offers(OO) and issues that combined a placing with an open offer(PLOO). Issue characteristics are obtained from Thomson One Banker. Financial factors are obtained from DATASTREAM. Proceed is the SEO offer amount in millions of US dollars. Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. OC is the sum of shares held by block holders with at least 3% share stakes. MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors. Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors. MV is the market value of firm's equity. ROE is the ratio of net income over the book value of equity. MV/BV is the ratio of the market value of equity to book value of equity. Leverage is the ratio of total debt to total asset.

| | RO | | | PL | | | OO | | | PLOO | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variable | Mean | Median | Std | Mean | Median | Std | Mean | Median | Std | Mean | Median | Std | Mean | Median | Std |
| **Panel A Issue characteristics** | | | | | | | | | | | | | | | |
| **Proceed ($ mil)** | 211.79 | 119.70 | 219.68 | 91.21 | 18.85 | 243.12 | 158.83 | 88.08 | 212.11 | 182.91 | 87.55 | 206.39 | 146.90 | 55.30 | 221.48 |
| **Discount (%)** | 18.71 | 12.94 | 23.14 | 7.83 | 7.24 | 25.42 | 13.27 | 12.37 | 31.13 | 15.80 | 13.71 | 33.14 | 12.74 | 10.31 | 26.61 |

Table 3.2 Continued

| Variable | RO | | | PL | | | OO | | | PLOO | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | Median | Std | Mean | Median | Std | Mean | Median | Std | Mean | Median | Std | Mean | Median | Std |
| **Panel B SEO firm characteristics** | | | | | | | | | | | | | | | |
| **OC (%)** | 52.85 | 45.12 | 37.24 | 50.86 | 49.92 | 27.4 | 63.98 | 68.46 | 32.94 | 49.04 | 44.96 | 28.77 | 51.20 | 49.23 | 38.97 |
| **MSO (%)** | 5.66 | 1.76 | 11.06 | 13.76 | 0.97 | 28.03 | 12.84 | 3.61 | 21.63 | 6.17 | 2.33 | 2.33 | 9.98 | 1.77 | 21.59 |
| **Institution OC (%)** | 35.25 | 32.09 | 26.69 | 34.68 | 31.90 | 26.02 | 28.98 | 21.14 | 22.72 | 31.79 | 28.33 | 25.78 | 33.67 | 31.82 | 25.89 |
| **MV ($mil)** | 286.24 | 95.02 | 481.10 | 256.12 | 52.04 | 432.26 | 162.05 | 60.54 | 327.64 | 353.80 | 94.61 | 688.51 | 278.27 | 406.25 | 468.46 |
| **ROE (%)** | 13.28 | 7.00 | 16.02 | 2.01 | 0.91 | 6.01 | 11.05 | 3.57 | 16.74 | 2.99 | 3.21 | 78.59 | 5.68 | 4.81 | 39.44 |
| **MV/BV** | 3.95 | 1.59 | 13.27 | 3.44 | 1.83 | 11.72 | 1.78 | 1.15 | 11.60 | 3.22 | 2.43 | 13.52 | 3.37 | 1.57 | 13.04 |
| **Leverage (%)** | 26.39 | 24.17 | 23.11 | 25.98 | 26.39 | 24.17 | 22.18 | 18.14 | 20.17 | 20.41 | 15.81 | 20.01 | 24.47 | 22.13. | 21.27 |
| **No. of Obs** | | 156 | | | 291 | | | 54 | | | 152 | | | 653 | |

**Table 3.3 Announcement Return on SEOs**

This table reports past stock performance of SEO issuers and SEO announcement returns in percentage for UK SEOs (excluding utilities and financials) from 1998 to 2010, using the Carhart four-factor model (1997). The whole sample of SEOs is categorized into four subsamples by issue type: rights offers (RO), placings (PL), open offers (OO) and issues that combined a placing with an open offer (PLOO). Past stock performance is defined as the cumulative average abnormal return for SEO issuers during the period [-260, -2] prior to announcement day, where announcement day is set as zero. This study highlights the 2-day [-1, 0] and 3-day [-1, 1] announcement windows. The t-test is used under the null hypothesis of zero abnormal return. The superscripts ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| Event windows | RO | | PL | | OO | | PLOO | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | P-value | Mean | P-value | Mean | P-value | Mean | P-value | Mean | P-value |
| Past stock performance (%) | 0.042*** | [<.0001] | 0.097 | [0.162 ] | 0.024 | [0.772 ] | 0.143*** | [<.0001] | 0.089*** | [<.0001] |
| CAAR [0, 1] (%) | -1.251*** | [<.0001] | 0.183 | [0.716 ] | 1.663 | [0.203 ] | 0.024 | [0.123] | -0.074* | [0.077 ] |
| CAAR [-1,1] (%) | -0.818** | [0.032 ] | 0.083* | [0.095 ] | 0.784 | [0.261 ] | 0.133* | [0.063] | -0.063* | [0.065] |
| No. of Obs | 156 | | 291 | | 54 | | 152 | | 653 | |

## Table 3.4 Logistic Regression of SEO Issue Method Choice

This table reports the results of modelling the probability of choosing four alternative SEO methods, using multivariate logistic regression analysis. The sample comprises 653 UK SEOs during 1998-2010. Proceed/MV is the SEO offer amount divided by market value of equity. Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. OC is the sum of shares held by block holders with at least 3% share stakes.MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors; Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors; Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors. Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors. Size is the log of the market value of equity. ROE is the ratio of net income over the book value of equity.MV/BV is the ratio of the market value of equity to book value of equity. Leverage is the ratio of total debt to total asset. Pasts is past stock performance, which is defined as the cumulative average abnormal return for SEO firms during the estimated period [-260, -2] prior to announcement day. Market condition is defined as cumulative equal-weighted market returns for the same estimated period. All regressions include year and industry fixed effects.The p-value for the chi-squared test statistic is shown in square brackets. The superscripts ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**Panel A Dependent variable is one for firms choosing RO and zero for firm choosing other issue method**

| Variables | Estimation 1 | | Estimation2 | |
|---|---|---|---|---|
| | Coefficient | P-value | Coefficient | P-value |
| Intercept | -2.032*** | [0.000] | -2.034*** | [0.000] |
| Proceed/MV | 0.392*** | [<.0001] | 0.362*** | [<.0001] |
| Discount | 0.106* | [0.082] | 0.139* | [0.084] |
| OC | 0.206* | [0.052] | | |
| MSO | | | 0.057 | [0.137] |
| Institutional OC | | | 0.052 | [0.182] |
| Size | -0.082 | [0.334] | -0.077 | [0.383] |
| ROE (%) | 0.083 | [0.433] | 0.084 | [0.107] |
| MV/BV | 0.032 | [0.135] | 0.037 | [0.134] |
| Leverage | 0.358 | [0.522] | 0.344 | [0.521] |
| Pasts | -1.176*** | [0.000] | -1.152*** | [0.000] |
| Market condition | 2.096* | [0.071] | 2.132* | [0.077] |
| Pseudo-$R^2$ | 0.427 | | 0.432 | |

**Panel B Dependent variable is one for firms choosing PL and zero for firm choosing other issue method**

| Variables | Estimation 1 | | Estimation2 | |
|---|---|---|---|---|
| | Coefficient | P-value | Coefficient | P-value |
| Intercept | 0.682 | [0.220] | 0.306 | [0.577] |
| Proceed/MV | -0.573*** | [<.0001] | -0.577*** | [<.0001] |
| Discount | -0.934* | [0.057] | -0.082* | [0.091] |
| OC | -0.094 | [0.791] | | |
| MSO | | | 0.015** | [0.024] |
| Institutional OC | | | -0.048** | [0.017] |
| Size | 0.123 | [0.147] | 0.125 | [0.157] |
| ROE (%) | -0.204 | [0.106] | -0.172 | [0.158] |
| MV/BV | -0.033 | [0.194] | -0.038 | [0.344] |
| Leverage | -1.378** | [0.020] | -1.294** | [0.023] |
| Pasts | 0.824** | [0.025] | 0.832** | [0.021] |
| Market condition | -3.214*** | [0.000] | -4.021*** | [0.000] |
| Pseudo-$R^2$ | 0.59 | | 0.43 | |

**Table 3.4 Continued**

**Panel C Dependent variable is one for firms choosing OO and zero for firm choosing other issue method**

| Variables | Estimation 1 | | Estimation2 | |
|---|---|---|---|---|
| | Coefficient | P-value | Coefficient | P-value |
| Intercept | -1.853** | [0.041] | -0.964 | [0.228] |
| Proceed/MV | 0.245** | [0.012] | 0.283** | [0.013] |
| Discount | -0.163 | [0.835] | 0.017 | [0.854] |
| OC | 0.013** | [0.023] | | |
| MSO | | | 0.014* | [0.091] |
| Institutional OC | | | -0.011 | [0.328] |
| Size | -0.367** | [0.013] | -0.429*** | [0.001] |
| ROE (%) | 0.088 | [0.487] | 0.088 | [0. 426] |
| MV/BV | 0.035 | [0.147] | 0.032 | [0.112] |
| Leverage | -0.093 | [0.928] | -0.268 | [0.763] |
| Pasts | 0.304 | [0.557] | 0.282 | [0.557] |
| Market condition | -2.683 | [0.124] | -2.716 | [0.116] |
| Pseudo-$R^2$ | 0.394 | | 0.399 | |

**Panel D Dependent variable is one for firms choosing PLOO and zero for firm choosing other issue method**

| Variables | Estimation 1 | | Estimation2 | |
|---|---|---|---|---|
| | Coefficient | P-value | Coefficient | P-value |
| Intercept | -2.042*** | [0.000] | -2.158*** | [0.000] |
| Proceed/MV | 0.283*** | [<.0001] | 0.258*** | [<.0001] |
| Discount | 0.852* | [0.083] | 0.822* | [0.092] |
| OC | -0.074** | [0.041] | | |
| MSO | | | -0.011 | [0.111] |
| Institutional OC | | | -0.057 | [0.219] |
| Size | 0.078 | [0.452] | 0.081 | [0.345] |
| ROE (%) | -0.025 | [0.994] | -0.050 | [0.958] |
| MV/BV | -0.014 | [0.487] | -0.018 | [0.318] |
| Leverage | -1.903*** | [0.008] | -1.848*** | [0.002] |
| Pasts | 0.211 | [0.545] | 2.450 | [0.477] |
| Market condition | 3.103** | [0.018] | 3.135*** | [0.008] |
| Pseudo-$R^2$ | 0.427 | | 0.433 | |

**Table 3.5 Multinomial Logistic Regression of SEO Issue Method Choice**

This table reports the results of modelling the probability of choosing four alternative SEO methods, using multinomial Logistic regression. The sample comprises 653 UK SEOs during 1998-2010. Proceed/MV is the SEO offer amount divided by market value of equity. Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. OC is the sum of shares held by block holders with at least 3% share stakes.MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors. Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors. Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors. Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors. Size is the log of the market value of equity. ROE is the ratio of net income over the book value of equity.MV/BV is the ratio of the market value of equity to book value of equity. Leverage is the ratio of total debt to total asset. Pasts is past stock performance, which is defined as the cumulative average abnormal return for SEO firms during the estimated period [-260, -2] prior to announcement day. Market condition is defined as cumulative equal-weighted market returns for the same estimated period. All regressions include year and industry fixed effects.The p-value for the chi-squared test statistic is shown in square brackets. The superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. The superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**Panel A: Test results for OC**

| Variables | RO versus PL | | RO versus OO | | RO versus PLOO | | PL versus OO | | PL versus PLOO | | OO VS PLOO | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value |
| Intercept | -1.733** | [0.010] | -1.511 | [0.110] | -1.499** | [0.023] | 0.222 | [0.821] | 0.234 | [0.731] | 0.012 | [0.990] |
| Proceed/MV | 0.652*** | [<.0001] | 0.503*** | [<.0001] | 0.557*** | [<.0001] | -0.148** | [0.032] | -0.948 | [0.234] | 0.536 | [0.655] |
| Discount | 0.649** | [0.019] | 0.595 | [0.290] | 0.828* | [0.084] | -0.520 | [0.910] | -0.379 | [0.358] | 0.233 | [0.609] |
| OC | 0.022* | [0.056] | 0.077* | [0.095] | 0.06 | [0.115] | -0.099** | [0.028] | 0.379 | [0.114] | -0.014*** | [0.008] |
| Size | 0.121 | [0.238] | 0.361** | [0.016] | -0.196 | [0.848] | 0.129 | [0.114] | -0.101 | [0.303] | 0.341** | [0.025] |
| ROE (%) | 0.204 | [0.146] | 0.264 | [0.160] | 0.129 | [0.334] | -0.424 | [0.749] | -0.75 | [0.578] | -0.117 | [0.491] |
| MV/BV | 0.417 | [0.176] | -0.51 | [0.247] | 0.089 | [0.788] | 0.892 | [0.668] | 0.148 | [0.876] | -0.417 | [0.132] |
| Leverage | 0.757** | [0.047] | 0.906 | [0.342] | 0.218 | [0.232] | -0.148 | [0.877] | -0.143** | [0.028] | -1.278 | [0.194] |
| Pasts | -1.435*** | [0.001] | 2.605 | [0.623] | 5.105 | [0.229] | 1.174** | [0.048] | -9.242** | [0.031] | -2.499 | [0.671] |
| Market condition | 4.363*** | [0.001] | -1.437*** | [0.001][ | 5.453*** | [<.0001] | -4.507** | [0.019] | 1.090 | [0.438] | 5.597*** | [0.004] |
| Pseudo-$R^2$ | | | | | | 0.355 | | | | | | |

Table 3.5 Continued

| | RO versus PL | | RO versus OO | | RO versus PLOO | | PL versus OO | | PL versus PLOO | | OO VS PLOO | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Panel B: Test results for MSO and Institutional OC** | | | | | | | | | | | | |
| **Variables** | | | | | | | | | | | | |
| | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value |
| **Intercept** | -0.157** | [0.019] | -0.608 | [0.482] | -1.479** | [0.024] | 0.914 | [0.297] | 0.069 | [0.918] | -0.871 | [0.334] |
| **Proceed/MV** | 0.628*** | [<.0001] | 0.537*** | [<.0001] | 0.539*** | [<.0001] | -0.904* | [0.092] | -0.891 | [0.333] | 0.132 | [0.992] |
| **Discount** | 0.627*** | [0.006] | 0.588 | [0.300] | 0.806* | [0.094] | -0.04 | [0.390] | 0.173 | [0.536] | 0.218 | [0.651] |
| **MSO** | -0.013** | [0.046] | -0.010 | [0.212] | -0.011 | [0.134] | 0.012** | [0.033] | 0.014 | [0.889] | -0.022** | [0.035] |
| **Institutional OC** | 0.031** | [0.029] | 0.076 | [0.294] | 0.630 | [0.214] | 0.044* | [0.063] | 0.031 | [0.554] | 0.013 | [0.866] |
| **Size** | 0.425*** | [0.004] | 0.372*** | [0.004] | -0.119 | [0.906] | 0.306** | [0.039] | -0.107 | [0.286] | 0.423*** | [0.006] |
| **ROE (%)** | 0.526 | [0.129] | 0.251 | [0.153] | 0.124 | [0.367] | 0.489 | [0.714] | -0.78 | [0.576] | -0.127 | [0.459] |
| **MV/BV** | 0.389 | [0.212] | -0.526 | [0.129] | 0.526 | [0.874] | 0.137 | [0.526] | 0.336 | [0.141] | -0.047 | [0.084] |
| **Leverage** | 0.716** | [0.029] | 1.057 | [0.295] | 2.187 | [0.322] | -0.270 | [0.777] | -1.401** | [0.030] | -1.13 | [0.250] |
| **Pasts** | -1.419*** | [0.002] | 2.97 | [0.609] | 4.619 | [0.276] | 1.122* | [0.058] | -9.571** | [0.026] | -1.649 | [0.776] |
| **Market condition** | 4.474*** | [0.001] | -3.87 | [0.984] | 5.517*** | [<.0001] | -4.435** | [0.023] | 1.044 | [0.460] | 5.479*** | [0.006] |
| **Pseudo-R$^2$** | | | | | | 0.385 | | | | | | |

**Table 3.6 The Cross Sectional Regression Analysis of SEO Offer Price Discount**

This table presents the regression results of the SEO discount on issuer financial variables, ownership variables and market condition for UK SEOs from 1998 to 2010. Proceed/MV is the SEO offer amount divided by market value of equity. Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. Ownership concentration is the sum of shares held by block holders with at least 3% share stakes.MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors; Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors; Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors. Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors. Size is the log of the market value of equity. ROE is the ratio of net income over the book value of equity.MV/BV is the ratio of the market value of equity to book value of equity. Leverage is the ratio of total debt to total asset. Pasts is past stock performance, which is defined as the cumulative average abnormal return for SEO firms during the estimated period [-260, -2] prior to announcement day. Market condition is defined as cumulative equal-weighted market returns for the same estimated period. All regressions include year and industry fixed effects.The p-value for the chi-squared test statistic is shown in square brackets. The superscripts ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| Variables | Estimation 1 | | Estimation 2 | |
|---|---|---|---|---|
| | Coefficient | P-value | Coefficient | P-value |
| **Intercept** | 0.306*** | [<.0001] | 0.298*** | [<.0001] |
| **Proceed/MV** | 0.113** | [0.010] | 0.010*** | [0.004] |
| **OC** | 0.012*** | [<.0001] | | |
| **MSO** | | | 0.013*** | [0.002] |
| **Institutional OC** | | | -0.018*** | [<.0001] |
| **Size** | -0.165** | [0.025] | -0.018** | [0.012] |
| **ROE (%)** | -0.058 | [0.102] | -0.051 | [0.492] |
| **MV/BV** | -0.519 | [0.503] | -0.025 | [0.142] |
| **Leverage** | 0.983* | [0.055] | 0.979* | [0.054] |
| **Pasts** | -6.874** | [0.032] | -7.351** | [0.022] |
| **Market condition** | 3.628*** | [0.001] | 3.586*** | [0.003] |
| **Adjusted R$^2$** | 0.113 | | 0.123 | |

**Table 3.7 The Cross Sectional Regression Analysis of SEO Announcement Returns**

This table presents the regression results of the three-day average excess returns return (CAAR[-1,1]) on issuer financial variables, ownership variables and market condition for UK SEOs from 1998 to 2010. Proceed/MV is the SEO offer amount divided by market value of equity. Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors; Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors; Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. MSO represents managerial share ownership, defined as the sum of the ownership of executive and nonexecutive directors. Institutional OC comprises aggregate blocks of at least 3% of the firm's share stakes held by all institutional investors. Size is the log of the market value of equity. ROE is the ratio of net income over the book value of equity.MV/BV is the ratio of the market value of equity to book value of equity. Leverage is the ratio of total debt to total asset. Pasts is past stock performance, which is defined as the cumulative average abnormal return for SEO firms during the estimated period [-260, -2] prior to announcement day. Market condition is defined as cumulative equal-weighted market returns for the same estimated period. All regressions include year and industry fixed effects.The p-value for the chi-squared test statistic is shown in square brackets. The superscripts ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | Panel A The cross sectional regression analysis of SEO announcement returns | | | |
|---|---|---|---|---|
| **Variables** | **Estimation 1** | | **Estimation 2** | |
| | **Coefficient** | **P-value** | **Coefficient** | **P-value** |
| **Intercept** | 0.108 | [0.431] | 0.745 | [0.581] |
| **Proceed/MV** | 0.715 | [0.558] | 0.075 | [0.498] |
| **Discount** | -0.281** | [0.017] | -0.289** | [0.015] |
| **OC** | -0.009 | [0.225] | | |
| **MSO** | | | -0.028** | [0.024] |
| **Institutional OC** | | | 0.022** | [0.031] |
| **Size** | 0.725 | [0.723] | 0.129 | [0.523] |
| **ROE (%)** | -0.552 | [0.826] | -0.059 | [0.800] |
| **MV/BV** | -0.536 | [0.249] | -0.552 | [0.237] |
| **Leverage** | 0.116 | [0.934] | 0.151 | [0.914] |
| **Pasts** | 3.457*** | [0.000] | 3.416*** | [0.000] |
| **Market condition** | 5.737** | [0.035] | 6.008** | [0.028] |
| **Adjusted $R^2$** | 0.043 | | 0.050 | |

**Table 3.7 Continued**

| Variables | Estimation 1 | | Estimation 2 | | Estimation 3 | | Estimation 4 | |
|---|---|---|---|---|---|---|---|---|
| **Panel B: The extended cross sectional regression analysis of SEO announcement returns** | | | | | | | | |
| | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value | Coefficient | P-value |
| **Intercept** | 0.670 | [0.620] | 0.119 | [0.394] | 0.442 | [0.746] | 0.788 | [0.560] |
| **Proceed/MV** | 0.110 | [0.452] | 0.156 | [0.420] | 0.099 | [0.489] | 0.054 | [0.411] |
| **Discount** | -0.287** | [0.014] | -0.300** | [0.011] | -0.289** | [0.014] | -0.279** | [0.018] |
| **MSO** | -0.028** | [0.025] | -0.027** | [0.026] | -0.029** | [0.018] | -0.029** | [0.021] |
| **Institutional OC** | 0.020** | [0.048] | 0.031* | [0.064] | 0.032 | [0.065] | 0.018* | [0.068] |
| **Size** | 0.132 | [0.511] | 0.143 | [0.477] | 0.173 | [0.395] | 0.137 | [0.497] |
| **ROE (%)** | -0.070 | [0.766] | -0.077 | [0.744] | -0.073 | [0.395] | -0.060 | [0.799] |
| **MV/BV** | -0.058 | [0.210] | -0.058 | [0.211] | -0.060 | [0.198] | -0.573 | [0.220] |
| **Leverage** | 0.937 | [0.946] | 0.341 | [0.809] | 0.155 | [0.912] | -0.237 | [0.987] |
| **Pasts** | 3.267*** | [0.000] | 3.312*** | [0.000] | 3.445*** | [0.000] | 3.386*** | [0.000] |
| **Market condition** | 5.804** | [0.033] | 5.567** | [0.043] | 6.315** | [0.021] | 6.272** | [0.022] |
| **RO** | -0.068* | [0.052] | | | | | | |
| **PL** | | | 0.074** | [0.011] | | | | |
| **OO** | | | | | 0.015 | [0.119] | | |
| **PLOO** | | | | | | | -0.052 | [0.383] |
| **Adjusted R$^2$** | 0.052 | | 0.053 | | 0.054 | | 0.051 | |

# Chapter 4 Financial Media and UK Seasoned Equity Offerings

## 4.1 Introduction

This chapter investigates the role of the financial media in UK firm seasoned equity offerings (SEOs). Also known as a follow-on offering, an SEO is an important external financing decision for publicly listed firms to raise capital. The most important considerations for the issuing firms are creating demand for the offering stocks and setting the offer price. Recent research investigates the effect of news media on equity issuance[13] and asset prices.[14] Several studies show that the media can raise short-term demand for a stock (e.g., Barber and Odean, 2008; Da et al., 2010). Moreover, Cook et al. (2006) posit that the news media can influence the demand for new shares and thereby affect the offer price. Contributing to this strand of research, this chapter provides a framework to show whether and how media influence in an SEO can help the issuer raise the offer price.

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[13] See, for example, Cook et al. (2006), Bhattacharya et al. (2009), and Liu et al. (2009).

[14] See, for example, Tetlock (2007), Tetlock et al. (2008), and Fang and Peress (2009).

Public media, such as newspapers, provides investors with a channel to obtain information on individual firms. With the continuous dissemination of new information about firms, investors should adjust their investment decisions accordingly. Media can influence investors' trading behaviour in two ways: first is that the attention-grabbing media coverage should increase the investor recognition of stock, which is an important determinant of investment decisions (e.g. Merton, 1987; Barber and Odean, 2009, Fang and Peress 2009). Merton (1987) argues that investors purchase only the stock of which they are aware, i.e. the stock with high investor recognition. Second is that the content of news can influence the investors' expectation of stocks, resulting in stock prices dynamics (e.g. Tetlock, 2007; Garcia, 2012). Therefore, firms have an incentive to use the media to promote their public reputation and broaden investor recognition, thereby affecting stock prices. This fact has not escaped the attention of researchers and there is a growing literature on the role of the media in corporate finance.

Dyck and Zingales (2002) argue that awareness of the media pushes firms to adjust their corporate policy to make it more acceptable to the public. Focusing on mergers and acquisitions, Ahern and Sosyura (2012) provide evidence that acquirers actively manage the media to boost their stock prices during the negotiation period. Buehlmaier (2012) finds that media coverage can predict takeover outcome. However, while this body of literature indicates that the media have a significant effect on the outcome of important corporate events, it contains

no evidence on the role of the media in SEOs. This chapter's major motivation is therefore to fill this gap.

Two recent papers investigate media influence in equity issuances, both focusing on initial public offerings (IPOs). Cook et al. (2006) argue that pre-offer, the media can promote IPO firms to retail investors by creating pre-offer publicity, resulting in upward offer price revisions. Liu et al. (2009) also find that media coverage is positively related to both the initial returns of the IPO and long-term performance. Given the similarity of IPO and SEO practice, it is implied a similar association between SEOs and the media. However, SEOs offer a different context in which to study the role of the media.

First, investors face less uncertainty and a lower level of asymmetric information when valuing SEO issuers than they face in the case of IPOs. The reason is that the stock prices of SEO issuers are easily observable in the secondary market. Furthermore, the corporate information is more transparent, since public firms have a track record of financial and operation performance. Second, the existing information about SEO issuers should lead to lower media bias, so that media coverage contains more 'genuine news' in the sense of new and factual information. Thus, SEOs allow us to test more clearly whether media coverage influences investor impressions by increasing their exposure to firm news and, further, by framing this news positively or negatively.

For SEO issuers, price setting is highly important. Usually SEOs are priced at a discount and, to raise more capital, issuers want to raise prices, that is, provide a lower discount. The offer price is adjusted by investor demand and there are two potential ways in which media coverage can affect the shift in demand. First, as a proxy for investor attention, media news could attract more investors to participate in the SEO market, resulting in higher demand for offerings and hence a higher offer price (e.g., Cook et al., 2006; Liu et al., 2009). Second, media coverage can temporarily direct sentiment on the part of some investors, such as noise and liquidity investors, raising current stock prices (e.g., Huberman and Regev, 2001; Tetlock, 2007).

Based on these arguments, issuers will consider the effect of the media when price setting. The media shape public image, affect investor opinion, and create the environment in which SEOs are conducted. Consequently, it is implied that more pre-SEO media coverage could reduce the discounting of SEO pricing. Similarly, issuers with positive news are more likely to price SEOs higher.

This study focuses on the media coverage of UK firms during the pre-SEO period. The UK provides a particularly interesting context. Unlike the US market, in the UK the offering characteristics of SEOs, such as the method of flotation, price, and size of SEO offers are fixed at the initial announcement. Issuers can gather information to assess investor demand and determine the offer price only in the pre-announcement period. In this context, issuers have an incentive to promote

their stocks to investors and influence stock prices by producing and disseminating more good news before the SEO announcement.

This paper examines a sample of 415 UK seasoned equity issuances from 1996 to 2010. The starting point of 1996 is chosen because the deal value limitation of private placement was effectively removed in January 1996. All the offering factors are obtained from Thomson One Banker. The issuers' characteristics are obtained from Datastream. To examine the role of the media in the UK SEO market, this chapter collects all firm-related news in the pre-SEO period from the LexisNexis UK database. This database comprises the articles published in the *Financial Times* (London), *The Times* (London), the *Guardian* (London), the *Daily Mirror,* and the *Sunday Mirror*.

This Chapter constructs two media variables based on recent literature. First, media coverage is measured as the summative amount of media news covering the SEO issuer during pre-SEO period. Second, this study constructs the proxy for media sentiment by counting the number of positive words and negative words for each article. Media sentiment is measured as the ratio of positive words minus negative words to total words for each article and then finding the average ratio of all related articles in the pre-SEO period. Positive and negative words are identified by referring to the word list proposed by Loughran and McDonald (2011).

It is shown that there is a significant correlation between pre-SEO media coverage and the discounting of SEO offer price. As predicted, higher media coverage can decrease the discounting of UK SEOs, that is, raise the offer price. Alternatively, issuers covered by less negative media are likely to price offers higher. The findings contribute to the literature by adding new insight into the effect of media content in the case of SEOs. The results also imply that the media may be a determinant in SEO price setting.

This Chapter further explores pre-SEO media influence on announcement returns. The empirical evidence suggests that SEOs with greater pre-SEO media coverage attract less favourable market responses. According to the investor recognition hypothesis (Merton, 1987), a potential explanation is that investors continue to pay attention to the stocks with which they are more familiar. When issuers with high investor attention make SEO announcements, they reach more investors. However, investors already realize that an SEO is a signal for overvalued equities (Asquith and Mullins, 1986; Masulis and Korwar, 1986). In this scenario, most existing and potential investors believe that the issuer is opportunistic and revise the firm's valuation downward. As a result, the announcement return will decrease.

Moreover, the finding is consistent with papers studying media content (e.g., Tetlock, 2007; Tetlock et al., 2008; Garcia, 2012). It supports the argument that media sentiment may distort stock prices by inducing behaviourally biased trading.

Positive media news can induce sentimental investors to be over-optimistic, resulting in higher announcement returns.

This study extends the existing knowledge of the relation between the media and the financial market in the following ways. First, it stresses the importance of considering the role of the media in a seasoned equity issuance, while recent studies focus on the role of the media in IPOs (e.g., Bhattacharya et al., 2009; Cook et al., 2006; Liu et al. 2009). Second, in addition to the common measure of total media coverage, the analysis takes into account the linguistic content of media articles, a better measure for capturing the latest information and direction of public opinion. Third, this is the one of the first study to investigate whether and to what degree media coverage or media content affects the SEO price-setting process. This adds new insight into the determinants of discounting for equity issuance. Fourth, the analysis is also the first to explicitly consider the media's influence on market reactions to SEO announcements. Finally, the study adds new evidence to the previous UK SEO literature by covering the extended 12-year period since January 1996.

The remainder of this chapter proceeds as follows. Section 2 sets out the arguments underlying the main hypotheses by reviewing the related literature. Section 3 describes the sample selection, the construction of the variables, and summary statistics. Section 4 discusses the main findings from the empirical analysis. Section 5 concludes the chapter.

## 4.2 Background and Related Literature

### 4.2.1 Background of UK SEOs

One of the most important financing sources for publicly listed firms to raise capital is the SEO. Many firms conduct multiple SEOs followed by investment policies such as stock-financed mergers (Fama and French, 2005; Rau and Stouraitis, 2011). Thus, an SEO is cited as a major corporate event. In contrast to SEOs in the United States, the empirical research on SEOs in UK firms is still very limited.

In the last two decades, there has been a major change in the choice of offering method for UK firms conducting SEOs. Before 1986, the rights issue was the only method. Subsequently, placing and open offers have appeared. However, before 1990, the issue size of placing was restricted to a maximum monetary value of £3 million. During the period 1990–1995, the maximum size of placing was increased to £15 million. In January 1996, the size limitation was removed (Barnes and Walker, 2006). It is therefore important to consider the timing of SEOs in the UK. Slovin et al. (2000) study the announcement effect of SEOs during the period 1986–1994. Barnes and Walker (2006) examine market reactions and the choice offer method in SEOs during 1989–1998. Ho (2005) investigates the long-term performance of SEOs during 1989–1997. Armitage (2007) focuses on the period 1987–2001 and examines only pre-renounced rights

offers. Iqbal et al. (2009) cover the period 1991–1995 for UK open offers. Our research period covers 1996–2010, when UK firms were unconstrained in the choice of issuing method.

Our SEO sample includes three major issuance methods: rights issues, placings, and open offers. In a rights issue, new shares are offered in proportion to existing shareholders' share holdings when the offer is announced. Under 'pre-emption rights', existing shareholders are entitled to subscribe new shares or can sell the rights to other investors during the prescribed offer period. In the UK, this period usually lasts three weeks, starting on the announcement day (Armitage, 2002). Placing is usually underwritten by investment banks or brokers who market the new shares.

Unlike in the US, the bookbuildings in UK firms start before the SEO announcement date. During this process, issuers make presentations to potential investors. Underwriters purchase new shares from the issuers at a discounted price and in turn sell shares to institutions by private negotiation, benefitting from a placing fee (Barnes and Walker, 2006). Underwriters suffer the risk of failure or undersubscription, which is reflected in higher underwriter fees. Slovin et al. (2000) find that placing is a signal of firm quality and incurs more active external monitoring from new institutional investors. In the UK, open offers include both rights issues and private placing. However, in this type of offer rights cannot be traded during the offer period, which means shareholders only benefit from

purchasing the new shares. Armitage (2002) states that open offers appear to be unique to the UK.

## 4.2.2 SEO Discount

Since the work of Smith (1977), it has been well documented that firms incur a price discount in SEOs. The SEO discount is typically measured as the offer price relative to the closing price of the pre-offer day, divided by the closing price of the pre-offer day. Eckbo and Masulis (1992) find the average discount in US SEOs from 1963 to 1981 to be only 0.44%. Loderer et al. (1991) report that over 1980–1984, the discount is 1.4%. It rises to around 3% in the 1990s (Mola and Loughran, 2004). During the 1980s and 1990s, Corwin (2003) shows that the discount of seasoned offerings increases substantially, averaging 2.2%. Meanwhile, Slovin et al. (2000) examine UK SEOs and find a significant discount of 17% for insured issuers during 1986–1994. Barnes and Walker (2006) report the average discount between 1989 and 1998 is 15%.

The discounting of SEOs is an indirect cost of issuing new shares, based on the uncertainty about firm value, gathered information, and marketing the new shares. The literature provides several potential explanations for discounting in SEOs. In the value uncertainty hypothesis (Ritter, 1984), uninformed investors should require higher compensation for stocks with greater value uncertainty. Corwin (2003) finds that SEO discounting is positively related to the level of uncertainty about firm value. According to the winner's curse problem (Rock, 1986), the

issuer must price the shares at a discount to guarantee that uninformed investors will participate in the new equity issue. Otherwise, informed investors will squeeze uninformed investors out of the good issues and withdraw from the new issue market for the bad issues. Beatty and Ritter (1986) argue that the discounting of SEOs is positively related to the level of ex ante uncertainty about the issue's value.

Furthermore, Benveniste and Spindt (1989) suggest that underwriters attempt to pay for acquiring information from better-informed investors by allocating the new shares at a higher discount. In line with this argument, Aggarwal et al. (2002) demonstrate that in an IPO, underwriters are likely to allocate more shares to institutional investors with a higher discount. Additionally, Corwin (2003) finds that a bigger offer size induces a larger discount, which is consistent with price pressure caused by a downward-sloping demand curve.

### 4.2.3 Announcement Effects on SEOs

Numerous studies have documented that SEOs have a negative average announcement effect (e.g., Asquith and Mullins, 1986; Masulis and Korwar, 1986; Clarke et al., 2002; Corwin, 2003). Asquith and Mullins (1986) explore the phenomenon of offering dilution in equity offerings, where dilution is measured by the change in the ratio of the firm's equity value to the proceeds of the issue. Bayless and Chaplinsky (1996) observe that the equity value of firms declines by around 13% of the issue proceeds after the equity announcement. Interestingly,

Clarke et al. (2002) find that the negative announcement return for secondary offerings is less negative than for SEOs, with -2% versus -3%.

The explanations of the negative price impact of SEOs are often based on the information asymmetry model. Ross (1977) and Leland and Pyle (1977) develop a signalling model to explain the negative announcement return. They suggest that managers have an incentive to maintain their stock ownership if they are highly optimistic with regard to the firm's future performance. Thus equity issuance is a bad signal to the market that managers have negative private information on the firm's prospects, resulting in a fall in stock price. In the spirit of the signalling models, Myers and Majluf (1984) propose an adverse selection model to predict the timing of firms issuing equity. The authors suggest that managers tend to issue new shares when they believe the current stock price is overvalued. Managers tend to act in the interest of existing shareholders, who can benefit from an SEO if the overvalued shares are only issued to new investors. In contrast, managers are unwilling to issue undervalued shares, to avoid decreasing the wealth of existing shareholders. Thus, rational investors perceive an SEO announcement as a signal that the issuer's stocks are overvalued. According to another asymmetry information model, developed by Miller and Rock (1985), an unanticipated equity issue is used to compensate for factors that create a shortfall compared to expected cash flow, such as low earnings. This shortfall can be interpreted as a decrease in the value of the firm and can result in a negative announcement return.

Negative market reactions can also be triggered by the intensified agency problem between managers and investors in an SEO. Jensen and Meckling (1976) posit that the managerial entrenchment effect is negatively related to managerial stock ownership. New equity financing is likely to reduce managerial ownership and thus managers have more discretion to consume perquisites and implement suboptimal investments, resulting in a decline in stock price.

Additionally, the introduction of a new equity issue increases the supply of shares to the market. Kalay and Shimrat (1987) state that negative SEO announcement returns can be explained by the price pressure caused by the down-sloping demand curve. Petajisto (2009) supports this argument by modelling the negative demand curve with a fixed cost.

## 4. 2.4 Media

A growing literature investigates the role of the media in finance and economics. Earlier research finds that media dissemination influences the outcomes of politics and economics through introducing potential bias in the audience's attitude, beliefs, and thereby decision making. Media outlets have a strong liberal bias (Larcinese et al., 2011). Niven (2002) documents that news can not only distort or falsify the facts (distortion bias), but can also favour one side of the issue (content bias). Sometimes journalists are motivated to produce biased content, in which they may spin news to match the audience's preferences (decision-making bias).

These media biases tend to be slanted towards the audience (Entman, 2007; Gentzkow and Shapiro, 2010; Gerber et al., 2009).

Entman (2007) observes that media bias has an effect on political power and democracy in American society. Larcinese et al. (2007) find that the endorsement policy of US newspapers is associated with their coverage of economic issues as a function of the underlying economic conditions and the political affiliation of the incumbent president. By focusing on the event of the election of the governor of Virginia, Gerber et al. (2009) examine the effect of daily newspapers on political behaviour and opinion. They find that media coverage affects reader behaviour and opinion in a direction consistent with the political bias of the media outlet. A study by DellaVigna and Kaplan (2007) provides supporting evidence that voting patterns can be predicted by the entry of Fox News into cable markets. They argue that media could drive a temporary leaning effect for rational voters or a permanent effect for non-rational voters subject to persuasion.

Interestingly, some studies find that the media plays an important role in corporate governance by affecting firm reputation or public image. The relation between media and firm reputation can be interpreted in several ways. First, traditional economic models (e.g., Fama, 1980; Fama and Jensen, 1983) suggest that managers' interests, such as compensation or career, are dependent on shareholder and employer beliefs about whether managers consider their interests in all situations, even where they are not monitored. In this case, managers might use the media to create a belief among investors that they are performing well. Second,

the media effect extends beyond shareholders and employers to the wider society. Third, to protect their further political career, politicians respond to media pressure by introducing corporate law reforms or enforcing existing corporate laws (Dyck and Zingales, 2002). Based on these arguments, Dyck and Zingales (2002) examine the media's role in the private sector's responsiveness to environmental issues. Their evidence reveals better environmental responsiveness in countries with a larger newspaper circulation. They also posit that the media can help pressure managers and directors to act not only in the interests of shareholders, but also in 'socially acceptable' ways. In their paper, public opinion pressure is captured by the diffusion of the media, measured as the circulation of daily newspapers normalized by population.

Using the same media measure, Dyck and Zingales (2004) demonstrate that the media diffusion has an effect on the amount of value that controlling shareholders tend to extract from firms, the so-called private benefits of control. Moreover, Dyck et al. (2008) show that corporate governance abuses can be redressed by media pressure. Additionally, Core et al. (2008) report that the press plays a crucial role in monitoring and affecting CEO compensation practice. The authors find the press is more likely to cover CEOs with high total annual pay. Moreover, their results suggest that negative coverage is more strongly related to measures of excess total annual pay than to raw total annual pay. This finding implies that press articles discuss CEO compensation by using relatively sophisticated access.

More recent papers pay attention to the media's influence on the stock market. Huberman and Regev (2001) study the case of the cancer drug firm EntreMed, whose stock price increased dramatically due to a favourable front-page article in *The Sunday New York Times*, even though this news had been revealed five months earlier in several press reports. The authors' findings suggest that enthusiastic public attention can induce a permanent increase in stock price, even when no genuinely new information has been presented. Chan (2003) examines investor reactions to public news, which is identified as headline news in *The Wall Street Journal* and the Dow Jones Newswire. This author documents that stocks with news show momentum and firms with more news experience greater stock drift. In particular, stocks with bad news exhibit a significant negative price drift for up to 12 months, while stocks with good news display less price drift. This finding indicates that investors are slow to react to bad public news. Chan (2003) further find that stocks without public news show significant post-event reversals the subsequent month, which is consistent with investor overreaction to spurious price moves.

Vega (2006) explores the effect of media coverage on the post-earnings announcement drift. The phenomenon of post-earning announcement drift, whereby stock price tends to move in the same direction as the initial surprise rather than adjusting immediately to new information surprise, has been well documented (e.g., Fama,1998; Kothari, 2001). Vega considers the media a proxy for the arrival rate of noise investors and measures it as the number of days an individual firm is covered in the news before the announcement. The authors finds

that stocks with high (low) media coverage have a large (low or insignificant) price drift, which suggests that the stock price drift is positively related to the arrival rate of noise investors. Solomon (2012) examines the role of media coverage in investors' capital allocation to mutual funds. The findings show that investors are likely to allocate more (less) capital to funds holding media-covered stock with high (low) past returns.

Some papers consider media coverage a proxy for investor attention. According to Merton's (1987) investor recognition theory, in an information-incomplete market, investors have limited attention and are not familiar with all stocks. Therefore, investors prefer to buy and hold stocks about which they are more aware. This indicates that stocks with lower investor recognition need to offer higher returns to compensate their investors. Using advertising as a similar measure of media coverage, Grullon et al. (2004) show that a firm's greater advertising expenditure is associated with a larger number of individual and institutional investors and with a significant improvement in market liquidity. The authors further find that advertising has a stronger effect on individuals than on institutions. They argue that investors buy or hold stocks with greater visibility. This visibility among investors may lead to a larger breadth of ownership of the firm's stock. Their paper assesses firm visibility by its product market advertising expenditure.

However, Frieder and Subrahmanyam (2005) find that while individual investors prefer to hold stocks with strong brand visibility, institutional holdings are negatively associated with stock brand recognition. Moreover, Barber and Odean

(2008) posit that individual investors are the net buyers of stocks reported in the news and they further find that individual investors are likely to buy rather than sell those stocks that grab their attention. Consistent with Merton (1987), the authors argue that individual investors have a significant search problem at the time of trading. Because individual investors find it difficult to choose which stocks to invest in, attention-grabbing stocks are more likely to enter their choice set. When it comes to selling, individual investors own relatively few stocks in their portfolio and only sell stock they already hold. Frieder and Subrahmanyam's (2005) study suggests that news is a proxy for individual investor attention, which is a major factor determining which stocks individual investors buy but do not sell. This can result in temporary positive price pressure. Unlike for Grullon et al. (2004), these arguments cannot be applied to institutional investor trading behaviour.

Fang and Peress (2009) find that stocks not covered by the media earn significantly higher returns than those heavily covered by the media. An explanation for this 'no media' premium is based on Merton's investor recognition hypothesis. Stocks with limited investor recognition face the imperfect diversification problem, so that they are required to offer higher returns to compensate their investors. Media coverage plays an important role in attracting investor attention and broadening investor recognition. Thus, stocks with higher media coverage are likely to earn lower returns than stocks with no media coverage. The authors' results on the role of the media indicate that the breadth of

information dissemination can create investor awareness and hence generate investor buying behaviour, resulting in a lower cost of capital.

By focusing on the response to earning announcements, DellaVigna and Pollet (2009) investigate whether limited investor attention affects stock returns. The authors compare the response to announcements that occur on a Friday, when investor inattention is more likely, to the response to announcements on other weekdays. They report that individuals are more likely to underreact to Friday announcements and there is greater drift reversal due to limited attention. The results show that investor inattention is negatively related to stock prices and trading volume and can increase the delayed reaction of stock prices to new information. Using a geographic instrument, Engelberg and Parsons (2011) further investigate whether stock trading to an earnings announcement is related to local media coverage. They find that local press coverage significantly increases the trading value of local retail investors. Their results show that media coverage can causally affect stock trading.

Da et al. (2010) propose a new and direct measure of investor attention using aggregate search frequencies in Google. They use this measure because Google is a favourite search engine to collect information and, more critically, the search data reveal interest in particular stocks. The empirical results show that search volume captures the attention of individual investors, leading to greater individual trading, which strongly supports the hypotheses of Barber and Odean (2008). Da et al. find that increased individual attention, as measured by search volume in

Google, leads to higher stock prices in the next two weeks and a subsequent return reversal within a year. Additionally, Engelberg et al. (2011) measure investor attention by TV viewership and examine market reactions to first-time stock buying recommendations from the popular US CNBC TV show *Mad Money*. The authors find that the temporary overnight abnormal returns are positively related to recommendations made on the show. The results show a positive relation between total viewership and overnight returns.

Some papers shed light on the influence of quantitative measures of media content on asset prices and trading volume. In the first of these studies, Tetlock (2007) investigates the news in *The Wall Street Journal* using textual analysis and explores the interaction between media content and stock market activity. Tetlock refers to the *Harvard Psychosocial Dictionary* to classify pessimistic words in each media article and obtains each article's news attitude, labelled media pessimism. This research shows that high media pessimism predicts short-term downward pressure on stock prices, followed by a reversion to fundamentals. Tetlock also finds that both high and low media pessimism lead to high market trading volume.

The explanation for these findings is based on investor sentiment hypothesis. Tetlock considers that media pessimism can predict further investor sentiment, especially for noise and liquidity investors. If such investors have negative prospects for a stock, they will sell it to arbitrageurs, resulting in increased trading volume and depressed stock prices. Alternatively, the author reports that the media

reflect past stock performance; for example, negative media suggests low past market returns.

Using the same classification dictionary, Tetlock et al. (2008) find that the proportion of negative words in firm-specific news has predictive power for firm earnings and stock returns. They also find that stock price incorporates the information contained in negative words with a slight delay. Their findings suggest that the negative words embedded in the news can convey otherwise hard to quantify aspects of firm fundamentals. Subsequently, Loughran and McDonald (2010) develop an alternative word list to capture fundamental information from firms' 10-K filing reports. Garcia (2012) uses media content as a proxy of sentiment, constructed by the number of positive and negative words from two financial news columns from *The New York Times*. This paper shows that news content has predictive power for daily stock returns, particularly in times of recession.

On the other hand, some papers argue that the words used in media articles can create incentives for manipulation. Solomon (2012) studies the effect of investor relations firms, and finds that they tend to promote their client firms by releasing more positive news, thereby influencing investor expectations about these firms' prospects, resulting in a temporary increase in stock price. Furthermore, Gurun and Butler (2012) argue that the local media use more positive words when reporting on local firms compared to the same news covered by non-local firms.

The authors provide strong evidence that such abnormal positive local media bias is strongly associated with firm stock market valuation. It is worth noting that, in the studies of Solomon (2012) and Gurun and Butler (2012), media tone is measured as the fraction of negative words in the media article, with the list of negative words taken from Loughran and McDonald (2010).

An alternative line of research has looked at the role of media in corporate finance. Some papers investigate the interaction between the media and IPOs. Focusing on the period of the Internet IPO bubble, Bhattacharya et al. (2009) examine whether media coverage of internet IPOs differs from that of non-internet IPOs and whether media coverage affects the difference in returns between Internet and non-Internet stocks. They find that media coverage for Internet firms is greater than that for non-Internet firms and that the media is more positive for Internet IPOs but more negative in the post-bubble period. Using a human classification of media articles, the authors also find that higher abnormal returns lead to more positive media coverage the following day. However, their results show that media coverage is not a significant factor in the dramatic rise and fall of Internet shares in the late 1990s.

Firms care about the market perception of their shares when they plan to raise a new offering and this concern is associated with media news received by investors. Cook et al. (2006) posit that pre-IPO media coverage can promote IPOs to

individual investors by creating pre-offer publicity, resulting in upward offer price revisions. Their results indicate that pre-IPO media coverage induces more individual investors to enter the market for an IPO and creates short-term sentiment demand, which benefits the issuers, investment banks, and institutional investors. In their paper, media coverage is considered a proxy for pre-equity issuance marketing. However, Liu et al. (2009) find that media coverage does not stimulate investor sentiment and has no effect on underwriter fees to market the IPOs. Based on these two papers, it is unclear whether pre-offer media play an active role in raising the temporary demand of individual investors.

Using a different media measure, Da et al. (2010) also examine the individual investor attention hypothesis in IPOs and find that the search volume is positively related to an IPO's first-day return and long-run return reversal. However, this finding is inconsistent with Liu et al. (2009), who find that pre-IPO investor attention, as measured by media coverage, has no impact on price reversal or underperformance in the long run.

The different findings in these two papers are due to different measures of investor attention: One is media based, while the other is search based. Chemmanur and Yan (2009) attempt to analyze the interaction between a firm's product market advertising and underpricing in the context of either IPOs or SEOs. They consider that a firm usually faces asymmetric information in the financial markets. Product market advertising plays a significant role in mitigating the information problem, since it can signal the firm's intrinsic value to the financial

market and hence the investor would price the equity correctly. Therefore, when the firm needs to fund a new project by equity financing, managers tend to convey the true value of the project by using advertising. Chemmanur and Yan report that firms choose a higher level of product market advertising in their IPO or SEO year compared with their advertising levels in non-IPO and non-SEO years. Furthermore, they confirm that product market advertising and underpricing are substitutes for each other.

Two further papers shed light on the role of media in Merger and Acquisitions Using test-based media content, Buehlmaier (2012) examines how the media predict takeover outcomes. The author claims that the acquirer will use a costly media campaign to make target shareholders believe the takeover is beneficial and hence give their approval. The authors conclude that positive media news about the acquirers leads to takeover success. Furthermore, Ahern and Sosyura (2012) consider that firms have an incentive to manage their media coverage to influence the outcome of important corporate events through potentially biasing investor expectations. They find that acquirers are likely to generate less negative news from the first day of merger negotiations to the public announcement. Such media management induces a temporary run-up in the bidders' stock during the period when the stock exchange ratio is determined.

## 4.3 Hypothesis Development

This chapter's research questions concern whether pre-SEO media can influence firm equity financing decisions and how the financial market responds to firm-specific news in the context of SEOs. This chapter explores these two questions using media coverage and media content.

To address the first question, this study examines whether pre-SEO media coverage is a possible determinant of offer price setting. To receive more equity capital, issuers tend to price seasoned offers higher with lower discounts. The price setting of SEOs is associated with several determinants, such as asymmetric information (Benveniste and Spindt, 1989, Ritter and Welch, 2002), investor attention (Merton, 1987; Liu et al., 2009; Duffie, 2010), and different opinions among investors (Miller, 1977; Hong and Stein, 2007). In this scenario, there are three ways in which the media can influence the pricing of SEOs.

First, this study assumes that media may help resolve value uncertainty, creating more transparency and thus reducing the information friction between firm and outside investors. Gentzkow and Shapiro (2010) argue that media firm has an incentive to build and maintain a reputation as a provider of accurate information. They also find that competing media outlets can sufficiently prevent media bias. According to this view, mass media can reveal genuine or latest information about

the underlying value of the firm, making it easier to value. With regard to the theory of value uncertainty (Rock, 1986), firms with high value uncertainty should compensate their investors by discounting share prices. In this setting, issuers with high media coverage should have low level of value uncertainty, and thus reduce the SEO discount.

Moreover, assuming that issuers have superior information about the firm's fundamental value compared to the information held by investors, rational investors would fear a lemon problem, whereby only issuers with below-average quality tend to sell new shares at a higher discount (Ritter and Welch, 2002). To distinguish themselves from low-quality issuers, better-quality issuers attempt to signal their quality using public media. Based on this consideration, when firms need to raise external funds for new investment projects, they may actively manage the media to signal their true value to investors, thus allowing them to correctly price the new SEO offers. Due to such incentives, issuers covered by more media news are willing to price SEOs at a lower discount.

Alternatively, assuming that investors are more informed than the issuer about the information of demand, issuers would have a placement problem, whereby they do not know the price the market can accept (Ritter and Welch, 2002). If the offer is priced too high, investors may reject it since they are averse to the winner's

curse[15] (Rock, 1986). To solve this problem, the issuer would adopt a higher discount to attract more investors. Media coverage sometimes implies demand information about stocks, because journalists may predict the stock price drift or the firm's prospects based on their own information sources and professional judgment (Liu et al., 2009). In this case, issuers may consider the media as a demand information source. This suggests that pre-SEO media may have a large impact on offer setting.

Second, increased media coverage will attract additional investor attention, leading to a stock price run-up (Tetlock, 2010). Given that high media coverage efficiently improves the dissemination of firm-specific information to the financial market, issuers may become more credible and more familiar to investors. Thus issuer stocks become more valuable to investors (Merton, 1987), and investors are more likely to buy or hold stocks garnering more attention from the financial market. Barber and Odean (2008) confirm that individual investors are the net

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[15] In the winner's curse theory, the tendency of the winning bid in an auction is to exceed the intrinsic value of the item purchased. Investors fear that they will only receive full allocations if they happen to be among the most optimistic investors. Successful and highly oversubscribed offerings involve rationing. Hence, an investor would receive a full allocation of overpriced issues but only partial or no allocation of underpriced IPOs. On average, the return of an uninformed IPO investor would be negative. To solve this problem, equity issues have to be underpriced, on average (Rock, 1986; Ritter and Welch, 2002).

buyers of attention-grabbing stocks, such as stocks covered by the news, stocks with high trading volume, and stocks experiencing abnormal one-day returns.

Using advertising as a similar measure of media coverage, Grullon et al. (2004) find that the number of individual and institutional investors is positively related to a firm's advertising expenditure. Therefore, this study assumes that media coverage plays an important role in generating positive demand for new shares by increasing issuers' investor attention. As a result, the SEO offer price will be set higher, at a lower discount.

Third, the content of a particular news article can also have a significant effect on stock prices, since investors revise their expectations (e.g., Tetlock, 2007; Demers and Vega, 2010; Solomon, 2012). The content of media articles may influence the sentiment of investors, especially liquidity or noise investors (Tetlock, 2007). Such investors' trading activities would be affected by their expectations based on what they obtain from the media, resulting in stock price drift. If a media article contains positive (negative) news, then this would be interpreted as signifying better (worse) future prospects for the firm and thus its price would increase (decrease). In other words, media content contributes to investor expectations: The more positive the information in the media, the more optimistic the investors become. In this setting, issuers price SEO shares higher (lower), at a lower (higher) discount, when pre-SEO media coverage reports positive (negative) news.

To explore these media roles in SEO price setting, this study proposes the following two hypotheses.

***Hypothesis 1a:*** *Pre-SEO media coverage is negatively related to SEO discounting.*

***Hypothesis 1b:*** *The content of pre-offer media news is related to SEO discounting. Positive (negative) media news leads to lower (higher) SEO discounting.*

The second objective of our research is to investigate whether pre-SEO media has an effect on market reactions to SEO announcements. Based on the argument above, this study expects that pre-SEO media can focus investor attention on the issuer before the SEO announcement. Once the SEO has been announced, the market reaction should be associated with increased attention to the announcement. This study examines the announcement effects of issuers, whether they are covered by news media during the pre-SEO period. Since high media coverage may attract more investors and increase the quality of decision making, market reactions to announcements where issuers are covered by the news should be more pronounced.

Previous studies find that the announcement returns of SEOs are normally negative. According to the interpretation of the signalling and adverse selection models (Heinkel and Schwartz, 1986; Eckbo and Masulis, 1992), this is because

the SEO is a negative signal for the market: Investors believe that issuers act opportunistically and take advantage of the overvalued share price. The more media reporting on the issuer before the SEO public announcement, the more investors continue to pay attention to this firm and thus more investors receive a negative signal from the SEO announcement. Therefore, the announcement effect of the SEO has been magnified through media news. This can result in more shareholders selling stocks in the secondary market, causing the stock price to drop further. Overall, the market reaction to the SEO announcement will be more negative.

Moreover, it is assumed that the relation between media content and investor sentiment will induce stock price drift. In this case, this study further expects that the announcement return will increase with the positive information in issuer pre-SEO news articles. Sentimental investors may be optimistic about a firm's value and long-term performance; for example, they may believe it is issuing new shares due to reasons other than the stock price is overvalued. Similarly, negative news is likely to induce a decrease in SEO announcement returns.

Based on the arguments above, this study proposes the following two hypotheses.

*Hypothesis 2a: Pre-offer media coverage is negatively related to SEO announcement returns.*

*Hypothesis 2b:* *The content of pre-offer media is related to SEO announcement returns. Positive (negative) media news leads to higher (lower) SEO announcement returns.*

## 4.4 Data and Methodology

### 4.4.1 The Sample

This study starts with all UK common stock SEOs between 1 January 1996 and 31 December 2010, as reported in the Thomson One Banker database. This study selects this sample period because of the regulatory change that took place in 1996, when the London Stock Exchange (LSE) relaxed the rules on the maximum size of a placing issue.[16] Since then, there has been the proportion of placing issues in UK SEOs has significantly grown (Barnes and Walker, 2006). Thus offer size is not necessarily constrained by issue type in our sample.

Our analysis considers only non-financial (Standard Industrial Classification, or SIC, codes 6000–6999) and non-utility (SIC codes 4900–4949) issuer stocks listed on the LSE. Following Slovin et al. (2000), the sample excludes pure

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[16] Prior to 1990, a maximum monetary value of £3 million was imposed by the LSE on the total value of shares being placed. A higher ceiling of £15 million applied to the period 1990–1995. In January 1996, all size limitations were effectively removed, paving the way for an unconstrained choice of issue methods by publicly listed firms (Barnes and Walker, 2006).

secondary and joint issues because large shareholders and insiders can sell a portion of their stock holdings in secondary offerings. To identify issuing characteristics, we download the following terms of each offer: the announcement date, the offer price, the offer amount, and the issue type. The daily stock price data are obtained from Datastream, including the closing market price prior to the announcement day, on the offer day, and on the first trading day after the issue. The accounting data with regards to issuers are also downloaded from Datastream. The final sample comprises 415 SEOs.

Table 4.1 presents the number of SEOs, the total offering amount, and the average offering amount in each year, categorized by pre-offer media coverage. The number of SEOs and annual average offering proceeds fluctuate over the 15-year sample period. In 2009, the number of SEOs is 103: 52 with news and 51 without news. All these numbers are the highest in each group. Moreover, the SEOs in 2009 account for 36.09% of the total proceeds raised in our sample. The potential explanation is the UK debt crisis, when firms found it easier to raise capital by equity issuance than via debt due to the high leverage ratios involved. The total number of SEOs with news is greater than the number without news (228 versus 187, respectively), indicating that issuers are likely to be reported by media news before their SEO is announced to the public. Table 4.1 also reports that the SEOs in our sample raised around US$77,409 million of capital: SEOs with news account for US$47,050 million, while SEOs without news account for US$30,359 million. The average offer proceeds for SEOs with news are

significantly higher than for SEOs without news (US$2901.56 million versus US$2023.51 million, respectively).


*(Please insert Table 4.1 here)*


## 4.4.2 Construction of Media Variables


In this chapter, media coverage and media sentiment are applied as proxies for a firm's overall media exposure. To obtain the media data for each firm, this study searches media articles related to SEO issuers from the LexisNexis UK database. All media news are published in the *Financial Times* (London), *The Times* (London), the *Guardian* (London), the *Mirror,* and the *Sunday Mirror*[17]. The search window runs from 1 January 1995 to 31 December 2010.


These media sources are selected for three reasons. First, all of these five influential newspapers have extremely large circulations, over 6.6 million readers in total. In particular, the *Financial Times* is a finance-oriented newspaper, with an average daily readership of 2.1 million. The other newspapers also have dedicated sections for international business and financial news. Second, all of these newspapers have a long history; for example, the *Financial Times* was founded in

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[17] This study also downloads the media articles published in The Economist. However, the amount of news article related to SEO issuers in this newspaper is only 72 during the research period, which is quite smaller than these published on other newspapers. Thus, the media sample excludes the news sourced from The Economist.

1888, *The Times* was established in 1785, the *Guardian* in 1821, and the *Mirror* and the *Sunday Mirror* in 1930 and 1915, respectively. Thus they have strong reputations and credibility for all types of investors. Third, the competition among these five newspapers can lead to lower media bias (Gentzkow and Shapiro, 2010). Additionally, due to the long history and strong influence of these newspapers, the electronic text of media news for our sample period is accessible from the LexisNexis UK database.

To construct the media coverage variable, this Chapter simply counts the number of all pre-SEO media news for each issuer. In our analysis, the pre-SEO media window is estimated separately over [-30,-2], [-60,-2], and [-90, -2], where zero is defined as the announcement day. This measure refers to the research of Cook et al. (2006) and Liu et al. (2009). However, they study the role of media news in the case of IPOs and their media searching period is from the filing date to the issue date. To better examine the effect of media, all SEOs are separated into two samples by media coverage: SEOs with news and SEOs without news. The group of SEOs with news (SEOs without news) is defined as SEO issuers that are (not) reported by the media from 90 days before the announcement date to 2 days before the announcement date.

In addition to media coverage, our research also includes the media sentiment variable. This study constructs the media sentiment variable to examine whether the content of media news has an effect on price setting in SEOs, as well as market reactions to SEO announcements. Tetlock (2007) confirms that media

content can predict firm stock price movements and market trading volumes. The author employs a media pessimism factor as a proxy of media content, using the *Harvard Psychosocial Dictionary* to categorize the negative or weak words in each media article. Tetlock et al. (2008) also use the number of negative words to quantify the language in media news and find that media content can predict a firm's accounting earnings and stock returns. However, some papers classify each media news item as good, bad, or neutral using human judgment (e.g., Bhattacharya et al., 2009).

Loughran and McDonald (2010) propose an advanced word list to identify the positive and negative words in financial articles based on textual analysis in a large sample of 10-Ks. They posit that their word list reflects the tone of financial news more accurately than those categorized by the *Harvard Dictionary* in previous research (Tetlock, 2007; Tetlock et al., 2008). Using this new word list, this Chapter constructs the proxy for media sentiment by counting the number of business-specific positive and negative words for each media article. The media sentiment for each article is determined as the ratio of the number of positive words minus the number of negative words to the total number of words in the article:

*Media sentiment per article = (positive words - negative words)/total words per article*

This measurement of media sentiment is similar to that of Tetlock et al. (2008) but is contrary to the definition of Garcia (2012), where the pessimism factor is calculated by the number of negative words minus positive words. In our study, the value of sentiment per article is higher when the content of the media article is more positive. For each SEO, media sentiment is calculated as the mean of the sentiment per article during the pre-announcement period.

Table 4.2 presents the summary statistics of pre-SEO media coverage and media sentiment. The media variables relating to issuers are matched to each SEO by the issuer's code. Coverage and sentiment are listed separately, by using different pre-announcement media windows. From 1996 to 2010, there were 6870 media articles during the pre-announcement period [-90, -2], covering 228 SEOs. Average media coverage is significantly higher than the median value (30.13 versus 8, respectively), suggesting that most media news are clustered around a small number of SEOs. This finding indicates that media news is likely to report on issuers based on journalists' preference rather than covering all issuers equally.

It is notable that the average sentiment is negative in all cases. This finding is consistent with the evidence of Tetlock et al. (2008). The potential reason is that the word list of Loughran and McDonald (2010) contains a larger number of negative words than positive words. Moreover, the psychology literature argues that negative information has a greater influence on audience psychology than positive information (Rozin and Royzman, 2001). Tetlock (2007) also finds that

negative words are more likely to be related with stock returns compared with other types of words.

*(Please insert Table 4.2 here)*

## 4.4.3 Descriptive Statistics

Table 4.3 reports the issue and firm characteristics of UK SEOs. It also presents the descriptive statistics of two subgroups − SEOs with news and SEOs without news − and highlights the differences between them. As reported in panel A of Table 4.3, the average issuing amount for SEOs with news is US$206.36 million, while that for SEOs without news is US$162.35 million. This finding suggests that, on average, SEOs with news raise more funds than SEOs without news. This finding is consistent with the result from Liu et al. (2009) that the offer size of IPO is positively related to the level of media coverage. Since SEOs are often carried out at a discount, this study calculates the offer discount as the percentage difference between the closing price on the day before the announcement day and the offer price. The average discount for SEOs in our sample is 11.9%, which is similar with the 12% in the United Kingdom from 1989 to 1998 (Barnes and Walker, 2006). The difference between the two subgroups, SEOs with and without news, with respective discounts of 9.48 and 14.85, is not statistically significant. Thus SEO discounting, on average, does not differ according to whether the issuer has gained media attention.

Panel B shows that average firm size measured by market valuation is much higher for SEOs with news than for SEOs without news (US$5,737millions versus US$1,558 millions, respectively). This result indicates that the media are likely to pay attention to larger firms.   It is shown that the average value of leverage for SEOs with news is 28.15%, while it is 23.99% for SEOs without news. This difference is statistically significant, suggesting that issuers with higher levels of debt receive more media attention than issuers with less debt. Another important finding is that the average turnover of SEOs with news is significantly higher than that of SEOs without news. This suggests that media coverage is related to market performance, with issuers that experience greater market performance tending to attract more media attention. In addition, SEOs with news tend to have higher growth opportunity in terms of return on equity and market to book ratio compared with SEOs without news. However, these differences are not significant.

*(Please insert Table 4.3 here)*

### 4.4.4 Announcement Effect on SEOs

To capture the market reactions to SEOs, This Chapter follows the event study method introduced by Asquith and Mullins (1986) and Kang and Stulz (1996). Daily stock returns are computed in logarithmic form, adjusted for dividends. This study applies the Carhart (1997) four-factor model, with the FTSE All Share equally weighted portfolio as a proxy for the market. The cumulative abnormal

returns are generated for the two-day [-1, 0] and three-day [-1, 1] event windows referring to the SEO announcement date. The estimated period is set to cover [-260, -61] prior to the announcement day (this study also uses [-90, -30] as a robust test and obtain similar results). This Chapter uses t-test statistics to report significant levels of market reactions to announcements (e.g., Eckbo and Masulis, 1992; Balachandran et al., 2008).

Table 4.4 shows our results on the market reactions to SEO announcements, controlling for several determinant variables as well as the issuer's past stock performance. We find that the average announcement returns of SEOs are negative and significant, -0.75 and -1.14%, for two- and three-day windows, respectively. These returns are higher than those of the US SEOs reported by Gao and Ritter (2010), -1.72%, over the period 1996–2007. These results can be explained by several theories discussed earlier, such as downward-sloping demand curves, signalling effects (Heinkel and Schwartz, 1986), and asymmetric information (Eckbo and Masulis, 1992). However, several studies investigate market reactions to UK SEO announcements by issue type and find a positive market reaction to placement issues but a negative market reaction to rights issues (Slovin et al. 2000; Barnes and Walker, 2006).

Table 4.4 also presents the three-day announcement returns for the two SEO groups, with and without news, -1.24 and -0.85%, respectively. The difference between the announcement returns for these two groups is significant, suggesting that the announcement returns are more negative for SEOs with news than for

SEOs without news. That is, following the SEO announcement day, the stock price tends to decrease more for the issuer with pre-offer media coverage than for the issuer with no pre-offer media coverage.

This Chapter also examines the past cumulative excess returns of SEO stock, described as past market performance, during the period [-260,-2] prior to the announcement date. As can be seen from Table 4.4, the past market performance for the SEO is 0.09, which is positive and significant at the 1% level. This result is consistent with previous evidence (e.g., Marsh, 1982, Loughran and Ritter, 1996, Wu et al., 2005). Marsh (1982) finds that stock price run-ups take place before rights issues in the UK. The authors also finds that excess returns over the year before the SEO are positively related to the probability of issuing equity as an external financing choice. Loughran and Ritter (1996) and Wu et al. (2005) confirm Marsh's finding using different data sources. Our result is similar to the recent study of Barnes and Walker (2006), who examine the pre-issue market performance of SEO stock in the United Kingdom over the period 1989–1998. In that work, the stock run-up period is determined as [-170,-21] relative to the SEO announcement date.

Comparing the two subsamples,  it is notable that the cumulative excess return averages 0.08 for SEOs with news and 0.01 for SEOs without news, but the difference is not significant.

*(Please insert Table 4.4 here)*

## 4.5 Regression Results

This Chapter applies three ordinary least squares regression models to explore the role of the media in SEOs. The first model tests whether and to what degree media coverage and sentiment can influence the SEO discount. The second model is applied to examine how media coverage and sentiment impact market reactions to SEO announcements. The third is a robust regression to examine how media news affects SEO offer size. All the regressions include industry and year dummies to control for industry- and time-specific effects.

### 4.5.1 The Impact of Media on the SEO Discount

Table 4.5 presents the OLS results where the discounting of SEOs is regressed not only on the media variables but also on a list of issues, firm characteristics, and market conditions used in previous studies.

As shown in Estimations 1 to 3, the coefficients of the media coverage variable are all negative and statistically significant. This suggests that issuers with higher media coverage prior to the SEO announcement are likely to decrease their SEO discount and boost the offer price. This result is consistent with the prediction of our hypothesis. In practice, the reputation of journalists is closely related to the authenticity of the news they report, especially for those working in influential newspapers. In this context, the information contained in the news partially

reveals the true quality of the issues. The uncertainty about firm value is reduced and thus the information asymmetry between issuer and investors is diminished. At the same time, journalists give their professional prediction about the demand for new shares and firm value in the long term. In this case, the underwriter has an incentive to decrease the compensation for information acquisition from investors. As a result, the SEO discount is reduced and the offer price is raised.

Estimations 1 to 3 also contain the results of models where discounting is regressed on media sentiment. The results are consistent with the earlier finding. It is shown that the coefficient of media sentiment is negative and significant, suggesting that issuers with positive pre-offer media sentiment have lower discounts on the offer price. This result is also consistent with the finding of Tetlock et al. (2008). The potential explanation is that more positive information in media news signals to the market that the issuer has higher quality. Individual investors should become optimistic about the issuer's further market performance. Investors are likely to believe the SEO is motivated by other reasons, rather than by overvaluation of the issuer's stocks (Myers and Majluf, 1984). Thus more investors will participate in the SEO primary market, resulting in a higher offer price and lower price pressure after the issue. Similarly, when media sentiment is more negative, the issuer needs to bear the higher risk of SEO failure. Thus the offer price has to be fixed at a higher discount.

This study also investigates whether other SEO characteristics have an effect on the discounting of SEOs. A large number of studies (e.g., Slovin et al. 2000;

Barnes and Walker, 2006) analyze UK SEOs by issue type. Therefore, this study construct two dummy variables, Private and Right, to capture the effect of issue type. The results of Private and Right shown in Table 4.4 suggest that issue type has no significant impact on discounting in SEOs. It is notable that the coefficient of Proceed/MV is positive and significant in all the estimations, suggesting that larger offers have higher discounting. The magnitude of the discount will be increased as issuers raise larger amounts of capital in the SEO. These results strongly support the price pressure hypothesis. Corwin (2003) suggests that discounting should be most pronounced for the largest offers, reflecting the market's ability to absorb the new shares.

This study now focuses on the other determinants of discounting in SEOs. Similar to previous findings (e.g., Corwin, 2003; Wu and Wang, 2005), this study find that the coefficient of firm size is significantly negative. This is consistent with both the uncertainty and asymmetric information hypotheses. Discounts in offer price are generally smaller for larger issuers with lower uncertainty and asymmetric information. Furthermore, this study constructs three proxies for growth opportunities: ROE (Denis, 1994), MV/BV (Barclay and Litzenberger, 1988), and Leverage (Smith and Watts, 1992). It is notable that MV/BV is negatively related to SEO discounts, which implies that issuers with greater opportunities are likely to exercise lower discounts.

However, the positive coefficient of Dividend variable indicates that issuers paying higher dividends are more likely to set offer prices at higher discounts. According to the dividend signalling hypothesis (Miller and Rock, 1985), Dividend variable conveys positive information regarding future cash flow and firm quality. Some papers further find that the impact of dividends on stock price is positive (e.g., Ambarish et al., 1987; Fuller and Goldstein, 2011). Following this argument, when a firm with higher dividends decides to issue an SEO, investors are likely to believe the current stock price is overvalued and thus require more compensation in the form of a discount. In addition, this study uses the monthly average turnover ratio ([-260,-2] prior to the announcing date) to proxy for a standard liquidity effect, as referred to by Datar et al. (1998) and Eckbo et al. (2000). Estimation 2 shows that the magnitude of the discount is significantly positively related to the turnover ratio, consistent with Eckbo et al. (2000).

To examine the effect of firm-specific stock performance and general market conditions before the announcement date, this study incorporates the firm's CAAR and cumulative market return of [-260, -2] prior to the announcement date into our regressions. The result reported in Estimation 3 suggests that the issuer's market performance prior to the announcement has a negative impact on the discount. This finding is not consistent with that of Corwin (2003), but it is consistent with the manipulative trading theory described by Gerard and Nanda (1993). This theory suggests that informed investors strategically sell shares prior to an SEO, leading to a temporary decrease in stock price. Then informed

investors may obtain additional profits from the lower price in the SEO offering. The sign of the coefficient of the variable Pastm suggests that more favourable market conditions should result in lower discounts.

Overall, none of the industry and year dummy variables effects on discounting are statistically significant and therefore they are not reported. These results are not consistent with the findings of Lowry and Schwert (2004) or Bradley and Jordan (2002), that higher tech firms usually have larger discounts in unseasoned offers.

*(Please insert Table 4.5 here)*

**4.5.2 The Impact of the Media on SEO Announcements Returns**

This section aims to investigate whether market reactions to SEO announcements are affected by media news. Table 4.6 reports the outcome of estimating various cross-sectional regressions in which the dependent variable is the issuer's three-day announcement return. Panel A reveals the regression results of announcement returns on media coverage, while panel B focuses on the effect of media sentiment.

Interestingly, this study finds that in panel A the coefficients of media coverage are negative and statistically significant. This finding suggests that firms with

higher media attention experience larger value declines upon the SEO announcement. This can be interpreted according to the signalling hypothesis, whereby the SEO signals to the market that the firm's current stock price is overvalued. The investors may sell their shares after the offering, resulting in price declines. Merton (1987) suggests that firms with more media news will attract more investor attention. Combining these arguments suggests that the more existing shareholders selling the attention-grabbing stock during the offering period, the greater the decrease in stock price. Moreover, Fang and Peress (2009) argue that stocks with no media attention are often impediments to trade. This implies that the investors may engage in less or no trading activity at the time of the SEO, lowering the announcement effect.

In panel B of Table 4.5, the estimates for media sentiment suggest that more positive information disseminated by the media will increase announcement returns. Consistent with the findings of Tetlock et al. (2008), individual investor psychology is influenced by the content of news, which is reflected in their trading activities. The more positive information obtained by investors, the more positive their expectations about the future stock returns will be. In this context, existing investors are likely to hold or sell fewer shares in the secondary market, resulting in less negative announcement returns.

It is notable that the coefficients of the dummy variable Private are positive and significant, supporting the findings of Slovin et al. (2000) and Barnes and Walker (2006), that market reactions to private placements are significantly positive in

UK SEOs. However, the regression results show that the effect of discounting on announcement returns is not statistically significant. This finding contradicts those of Slovin et al. (2000) and Balachandran et al. (2008), who suggest that offer price discounts provides a strong signal to the market. High-quality firms usually use lower discounts to signal their true value, resulting in higher announcement returns.

The results of Proceed/MV suggest that larger issues are related to more negative announcement returns, which is consistent with previous studies (e.g., Asquith and Mullins, 1986; Corwin, 2003). A potential explanation is that higher offering amounts reflect higher information costs. For other control variables, consistent with the previous literature (Kang and Stulz, 1996; Wu and Wang, 2005), firm size has a positive effect on announcement returns. It is also shown that the financial leverage is positively associated with announcement returns. Dierkens (1991) finds that firms with higher leverage levels have lower information asymmetry because they are monitored by both shareholders and creditors. It is worth mentioning that the proxy variable for stock's liquidity, Turnover, is significantly negatively related to the issuer's announcement returns. This evidence is consistent with the standard liquidity theory in the literature. That is, new equity issues improve a stock's liquidity, especially lower-turnover stocks.

*(Please insert Table 4.6 here)*

### 4.5.3 The Effect of the Media on SEO Offer Size

Table 4.7 presents the results of three regression estimations, where the relative size of an SEO is regressed against the media variables and other firm characteristics for different samples of SEOs. As shown in all the estimations, the estimates for media coverage are positive and significant at the 1% confidence level. These results suggest that pre-SEO media are positively related to offer size. Issuers with higher media coverage before the SEO announcement date tend to have larger SEOs. This finding can be interpreted as a result of the media's marketing effect. Greater media coverage increases awareness of a stock among more investors, generating more potential buyers for new shares. Our finding is consistent with Cook et al. (2006), who find that pre-offering media can shift up the demand curve for the stock.

*(Please insert Table 4.7 here)*

## 4.6 Conclusions

This chapter documents that both media coverage and media sentiment before an SEO announcement are significantly related to the discount and to the SEO announcement return. The measure of media coverage is the total amount of media news related to the issuer during the pre-announcement period. Media

sentiment is computed as the ratio of positive words minus negative words to the total number of words in a news article.

The chapter yields two main findings. First, issuers covered by more media tend to lower their SEO discounts, leading to higher offer prices. This result supports the argument that media coverage drives the temporary demand of investors (Cook et al., 2006). However, the SEO announcement effect is more negative following more media coverage, which is consistent with Merton (1987). With more media news, the issuance of new equity as a bad signal reaches more investors, resulting in larger stock price declines. Second, the media content can influence investor trading activities. Our evidence reveals that when there is more positive information in the pre-announcement media, issuers are likely to raise the offer price and the market reaction to the SEO announcement is also less negative.

This chapter contributes to the growing literature on the function of the media in market response and asset pricing. Our results are consistent with Tetlock et al. (2008) and Liu et al. (2009). The paper also provides strong evidence to support Merton's investor recognition model. In addition, this study contributes to the literature on UK SEOs. However, this research focuses on the temporary effect of the media, while the relation between pre-announcement media and firm long-run performance is not explored.

# Appendix: Variable Definitions

| Variable | Definition | Source |
|---|---|---|
| **Issuer characteristics** | | |
| **Discounting** | 1- Offer price/price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. | Thomson One Banker |
| **Proceed** | Gross proceeds. For missing data, the data are constructed as the number of new shares times the offer price. | Thomson One Banker |
| **Proceeds/MV** | The ratio of proceeds to the issuer's market value. | Thomson One Banker and Datastream |
| **Private** | Dummy. Takes the value of one for a private placement and zero for others. | Thomson One Banker |
| **Right** | Dummy. Takes the value of one for a rights offer and zero for others. | Thomson One Banker |
| **Firm characteristics** | | |
| **MV** | The market value of the issuer. | Datastream |
| **Size** | The natural logarithm of MV. | Datastream |
| **Roe** | The ratio of net income to the book value of equity. | Datastream |
| **MV/BV** | The ratio of market value of equity to the book value of equity. | Datastream |
| **Leverage** | The ratio of total debt to total assets. | Datastream |
| **Turnover** | The ratio is defined as the monthly moving average turnover ratio for the estimated period [-261,-2] prior to the announcement date. | Datastream |
| **Pasts** | Past stock performance is defined as the cumulative average abnormal return for SEO firms during the estimated period [-260, -2] prior to the announcement day. | Datastream |
| **Pastm** | Past market condition is defined as cumulative equal-weighted market returns during the estimated period [-260, -2] prior to the announcement day. | Datastream |

| Media characteristics | | |
|---|---|---|
| **Coverage** | The total number of media articles related to the issuer during the pre-announcement period. | LexisNexis UK |
| **Log (1+coverage)** | The natural logarithm of one plus coverage. | LexisNexis UK |
| **Sentiment per article** | The ratio of the number of positive words minus negative words to total words. | LexisNexis UK |
| **Sentiment** | The mean value of sentiment per article during the pre-announcement period. | LexisNexis UK |

**Table 4.1 Number of SEOs and Proceeds Amounts**

The table presents the annual number, the annual total proceed and the annual average proceed of SEOs (excluding utilities and financials) listed on the LSE from 1996 to 2010. The proceed is in millions of US dollars. All SEOs are separated into two groups: SEO with news and SEO without news. The group of SEO with news (SEO without news) is defined as the SEO firms that are (not) covered by media news from 90 days before the announcement day to 2 days before the announcement day. All media articles are collected from the LexisNexis UK and comprise all news articles from the *Financial Times* (London), *The Times* (London), *Guardian*(London), *Mirror* and *Sunday Mirror*.

| | All SEOs | | | SEOs with news | | | SEOs without news | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. of SEO | Total proceed | Average proceed | No. of SEO | Total proceed | Average proceed | No. of SEO | Total proceed | Average proceed |
| **1996** | 11 | 1094.19 | 99.47 | 8 | 775.90 | 96.99 | 3 | 318.29 | 106.10 |
| **1997** | 7 | 771.17 | 110.17 | 4 | 417.04 | 104.26 | 3 | 354.13 | 118.04 |
| **1998** | 13 | 2747.72 | 211.36 | 10 | 2591.59 | 259.16 | 3 | 156.13 | 52.04 |
| **1999** | 11 | 3128.05 | 284.37 | 9 | 2846.92 | 316.32 | 2 | 281.13 | 140.57 |
| **2000** | 38 | 7568.65 | 199.18 | 23 | 5784.30 | 251.49 | 15 | 1784.35 | 118.96 |
| **2001** | 39 | 4138.73 | 106.12 | 26 | 2316.68 | 89.10 | 13 | 1822.05 | 140.16 |
| **2002** | 24 | 3771.94 | 157.16 | 10 | 2799.05 | 279.91 | 14 | 972.89 | 69.49 |
| **2003** | 29 | 3970.33 | 136.91 | 13 | 1615.94 | 124.30 | 16 | 2354.39 | 147.15 |
| **2004** | 39 | 3861.04 | 99.00 | 16 | 2254.51 | 140.91 | 23 | 1606.53 | 69.85 |
| **2005** | 31 | 4607.11 | 148.62 | 16 | 2304.04 | 144.00 | 15 | 2303.07 | 153.54 |
| **2006** | 28 | 4696.63 | 167.74 | 16 | 3273.83 | 204.61 | 12 | 1422.8 | 118.57 |
| **2007** | 19 | 5538.47 | 291.5 | 12 | 3381.71 | 281.81 | 7 | 2156.76 | 308.11 |
| **2008** | 15 | 2902.72 | 193.51 | 8 | 2015.31 | 251.91 | 7 | 887.41 | 126.77 |
| **2009** | 103 | 27942.00 | 271.28 | 52 | 14260.88 | 274.25 | 51 | 13681.12 | 268.26 |
| **2010** | 8 | 670.38 | 83.80 | 5 | 412.66 | 82.53 | 3 | 257.72 | 85.91 |
| **Total** | 415 | 77409.13 | 2560.19 | 228 | 47050.36 | 2901.56 | 187 | 30358.77 | 2023.51 |

**Figure 4.1The Annual Number of SEOs**

This figure presents the annual number of SEOs (excluding utilities and financials) listed on the LSE from 1996 to 2010. All SEOs are separated into two groups: SEO with news and SEO without news. The group of SEO with news (SEO without news) is defined as the SEO firms that are (not) covered by media news from 90 days before the announcement day to 2 days before the announcement day. All media articles are collected from the LexisNexis UK and comprise all news articles from the *Financial Times* (London), *The Times* (London), *Guardian*(London), *Mirror* and *Sunday Mirror*.
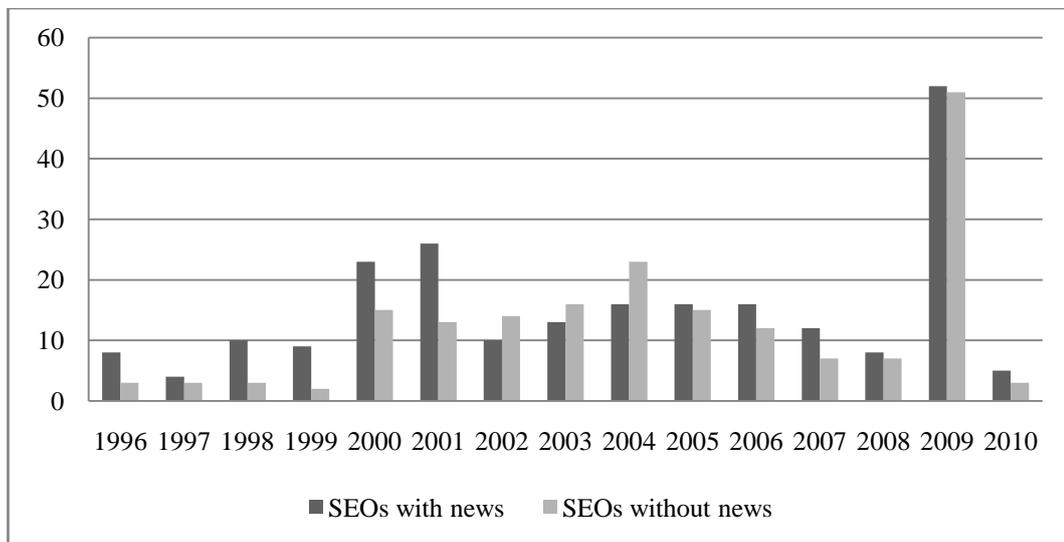
**Figure 4.2 The Annual Average Proceed Amount of SEO**

This figure presents the annual average proceeds of SEOs (excluding utilities and financials) listed on the LSE from 1996 to 2010. The proceed is in millions of US dollars. All SEOs are separated into two groups: SEO with news and SEO without news. The group of SEO with news (SEO without news) is defined as the SEO firms that are (not) covered by media news from 90 days before the announcement day to 2 days before the announcement day. All media articles are collected from the LexisNexis UK and comprise all news articles from the *Financial Times* (London), *The Times* (London), *Guardian*(London), *Mirror* and *Sunday Mirror*.
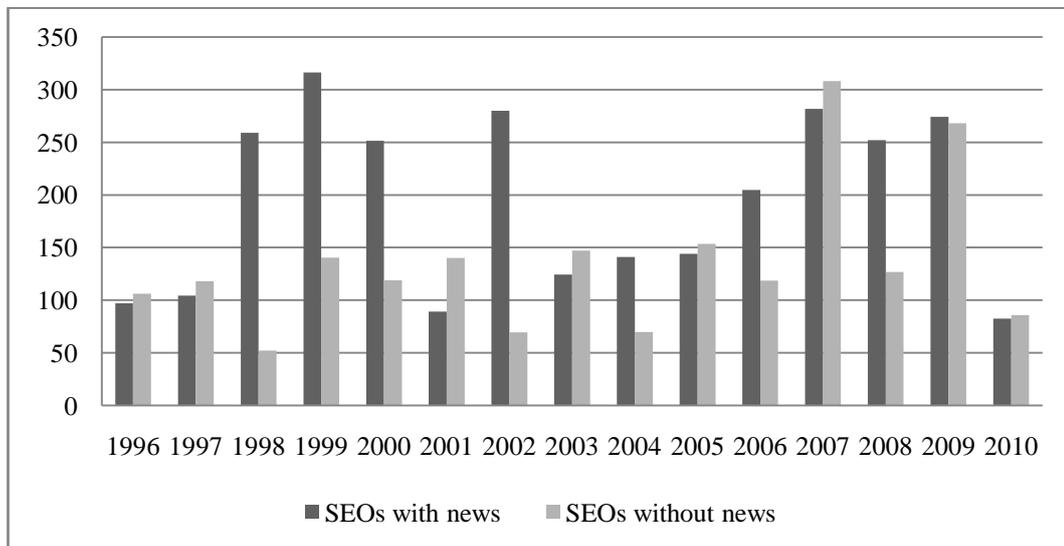
**Table4.2 Summary Statistics of Media Data**

This table presents summary statistics of the media variable for the UK SEO issuers from 1996 to 2010. All news articles are collected from the LexisNexis UK, comprising all news articles from the *Financial Times* (London), *The Times* (London), *Guardian* (London), *Mirror* and *Sunday Mirror*. Coverage is defined as the total number of media articles related to the issuer during the pre-announcement period. Sentiment is calculated as the mean of the sentiment per article during the pre-announcement period, where sentiment per article is defined as the ratio of (Positive words-Negative words) to Total words. Positive words and negative words are identified referring to the work of Loughran and McDonald (2010). The pre-announcement media window is estimated over [-30,-2] [-60,-2] [-90, -2].

| Variable | Sum | Mean | Median | Std | 10th | 90th | No. of SEO with news |
|---|---|---|---|---|---|---|---|
| **coverage [-30,-2]** | 2915 | 16.10 | 5 | 27.89 | 1 | 48 | 181 |
| **coverage [-60,-2]** | 4841 | 22.62 | 6 | 41.87 | 1 | 54 | 214 |
| **coverage [-90,-2]** | 6870 | 30.13 | 8 | 59.85 | 1 | 79 | 228 |
| **Sentiment [-30,-2] (%)** | -98.55 | -0.54 | -0.54 | 1.22 | -1.96 | 0.65 | 181 |
| **Sentiment [-60,-2] (%)** | -116.49 | -0.54 | -0.54 | 1.29 | -1.96 | 0.65 | 214 |
| **Sentiment [-90,-2] (%)** | -143.17 | -0.63 | -0.58 | 1.23 | -2.08 | 0.40 | 228 |

## Table 4.3 Issue and Firm Characteristics of SEOs

The table presents the mean, median and standard deviation of issue (Panel A) and firm characteristics (Panel B) for UK SEOs (excluding utilities and financials) from 1996 to 2010. All SEOs are separated into two groups: SEO with news and SEO without news. The group of SEO with news (SEO without news) is defined as the SEO firms that are (not) covered by media news from 90 days before the announcement day to 2 days before the announcement day. Issue characteristics are obtained from Thomson One Banker. Financial factors are obtained from DATASTREAM. Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. Proceed is the SEO offer amount in millions of US dollars. All the financial factors refer to the previous year. MV is the market value of firm's equity. ROE is the ratio of net income over the book value of equity.MV/BV is the ratio of the market value of equity to book value of equity. Leverage is the ratio of total debt to total asset. Dividend is the cash dividend on stock price. Turnover is calculated as monthly moving average turnover ratio for the estimated period [-260, -2] prior to announcement day, where turnover ratio is daily trading volume divided by the share outstanding. Wilcoxon Signed Rank test is used to test the difference in means between two groups, SEO with news and SEO without news. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

| Variable | All SEOs | | | SEOs with news | | | SEOs without news | | | Difference | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | Median | Std | Mean | Median | Std | Mean | Median | Std | in Mean | in Mean p-value |
| **Panel A Issue characteristics** | | | | | | | | | | | |
| **Proceed ($ mil)** | 186.53 | 110.58 | 211.74 | 206.36 | 127.56 | 218.55 | 162.35 | 87.55 | 201.08 | 44.01*** | 0.00 |
| **Discount (%)** | 11.90 | 10.47 | 23.12 | 9.48 | 9.15 | 24.41 | 14.85 | 12.01 | 21.16 | -5.37 | 0.11 |
| **Panel B Firm characteristics** | | | | | | | | | | | |
| **MV ($ mil)** | 3854.50 | 555.85 | 15628.34 | 5737.59 | 816.51 | 20740.14 | 1558.55 | 418.84 | 3003.95 | 4179.04*** | 0.00 |
| **ROE (%)** | 7.36 | 5.16 | 97.96 | 11.17 | 5.85 | 122.25 | 2.70 | 4.54 | 55.52 | 8.47 | 0.61 |
| **MV/BV** | 3.15 | 1.96 | 4.07 | 3.49 | 1.96 | 4.88 | 2.74 | 1.99 | 2.73 | 0.75 | 0.17 |
| **Leverage (%)** | 26.28 | 24.96 | 18.15 | 28.15 | 26.26 | 18.52 | 23.99 | 24.54 | 17.48 | 4.17* | 0.05 |
| **Dividend (%)** | 7.09 | 3.70 | 9.89 | 7.66 | 3.63 | 11.06 | 6.40 | 3.80 | 8.22 | 1.26 | 0.49 |
| **Turnover (%)** | 5.94 | 3.90 | 8.14 | 6.69 | 3.95 | 9.76 | 5.02 | 3.88 | 5.45 | 1.67* | 0.09 |
| **No. of Obs** | | 415 | | | 228 | | | 187 | | | |

**Table 4.4 Announcement Return on SEOs**

This table reports past stock performance and announcement returns in percentage for UK SEOs (excluding utilities and financials) from 1996 to 2010,using the Carhart four-factor model (1997). All SEOs are separated into two groups: SEO with news and SEO without news. The group of SEO with news (SEO without news) is defined as the SEO firms that are (not) covered by media news from 90 days before the announcement day to 2 days before the announcement day. Past stock performance is defined as the cumulative average abnormal return for SEO firms during the period [-260, -2] prior to announcement day. Our study highlights the 2-day [-1, 0] and 3-day [-1, 1] announcement windows. The t-test is used under the null hypothesis of zero abnormal return. Wilcoxon Signed Rank test is used to test the difference in means between the two groups, SEO with news and SEO without news. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

| Event window | All SEOs | | SEOs with news | | SEO without news | | Difference | |
|---|---|---|---|---|---|---|---|---|
| | CAAR | P-value | CAAR | P-value | CAAR | P-value | in mean | in mean P-value |
| Past stock performance | 0.09*** | [<.0001] | 0.08*** | [<.0001] | 0.01*** | [<.0001] | 0.07 | [0.43] |
| 2-day [-1, 0] (%) | -0.75** | [0.01] | -1.35 | [0.24] | -0.43** | [0.01] | -0.92** | [0.03] |
| 3-day [-1, 1] (%) | -1.14*** | [<.0001] | -1.24*** | [0.00] | -0.85** | [0.02] | -0.39* | [0.09] |
| No. of Obs | 415 | | 228 | | 187 | | | |

**Table 4.5 The Impact of Media on SEO Discount**

This table presents the regression results of SEO discount on media features, issuer financial variables and market conditions for UK SEOs from 1996 to 2010. The dependent variable is discount, which is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. Log (1+ Coverage) is the natural logarithm of 1 plus coverage; coverage is defined as the total number of media articles related to issuers during the pre-announcement period. Sentiment is calculated as the mean of the sentiment per article during the pre-announcement period, where sentiment per article is defined as the ratio of (Positive words-Negative words) to Total words. Positive words and negative words are identified referring to the work of Loughran and McDonald (2010). The pre-announcement media windows are estimated over [-30, -2] [-60, -2] and [-90, -2]. Private is a dummy variable that takes the value of one for private placements and zero for others. Right takes the value of one when the issue is a rights offer. Proceed/MV is the SEO offer amount divided by market value of equity. Size is the log of the market value of equity. ROE is the ratio of net income over the book value of equity.MV/BV is the ratio of the market value of equity to book value of equity. Leverage is the ratio of total debt to total asset. Dividend is the cash dividend on stock price. Turnover is calculated as monthly moving average turnover ratio for the estimated period [-260, -2] prior to announcement day, where turnover ratio is daily trading volume divided by the share outstanding. Pasts is past stock performance, which is defined as the cumulative average abnormal return for SEO firms during the period [-260, -2] prior to announcement day. Pastm is the past market conditions, which is defined as cumulative equal-weighted market returns for the same period. All firm variables are lagged with respect to the dependent variable. All regressions include year and industry fixed effect. The p-value for the chi-squared test statistic is shown in square brackets. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

| Variables | Estimation 1 | | Estimation 2 | | Estimation 3 | |
|---|---|---|---|---|---|---|
| | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value |
| Intercept | 0.413*** | [<.0001] | 0.392*** | [<.0001] | 0.414*** | [<.0001] |
| Log (1+Coverage)[-30,-2] | -0.511** | [0.013] | | | | |
| Log (1+Coverage) [-60,-2] | | | -0.365** | [0.031] | | |
| Log (1+Coverage) [-90,-2] | | | | | -0.196 | [0.224] |
| Sentiment [-30,-2] | -0.493** | [0.012] | | | | |
| Sentiment [-60,-2] | | | -0.286** | [0.032] | | |
| Sentiment [-90,-2] | | | | | -0.255* | [0.056] |
| Private | -0.455 | [0.466] | -0.603 | [0.913] | 0.314 | [0.953] |
| Right | 0.276 | [0.957] | -0.728 | [0.862] | -0.247 | [0.567] |
| Proceed/MV | 0.406*** | [0.000] | 0.323** | [0.017] | 0.313** | [0.023] |
| Size | -0.317** | [0.015] | -0.245* | [0.063] | -0.317** | [0.027] |
| ROE | 0.276** | [0.033] | 0.247** | [0.047] | 0.254* | [0.053] |
| MV/BV | -0.842** | [0.014] | -1.003*** | [0.002] | -1.025*** | [0.000] |
| Leverage | -0.174 | [0.118] | -0.185* | [0.054] | -0.135 | [0.154] |
| Dividend | 0.638** | [0.013] | 0.554*** | [0.003] | 0.543*** | [0.001] |
| Turnover | 0.264 | [0.117] | 0.292* | [0.073] | 0.233 | [0.164] |
| Pasts | -0.545** | [0.043] | -0.814* | [0.094] | -0.707** | [0.023] |
| Pastm | 1.807 | [0.327] | 2.943 | [0.113] | 3.203* | [0.074] |
| Adjusted $R^2$ | 0.275 | | 0.214 | | 0.188 | |
| No. of Obs | 181 | | 214 | | 228 | |

**Table 4.6 The Impact of Media on SEO Announcement Return**

This table presents regression results of the announcement effect on media features, issuer's financial variables and market conditions for UK SEOs from 1996 to 2010. The dependent variable is the three-day announcement window, CAAR [-1, 1]. Panel A shows the cross-sectional effect of media coverage on SEO announcement returns. Panel B presents the role of media attitude in SEO announcement effect. Log (1+ Coverage) is the natural logarithm of 1 plus coverage; coverage is defined as the total media articles related to issuers during the pre-announcement period. Sentiment is calculated as the mean of the sentiment per article during the pre-announcement period, where sentiment per article is defined as the ratio of (Positive words-Negative words) to Total words. Positive words and negative words are identified referring to the work of Loughran and McDonald (2010).The pre-announcement media windows are estimated over [-30, -2] [-60, -2] and [-90, -2]. Private is a dummy variable that takes the value of one for private placements and zero for others. Right takes the value of one when the issue is a rights offer. Discount is defined as 1- offer price /price (-1), where price (-1) is the close market price on day -1 prior to the announcement day. Proceed/MV is the SEO offer amount divided by market value of equity. Size is the natural logarithm of the market value of equity. ROE is the ratio of net income over the book value of equity.MV/BV is the ratio of the market value of equity to book value of equity. Leverage is the ratio of total debt to total asset. Dividend is the cash dividend on stock price. Turnover is calculated as monthly moving average turnover ratio for the estimated period [-260, -2] prior to announcement day, where turnover ratio is daily trading volume divided by the share outstanding. Pasts is past stock performance, which is defined as the cumulative average abnormal return for SEO firms during the estimated period [-260, -2] prior to announcement day. Pastm is the past market conditions, defined as cumulative equal-weighted market returns for the same estimated period. All firm variables are lagged with respect to the dependent variable. All regressions include year and industry fixed effect. The p-value for the chi-squared test statistic is shown in square brackets.***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

| | Panel A: Test results for media coverage effect | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variables | Estimation 1 | | Estimation 2 | | Estimation 3 | | Estimation 4 | | Estimation 5 | | Estimation 6 | |
| | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value |
| Intercept | -0.672 | [0.422] | -0.624 | [0.467] | -0.584 | [0.497] | -0.872 | [0.333] | -0.804 | [0.373] | -0.771 | [0.393] |
| Log (1+Coverage) [-30,-2] | -0.613*** | [0.000] | | | | | -0.479** | [0.036] | | | | |
| Log (1+Coverage) [-60,-2] | | | -0.468** | [0.033] | | | | | -0.345* | [0.073] | | |
| Log (1+Coverage) [-90,-2] | | | | | -0.452** | [0.018] | | | | | -0.344* | [0.053] |
| Private | 0.371*** | [0.000] | 0.372** | [0.024] | 0.381*** | [0.005] | 0.295*** | [0.003] | 0.294*** | [0.007] | 0.303*** | [0.004] |
| Right | 0.254 | [0.720] | 0.173 | [0.817] | 0.178 | [0.814] | -0.113 | [0.874] | -0.193 | [0.793] | -0.191 | [0.793] |
| Discount | -0.547 | [0.625] | -0.401 | [0.724] | -0.442 | [0.692] | -0.487 | [0.683] | -0.384 | [0.748] | -0.413 | [0.724] |
| Proceed/MV | 0.130* | [0.074] | 0.114* | [0.054] | 0.124** | [0.027] | 0.285** | [0.043] | 0.275* | [0.067] | 0.279* | [0.051] |
| Size | | | | | | | 0.594* | [0.087] | 0.504* | [0.064] | 0.874* | [0.077] |
| ROE | | | | | | | 0.274 | [0.393] | 0.263 | [0.423] | 0.292 | [0.194] |
| MV/BV | | | | | | | -0.964 | [0.898] | -0.174 | [0.804] | -0.154 | [0.823] |
| Leverage | | | | | | | 0.671** | [0.047] | 0.593* | [0.097] | 0.622* | [0.074] |
| Dividend | | | | | | | 0.391 | [0.887] | 0.434 | [0.874] | 0.384 | [0.883] |
| Turnover | | | | | | | -1.311*** | [<.001] | -1.331*** | [<.001] | -1.328*** | [<.001] |
| Pasts | | | | | | | -0.607 | [0.473] | -0.637 | [0.451] | -0.636 | [0.443] |
| Pastm | | | | | | | 2.363 | [0.364] | 2.471 | [0.341] | 2.524 | [0.337] |
| Adjusted R$^2$ | 0.042 | | 0.043 | | 0.043 | | 0.074 | | 0.075 | | 0.075 | |
| No. of Obs | 415 | | 415 | | 415 | | 415 | | 415 | | 415 | |

**Table 4.6 Continued**

| | Panel B Test results for media sentiment effect | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | Estimation 1 | | Estimation 2 | | Estimation 3 | | Estimation 4 | | Estimation 5 | | Estimation 6 | |
| | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value |
| Intercept | -0.121 | [0.415] | -0.184 | [0.896] | 0.123 | [0.926] | -0.878 | [0.660] | -0.473 | [0.794] | -0.774 | [0.793] |
| Log (1+Coverage) [-30,-2] | -0.581* | [0.074] | | | | | -0.384** | [0.023] | | | | |
| Log (1+Coverage) [-60,-2] | | | -0.813** | [0.024] | | | | | -0.614** | [0.045] | | |
| Log (1+Coverage) [-90,-2] | | | | | -0.957*** | [0.004] | | | | | -0.871** | [0.044] |
| Sentiment [-30,-2] | 0.364** | [0.033] | | | | | 0.53** | [0.014] | | | | |
| Sentiment [-60,-2] | | | 0.544* | [0.095] | | | | | 0.213* | [0.064] | | |
| Sentiment [-90,-2] | | | | | 0.196* | [0.054] | | | | | 0.353* | [0.056] |
| Private | 0.583*** | [0.000] | 0.523*** | [0.000] | 0.548*** | [<.0001] | 0.554*** | [0.000] | 0.484*** | [0.000] | 0.518*** | [0.000] |
| Right | 0.134 | [0.203] | 0.744 | [0.455] | 1.001 | [0.921] | 0.681 | [0.545] | 0.308 | [0.773] | -0.844 | [0.774] |
| Discount | -0.241 | [0.174] | -0.171 | [0.297] | -0.168 | [0.286] | -0.032 | [0.161] | -0.183 | [0.298] | -0.156 | [0.296] |
| Proceed/MV | 0.368** | [0.033] | 0.314* | [0.054] | 0.419** | [0.027] | 0.753** | [0.044] | 0.577* | [0.087] | 0.569* | [0.087] |
| Size | | | | | | | -0.473* | [0.082] | 0.626** | [0.049] | 0.214** | [0.045] |
| ROE | | | | | | | -0.175 | [0.488] | -0.187 | [0.367] | -0.216 | [0.269] |
| MV/BV | | | | | | | -0.693 | [0.427] | -0.668 | [0.421] | -0.574 | [0.428] |
| Leverage | | | | | | | -0.317** | [0.039] | -0.216* | [0.067] | -0.973* | [0.067] |
| Dividend | | | | | | | 0.404 | [0.326] | 0.289 | [0.443] | 0.221 | [0.442] |
| Turnover | | | | | | | -1.327*** | [0.000] | -1.347*** | [0.000] | -1.348*** | [0.000] |
| Pasts | | | | | | | -0.643 | [0.654] | -1.334 | [0.314] | -1.375 | [0.316] |
| Pastm | | | | | | | -1.991 | [0.673] | 0.417 | [0.974] | -0.275 | [0.896] |
| Adjusted R2 | 0.081 | | 0.078 | | 0.090 | | 0.134 | | 0.119 | | 0.133 | |
| No. of Obs | 181 | | 214 | | 228 | | 181 | | 214 | | 228 | |

**Table 4.7 The Impact of Media on Offer Size of SEOs**

This table presents regression results of relative offer size on media features, issue characteristics and firm financial factors for UK SEOs during the period from 1996 to 2010. The dependent variable is relative offer size of the SEOs, which is the SEO proceed amount scaled by the market value of equity. Log (1+ Coverage) is the natural logarithm of 1 plus coverage; coverage is defined as the total number of media articles related to issuers during the pre-announcement period. Sentiment is calculated as the mean of the sentiment per article during the pre-announcement period, where sentiment per article is defined as the ratio of (Positive words-Negative words) to Total words. Positive words and negative words are identified referring to the work of Loughran and McDonald (2010). The pre-announcement media windows are estimated over [-30,-2] [-60,-2] [-90, -2]. Private is a dummy variable that takes the value of one for private placements and zero for others. Right takes the value of one when the issue is a rights offer. Size is the natural logarithm of the market value of equity. ROE is the ratio of net income over the book value of equity.MV/BV is the ratio of the market value of equity to book value of equity. Leverage is the ratio of total debt to total asset. Dividend is the cash dividend on stock price. All firm variables are lagged with respect to the dependent variable. All regressions include year and industry fixed effect. The p-value for the chi-squared test statistic is shown in square brackets. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

| Variables | Estimation 1 | | Estimation 2 | | Estimation 3 | |
|---|---|---|---|---|---|---|
| | Coefficient | p-Value | Coefficient | p-Value | Coefficient | p-Value |
| Intercept | 3.414*** | [<.0001] | 2.998*** | [<.0001] | 2.947*** | [<.0001] |
| Log (1+Coverage) [-30,-2] | 0.380*** | [<.0001] | | | | |
| Log (1+Coverage) [-60,-2] | | | 0.444*** | [<.0001] | | |
| Log (1+Coverage) [-90,-2] | | | | | 0.436*** | [<.0001] |
| Sentiment [-30,-2] | -3.362 | [0.615] | | | | |
| Sentiment [-60,-2] | | | -6.094 | [0.217] | | |
| Sentiment [-90,-2] | | | | | -9.807 | [0.465] |
| Private | 0.870** | [0.015] | 0.917*** | [0.007] | 1.027*** | [0.004] |
| Right | 0.347* | [0.098] | 0.563** | [0.012] | 0.635*** | [0.006] |
| Size | 0.330*** | [<.0001] | 0.337*** | [<.0001] | 0.344*** | [<.0001] |
| ROE | -0.214 | [0.255] | -0.213 | [0.277] | -0.211 | [0.247] |
| MV/BV | 0.108 | [0.164] | 0.108 | [0.165] | 0.073 | [0.276] |
| Leverage | 2.295*** | [<.0001] | 2.527*** | [<.0001] | 2.328*** | [<.0001] |
| Dividend | -0.877*** | [<.0001] | -0.901*** | [<.0001] | -0.957*** | [<.0001] |
| Adjusted R$^2$ | 0.388 | | 0.48 | | 0.58 | |
| No. of Obs | 181 | | 214 | | 228 | |

# Chapter 5 Conclusions, Implications, and Future Research

## 5.1 Conclusions

This study focuses on what factors influence firms when they are making financing decisions. In Chapter 2 and 3, this study examines whether the decision of a firm's external financing activities is influenced by ownership structure and market timing. In Chapter4, this study investigates the role of public media in seasoned equity issue.

This study provides strong evidence to support the proposition that ownership structure has a significant effect on firm capital structure and financing decisions. Three ownership measures are used as proxies for the incentives of various shareholders: ownership concentration, managerial share ownership, and institutional ownership.

First, Chapter 2 finds that ownership structure can influence a firm's financial leverage ratio. The results show that the relation between ownership concentration and leverage level is non-monotonic, as the relation between managerial ownership and debt ratio. The results indicate that ownership-concentrated firms are willing to have lower leverage levels, whereas firms with dispersed ownership

tend to choose higher levels of debt. Similarly, at lower levels of managerial ownership, firm prefer a higher level of debt, which is consistent with managerial entrenchment theory (Jensen, 1986). However, firms with higher levels of managerial ownership are more likely to lower the debt ratio, which is in a line with interest alignment theory (Jensen and Meckling, 1986).

Second, Chapter 2 also examines the effect of ownership on firm external financing decisions from two aspects: the choice between bond and equity issues and issue size. The results imply that ownership-concentrated firms prefer equity over debt to avoid the risk of bankruptcy. However, large shareholders have an incentive to maintain their voting rights and control powers, so they should encourage firms to make smaller equity issuances. The findings also suggest that firms with lower managerial ownership are willing to issue bonds over equity and vice versa at higher managerial ownership levels. This finding is also consistent with managerial entrenchment theory and interest alignment theory. Moreover, firms with higher institutional ownership are more likely to issue equity over bonds, although they can carry out a larger bond issue due to lower bond yields (Bhojraj and Sengupta, 2003).

Third, Chapter 3 investigates the impact of ownership on a firm's choice of seasoned equity issue methods. When UK firms make SEO decisions, four issue methods can be chosen: a rights offer, placing, an open offer, and an open offer with placing. By using a multinomial logistic regression, Chapter 3 finds that ownership-concentrated firms prefer rights offers or open offers over placing. This

finding supports the controlling hypothesis that large shareholders are willing to preserve their ownership of shares and maintain the benefits from control, so they pressure firms into SEOs using a right-preserving offering method.

Moreover, the results indicate that firms with high managerial ownership are more likely to choose placing as the SEO method. This finding can be explained by the argument of Barclay et al. (2007), that is, placings are often made with friendly investors who will probability vote in the manager's favour, resulting in more entrenched management. In addition, Chapter 3 reports that firms with lower institutional ownership are more likely to issue equity by placing. A lower level of institutional ownership indicates that firms may lack monitoring, so that they can create new monitors through placing, leading to increased management monitoring.

Fourth, Chapter 3 also analyzes whether firm ownership structure can influence SEO price setting and market reactions to SEO announcements. The results indicate that ownership-concentrated firms are likely to price SEOs with higher offer discounts, which can be interpreted as compensation for investors who invest in illiquid stocks. The result suggests that firms with higher institutional ownership are likely to price shares higher, that is, at a lower discount. This finding supports the monitoring hypothesis, in which institutional holding is a proxy for firm quality verification.

Moreover, the results of this dissertation strongly support our prediction that firm financing decisions are determined by market timing. First, Chapter 2 finds that favourable market conditions increase the probability of a firm issuing equity over debt. Moreover, the results indicate that the effect of managerial ownership on firm financing decisions changes under different stock market valuations. Chapter 2 classifies the market into hot and cold periods based on three-month moving averages of scaled equity issue volume. The results indicates that a hot market increases the likelihood of firms with high managerial ownership choosing equity issuance over debt, but a cold market significantly reduces this probability.

Second, the evidence also suggests that firms are likely to issue equity when the indirect cost is relatively low. The results of Chapter 3 show that announcement returns are higher (lower) when SEOs are conducted in favourable (unfavourable) market conditions. Further, firms are likely to choose rights offers when the stock market is favourable, while they prefer placing under cold conditions. Since placing is value certification, overvalued (undervalued) firms are less (more) likely to choose placing as the issue method. The results imply that SEOs in a hot market are likely to be motivated by firm overvaluation.

The results of Chapter 4 suggest that financial media are a determinant of a firm's financing decision, according to two aspects: SEO price setting and announcement returns. This thesis constructs two media variables: media coverage and media sentiment. It is shown that higher media coverage can decrease the SEO discount. This finding can be interpreted to imply that mass

media news attracts more investors to participate in SEOs, thereby increasing short-term demand for the new shares. Consequently, the offer discount is set at a lower level. The results also suggest that issuing firms covered by more positive media are likely to price offers with lower discounts and generate higher announcement returns. This finding supports the argument that media content contributes to sentimental investors' expectations. More specifically, the positive information in the media content will generate more optimistic investors (Tetlock, 2007).

## 5.2 Implications

The results of this study may provide implications for firm managers, underwriters, and investors. Our research increases the understanding of both issuing firms and underwriters in SEO activities. This can help them better manage firm financing decisions. First, this thesis provides implications on the best times for firms to make equity issue decisions. The results indicate that market reactions to SEO announcements are more favourable in a hot market. Therefore, managers and underwriters should make equity issue opportunistically during hot market periods, since they can take advantage of the lower indirect costs. Moreover, the results suggest that better pre-issue stock performance could decrease the discount of the SEO offer and generate favourable SEO announcement returns. This finding suggests that a firm's prior stock performance is an important factor to determine the timing of SEO activities. The implication is

that the optimal time for equity issuance is following the run-up of the firm's stock price.

Second, this study also proposes implications on a firm's choice of equity issue method. The results indicate that the offer price discount in placing is much lower than that in a rights offer. Moreover, market reactions to announcements of placings are significantly positive, but the announcement returns of rights offers are negative, on average. This implies that rights offers induce higher indirect costs, while placings induce lower indirect costs. Thus, managers should choose placing as the seasoned equity issue method if the firm's stock is not overvalued. Furthermore, these implications can in turn help investors readjust their estimations of stock value according to firm SEO performance.

Third, the evidence presented in Chapter 4 clearly demonstrates that positive news about the issuer is associated with a lower offer price discount and a higher SEO announcement return. Thus, the manager and underwriter can create more positive media news about a firm prior to the SEO announcement date and benefit from the higher offer price and favourable market reaction.

Understanding these implications is also important for investors. For instance, knowing when firms make equity issue, or which issue method is chosen, it helps investors evaluate what drives firm financing decision to avoid negative price reaction at the issue announcement.

## 5.3 Future Research

The results have some limitations and suggest some interesting avenues for future research. In Chapters 2 and 3, our research emphasizes ownership concentration, managerial share ownership, and institutional ownership as proxies for ownership structure. Cronqvist and Fahlenbrach (2009) find that pension and mutual funds, hedge funds, and insurance companies have different influences on leverage decisions. Therefore, this study could further consider types of institutional shareholders in future research. For the same reason, it is also unclear that how different types of institutional shareholders affect firm external financing decisions.

Moreover, this thesis has not considered the impact of optimal capital structure. On the one hand, some studies argue that firms have strong incentive to move their leverage ratio towards to optimal ratio when making financing decisions (e.g. Fama and French, 2002; Leary and Roberts, 2005). It suggests firms' financing decision is determined by the difference between the actual leverage ratio and optimal ratio. Thus future research could examine how ownership structure affects the speed of firm capital structure adjustment according to dynamic trade-off theory.

One the other hand, this study has addressed the effect of marketing timing on firms' financing decisions. Some studies find that the market timing has a long-lasting effect on capital structure (e.g. Baker and Wurgler 2002; Welch, 2004). Such effect

may vanish within several years after equity issue, consistent with dynamic trade-off theory (e.g. Leary and Roberts, 2005, Alti, 2006). Therefore, further research could examine how persistent is the impact of market timing on capital structure.

Chapters 3 and 4 focused on the choice of UK SEO methods, pricing setting, and market reactions to announcement returns. However, the long-term stock performance of SEOs remains unexplored, which could be addressed in future research. Additionally, Chapter 4 suggests that a future study could investigate the impact of the media on other corporate financing decisions, such as debt issuance and share repurchase.

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