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Abstract

This paper examines the choice between two rights-preserving issue methods of seasoned equity offers in the UK as well as the factors determining the offer price and stock market announcement reactions. Firstly, equity issues in the UK are underwritten for different reasons than in other countries. Only severely financially distressed companies choose not to underwrite their share offer. Second, the average announcement reaction to non-underwritten issues is much more negative than to underwritten issues. This contrasts sharply with the results found in other countries, such as the US. Third, underwritten rights issues experience a negative announcement return whereas the share price reaction to underwritten open offers is positive. The choice of issue method and the subsequent announcement reaction are explained by directors' and institutional investors' interests, growth opportunities, stock market uncertainty and liquidity in the market for rights.

Keywords: seasoned equity, rights issue, open offer, capital structure, financial distress

JEL Classification: G3, G33, G34

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1. Introduction.

Seasoned equity issues of common stock have been subject to many studies since the early 1960s. Most research has focused on the US and in particular on the way shares are issued and the subsequent market reaction to announcement of an issue. This study shows that theories regarding the choice of issue method developed for the US are not applicable to the UK. The reasons are the existence of different flotation methods and underwriting practices. Whereas past literature on UK equity issues has focused on the share price reaction to announcement of seasoned equity issues, this paper attempts to explain the motivation of companies preferring one issue method over another. The role that financial distress and ownership structure play in this decision will be investigated using a sample of UK equity offerings in the 1990s. Subsequently, a more fundamental analysis is made of the difference in announcement reaction across issue methods.

In the US and most other countries, the share price announcement reactions for underwritten issues are more negative relative to non-underwritten ones. This implies that equity issues are underwritten for reasons of insurance whenever the expected take-up is low. In contrast, announcement reactions to non-underwritten issues compared to underwritten ones are opposite to what is found in other countries: non-underwritten equity issues in the UK experience a more negative announcement reaction compared to underwritten issues. Thus, it seems that the underwriting process in the UK predominantly fulfills a certification role. When an issue is not underwritten, the issuer is almost always in severe financial difficulties. Thus, the announcement of a non-underwritten issue signals that the issuer is not able to find an underwriter.

In contrast to US shareholders, UK investors almost never waive their pre-emption rights. Still, the issuer faces the choice between two rights-preserving issue methods: the open offer versus the rights issue. With the latter method, the rights granted can be sold at a premium, but the offer price discount is significantly larger than that of an open offer in which rights are not transferable. Using a sample of British industrial firms quoted on the London Stock Exchange's (LSE) Official List, we investigate whether or not issuer performance, future growth prospects, ownership structure and the use of the proceeds of the issue are important determinants of the choice of flotation method.

We also examine the discount setting process of rights issues and open offers. In particular, we examine the role of the lead underwriter and his exposure, the attractiveness of the issue in terms of relative performance and growth opportunities.

We report the following results. Underwriters reduce their exposure by setting larger offer price discounts in rights issues. Sponsors (arrangers) who also act as lead underwriter are susceptible to conflicts of interest and set larger discounts than those arrangers who are not also underwriters of the issue. In addition, the top three underwriters in the UK, who may have more bargaining power in discount negotiations of rights issues with the issuing firm, also set higher discounts. Whereas there is

no relation between the discount in a rights issue and the corporate growth opportunities, a higher discount is set for high growth firms issuing equity by means of open offers. Thus, it seems that firms with high market-to-book ratios embed more uncertainty reflected in the discount than 'value' firms with lower growth ratios.

The choice between performing a rights issue or an open offer depends mainly on the interests of directors, future growth opportunities, stock market uncertainty and the liquidity in the market for rights. A large required investment by insiders, large market volatility and an illiquid market for rights induce companies to issue shares by means of an open offer. Good corporate growth perspectives make a firm opt for a open offer whereas firms with low book-to-market ratios opt for a rights offer especially when directors or institutions own substantial share stakes.

Finally, we find that underwritten rights issuers experience a significantly negative announcement abnormal of –2.3% whereas the market reacts positively (2.8%) to the announcement of an underwritten open offer. Higher pre-issue levels of director ownership and ownership concentration combined with a decrease in both of these levels, the use of the proceeds for acquisitions or debt reduction, and better growth opportunities explain most of the positive share price reaction to open offers. Rights issues' announcement effect is more negative when the firm is in financial distress, when large discounts are made (which signal bad short-term share price performance) and when there are fewer growth opportunities.

The paper is organized as follows. The next section gives a brief summary of the various methods to issue shares that are available to companies listed on the LSE. An overview of the past literature on seasoned equity issues and of the institutional differences between issue methods in the US and the UK is given in section 3. Section 4 describes the sample selection procedure and presents descriptive statistics. In section 5, the estimation method of announcement returns, as well as a description of average market reactions to the different issue methods are presented. Section 6 contains cross-sectional analyses of the decision to underwrite, the level of issue price discount, and the choice of issue method. Section 7 continues with a cross-sectional analysis of the announcement reaction to equity issues and section 8 concludes.

2. (Auto-)Regulatory aspects of alternative flotation methods of UK seasoned equity offerings.

UK firms performing a seasoned equity issue of common stock can choose from three floatation methods: placing, rights issue or open offer. Rights issues and open offers are equity issues to the current shareholders (and subsequently to the public or to institutions, when shareholders do not take up any or part of the seasoned equity), whereas placings are issues to specific persons or clients of the sponsor or broker[1]. While in rights issues and open offers preemption rights are granted to the current shareholders in proportion to their holdings, no such entitlements exist in placings. Pre-

[1] A placing is distinctly different from a 'private placing': the former refers to an issue of common stock of a listed firm whereas the latter refers to an issue of common unlisted stock.

emption rights are a prime mechanism to protect shareholders' wealth and control and are enshrined in European Community law through the Second Council Directive on Company Law of 1976, and in UK Company Law through the Companies Act 1985 section 89(1).

2.1 Placings.

A placing is a fixed-price offering in which an underwriter purchases new shares and sells them on to outside investors (primarily, institutions). Placings are only performed for small equity issues inducing only limited dilution of shareholder control. The Listing Rules issued by the UK Listing Authority (UKLA, 2000) state that placings are only allowed for equity issues of at most 5% of the outstanding share capital unless this restriction is waived by the shareholders in an Extraordinary General Meeting (EGM) with a supermajority of 75% of the votes. As shareholders almost never waive these rights, virtually all large stock issues are performed by way of rights issue or open offer. A second restriction limits the price discount of the newly issued shares to 10% of the middle market price at the time of the placing, unless the issuer is in severe financial difficulties or there are other exceptional circumstances (approved by the UKLA). The UKLA regulation is that of the official listing rules of the London Stock Exchange; non-complying companies are subject to fines. The UKLA regulation is rendered more strict by the Investor Protection Committees of the Association of British Insurers and the National Association of Pension Funds. These limit the size of placings not only to 5% of the existing share capital in any one year but also require that a series of placings be limited to 7.5% of outstanding capital in a rolling three-year period. Furthermore, the issue price discount should not exceed 5%. Even though these guidelines do not have any legal force, their moral authority is large such that violations hardly occur.

2.2 Rights issues[2].

In a rights issue, the existing shareholders can exercise preemption rights to purchase further securities in proportion to their holdings at an exercise price set at a discount to the pre-announcement share price. The preemption rights are represented by a renounceable letter or *provisional allotment letter* and need to be exercised within a period of 21 days subsequent to the announcement.[3] Alternatively, if existing shareholders do not wish to maintain their proportional equity stake, they can trade the provisional allotment letter (as 'nil paid' rights) during this period. The rights that are neither traded nor exercised within the three-week period, are sold in the market by the broker with the proceeds distributed to the shareholders.[4] Entitlements that are renounced before the offering (so-called *pre-renunciations*) are usually placed with an underwriter or directly with institutional

[2] Prior to 1986, the only flotation method of seasoned equity was the rights issue.
[3] The offer must be open for at least 21 days. However, if an EGM is necessary to approve the issue a notice period of 14 days must precede the offer period (21 days if a special resolution is proposed, which is usually the case).
[4] If the proceeds for an existing holder do not exceed £3.00, they may be retained for the company's benefit.

investors, and are called *placed firm*.[5] Placing rights firm is only allowed if the rights concerned represent at least 25% of the total amount of shares offered (unless the UKLA is convinced that a refusal to place a smaller fraction firm would be detrimental to the success of the issue). Furthermore, the price paid must not exceed one-half of the difference between the offer price and the theoretical ex-rights price. A rights offer can be insured or uninsured; in the former case the underwriter guarantees in a standby agreement that all shares will be sold at the offer price. In the UK, the rights issue announcement includes all the offer terms whereas the offer terms in the US are only finalized just prior to the subscription period.

2.3 Open offers.

Similar to a rights issue, an open offer is an invitation to current shareholders to purchase new shares in proportion to their holdings. Still, an open offer is *not* made by means of a renounceable letter (or any other negotiable document). This implies that existing holders who opt not to take up their allotments, will not be able to sell their entitlements in the market. An open offer is usually made in conjunction with other issue methods, almost always a conditional placing. Under this procedure, shares are placed with an underwriter (or directly with institutions or other investors) subject to recall for 21 days by shareholders that take up their pro-rata entitlements. This is also called a placing with *clawback*. These types of placings are not subject to the size rules for placings mentioned previously. Pre-renunciations are generally dealt with the same way as in rights offerings, except that the requirement of placing at least 25% of the issue does not have to be satisfied. As in a placing, the open offer subscription price should not be discounted by more than 10% of the middle market price at the time of announcing the terms, except in exceptional circumstances.

The vast majority of rights issues and open offers in the UK is underwritten (insured). Over the periods 1959-63 (Merrett et al., 1967) and 1986-94 (Slovin et al., 2000), 70% and 91%, respectively, were underwritten. This is confirmed by Armitage (1999) who reports that 91% of rights issues and 81% of open offers were underwritten in 1985-96.

3. Why do US shareholders more frequently waive the preemption rights privilege than in the UK?

3.1 Choice of issue method.

Preemption rights in rights issues and open offers are almost never waived by shareholders in the UK unless the equity issue is small. In contrast, shareholders of US firms frequently vote away the preemption privilege. '*Some financial economists are puzzled that so few firms use rights offerings since the direct costs of a rights issue is substantially less than the direct cost of an underwritten offering*' (Grinblatt and Titman 1998: 17). There seems to be no valid theoretical reasons or cost

[5] When share are 'placed firm', the broker calls up institutions and places the shares with the highest bidder. In the (unlikely) event that no institutions are interested in buying shares, the underwriter will take up the remaining shares (if underwritten) or the shares remain unsold (if not underwritten).

reasons why general cash offers ought to be preferred over rights issues (Hansen and Pinkerton 1982, 1984). '*The arguments that firms make for avoiding rights issues don't make sense. We do not know why [US firms] use cash offers. Perhaps there are hidden reasons, but until they are uncovered we don't think you should rule out rights issues*' (Brealey and Myers 1996: 405). A second difference between the UK and US floatation methods is that most UK rights issues are insured, whereas those in the US are frequently not underwritten (uninsured). For example, Eckbo and Masulis (1992) find 1057 firm-commitments offering over 1963-81 and 192 rights issues, of which 57 are non-underwritten.

Agency costs and signaling are put forward to explain the choice of issue method. Smith (1977) believes that agency costs can explain the widespread use of underwritten offerings in the US instead of the significantly cheaper (uninsured) rights offerings. He suggests that, first, managers may enjoy private benefits when underwriters attempt to 'bribe' them with 'wining and dining'. Second, the fact that investment bankers serve on corporate boards may facilitate lobbing for using that investment bank as managing underwriter. Third, a manager can set the offer price low so as to create oversubscription, which allows him to implement a rationing scheme. In such a scheme, specific classes of shareholders -like small shareholders or key personnel- can be favored such that large shareholder monitoring is reduced. Heinkel and Schwartz (1986) state that asymmetric information about firm quality explains the choice of flotation method. Low quality firms opt for a firm commitment offering, thus triggering the largest negative share price reactions. The highest quality firms chose an insured rights offering because underwriter certification provides them with a quality seal. Lower quality firms opt for an uninsured rights issue and use the subscription price to differentiate quality. Eckbo and Masulis (1992) reach different conclusions using an adverse selection framework. In a rights issue, the wealth transfer from old to new shareholders is lower, the more shares existing shareholders take up. When all shares are expected to be taken up by existing shareholders, there is no expected wealth transfer and the company will employ the cheapest issue method, namely an uninsured rights offering. As the expected take-up falls, firms issue by means of an underwritten rights offer if the certification benefit of an underwriter outweighs underwriting costs. As the take-up falls even further, the underwriter fee in a rights issue may approach the firm-commitment fee of an underwritten offering such that the firm opts for the latter to avoid additional costs associated with the distribution of rights. Bøhren et al. (1997) find supporting evidence for the Eckbo and Masulis-theory for Norway.

As preemption rights are only rarely waived in the UK and as almost all offers are underwritten, the above theories cannot be readily transposed to the UK. Also, the existence of open offers and their announcement reactions cannot be explained by these theories. We investigate the decision in the UK to use a particular issue method, to set the discount and to underwrite in section 6.

3.2 International evidence.

Most empirical research on seasoned equity offerings focuses on the announcement effects of different types of flotation methods. It should be noted in many European countries public issues are not common or do not even exist. Table 1 summarizes the two-day market adjusted returns for different countries. The share price reacts negatively to equity issues in the UK, US, New Zealand, the Netherlands and Sweden. Public issues trigger significantly negative share price reactions whereas private offers of seasoned equity originate mildly positive abnormal returns. Underwriting of rights issues occurs when the expected take-up by current shareholders is low, which emits a bad signal about firm quality. This explains why the announcement reaction to underwritten rights issues is more negative than to non-underwritten rights issues (see US, Norway, New Zealand). This relation is reversed for the UK where only low quality firms are not able to obtain an underwritten issue contract (see section 6.1).

[insert Table 1 about here]

Positive announcement reactions to equity issues are recorded for Finland, Greece, Japan and Korea. The disparity in announcement effects between countries has several causes. First, different types of firms may be listed. For example, Korean firms tend to be more closely held in comparison to e.g. US companies. Second, institutions and the size of capital markets differ across countries. Small capital markets such as Finland, Greece, Korea, New Zealand and Sweden tend to be less liquid and price elasticities of financial assets are smaller. Third, not all types of flotation methods can be used in each country. For instance, in Norway and New Zealand the only available method is the rights issue. In Finland, Greece, Sweden and Switzerland, offers to the public are rare and rights issues are performed by convention. Fourth, other tax and regulatory differences across countries may be responsible for the disparities shown in Table 1. For example, shares purchased through an equity issue in Finland are subject to favorable tax treatment and there are lax financial reporting guidelines regarding firm value reappraisal in Greece. In Switzerland there are no legal restrictions on insider trading so that information asymmetries between management and investors may be relatively short-lived.

4. Sample Selection, Data Sources and Descriptive Statistics.

4.1 Sample Selection.

A sample consisting of all (1463) seasoned equity issues (‘further issues’) was collected for the period 1992 and 1999. The data on these issues were recorded from several data sources: the Perfect Information (PI) database, which contains scanned copies of issue prospectuses, Sequencer

news announcements and Regulatory News Service[6] (RNS) messages in Reuters Business Briefing. To retain an uncontaminated sample of equity issue announcements, we subsequently reduced the number of issues using the following criteria:

- First, issues by financial firms such as banks, pension funds, insurance and investment companies, were excluded as financial reporting, structure and management of these types of firms is very different from industrial companies.
- Second, AIM-quoted companies[7] were excluded because listing and reporting requirements on this exchange differ from those on the Official List of the London Stock Exchange (LSE).
- Third, stock issues that do not raise additional funds (e.g. bonus issues, scrip issues, conversion of warrants or options) or that may generate mixed effects (combined/international issues) were also eliminated from the sample.
- Fourth, issues that were accompanied by major corporate announcements, such as announcements of earnings or named acquisitions, or a change of listing (e.g. from the AIM to the Official List) were excluded as the pure effect of the issue as reflected in the abnormal returns cannot be investigated. A similar method is used in Kalay and Shimrat (1987) for US issues.
- Fifth, a further 162 offerings (mainly placings) are eliminated because lack of data availability on issue characteristics (method, offer price, size of issue, etc for 114 cases), ownership structure (45 cases), accounting data (1 case) and daily share prices (2 cases).

The final uncontaminated sample includes 95 issues, distributed over years and issue methods as shown in Table 2. Due to the creation of a sample of 'clean' announcements, relatively few issues are recorded compared to earlier research on UK share issues but the distributions over issue methods approximately agree.[8] This choice to use an 'uncontaminated' sample selection method may have introduced certain biases, notably towards older and larger companies (as only firms on the Official List were considered) and possibly towards poorly performing companies[9].

[insert Table 2 about here]

[6] The Regulatory News Service is the official news service of the LSE. All quoted companies are required to publish price-sensitive information on the RNS so that it is available to the whole of the market at the same time.

[7] The Alternative Investment Market (AIM) exists since 1995 and is the LSE's public market for small, young and growing companies. It frequently serves as a 'stepping stone' to the Official List. Prior to 1995, the Unlisted Securities Market (USM) fulfilled a similar role. The AIM is managed separately from the LSE's other markets and has its own rules and regulations. For example, there is a Model Code for AIM companies that imposes restrictions, beyond those required by law, on the freedom of directors and employees to deal in their companies' shares in certain circumstances such as the announcement of annual results. AIM companies are young, small and have more uncertain future prospects. Large investors in these companies are therefore expected to be more closely related to the company and to possess more inside information.

[8] For the overlapping sample period 1992-94, Slovin et al. (2000) find 161 rights issues and 57 placings (a ratio of 2.8 rights issues to each placing), whereas our sample has a ratio of 2.5 to 1. Our ratio of the number of rights issues to open offers (2.8 to one) is similar to the one in Armitage (2000) (2.1 to one in 1985-96).

[9] This argument is based on the assumption that many companies that are doing well issue equity to perform a specific acquisition. Since these issues are excluded from the sample, it may become biased towards more poorly performing companies that are in need of working capital or debt-reduction.

Data on ownership structure is collected from the Worldscope database, supplemented by data from prospectuses (PI), Sequencer and the Regulatory News Service, in which all dealings by shareholders owning 3% or more of outstanding shares are announced. Director shareholdings, all of which have to be reported even if they fall below the mandatory disclosure threshold of 3%, are gathered from Sequencer, RNS and prospectuses. Compustat, Datastream, Extel Cards (in Sequencer) and the London Share Price Database (LSPD) were used to collect daily share price and accounting data.

4.2 Descriptive Issue Statistics.

Table 3 reports accounting and issue-specific statistics with a sample breakdown according to issue method. As expected, placings are much smaller than rights issues and open offers due to the restrictions on placing size (see section 2). Only three placings are found larger than 5% of the issuer's outstanding share capital[10], whereas none of the rights issues or open offers were smaller than 5%. Rights issues and open offers raise 30.4% and 25.6% of additional share capital. As most rights issues and open offers in the UK are underwritten –only 4 open offers and 1 rights issue are non-underwritten– Table 3 only reports data for underwritten rights issues and open offers.

[insert Table 3 about here]

Discounts to the market price are small for open offers and placings (on average 3.8% and 2.9%, respectively) in comparison to the discount given on rights issues (on average 16.0%)[11]. This is in line with the restriction that the discount in open offers and placings cannot exceed 10%. The subscription price on non-underwritten issues varies from a premium to the market price of 13.3% to a discount of 58.6%. The two open offers in this sample with discounts over 10% (allowed only for financially distressed firms) are non-underwritten. The single non-underwritten rights issue took place at a deep discount of 58.6%. Table 3 also exhibits that companies performing rights issues are substantially larger than those opting for open offers. In fact, in the largest size quintile in terms of market value, all but one issue are rights issues, whereas the lowest quintile contains an equal number of open offers and rights issues. Firm performance, measured by (industry-adjusted) return on assets (ROA), is not statistically different between underwritten rights issues and open offers. A higher market-to-book (and price-earnings) ratio of open offer firms combined with a lower dividend payout

[10] Surprisingly, Slovin et al. (2000), for a sample of UK equity issues between 1986 and 1994, find an average (median) placing size of 70% (30%) of market value. It seems that open offers are also included in their placing sample. Such shares are only conditionally placed but are subject to a clawback clause.

[11] The discount on underwritten rights issues is similar to the average of 17.0% (median 15.9%) found by Slovin et al. (2000). Armitage (1999) finds an average discount to market price for open offers of 13.0%, which is peculiar considering the limited ability of companies to perform an open offer with a discount over 10%. The median discount of 7.8% is more in line with the median of 4.2% found for all open offers (underwritten and non-underwritten) in this sample. For rights issues, Armitage also finds an average (median) discount of 21.0% (17.6%) comparable to an average discount of our sample rights issues of 17.1% (median 15.8%).

ratio suggests that these firms have more growth opportunities than firms performing rights issues. Table 3 also shows that relatively few open offers are used to reduce leverage. Firms conducting an open offer appear to be more often in need of working capital.

Underwritten rights issues seem to enjoy a larger take-up by current shareholders than underwritten open offers, 77.0% versus 46.7% (see Table 3). Still, the main reason is that rights that are sold in the marketplace by current shareholders and taken up by others are also recorded as 'taken up'. In contrast, open offer entitlements cannot be traded such that all renounced entitlements are considered as not taken up. Of the underwritten issues, 24% of all rights issues and 7% of open offers employ the services of one of the three major UK underwriters for their offering year. The three most frequently contracted underwriters[12] offer their services to 268 out of 1,078 issues (24.9%) over 1992-1999, compared to 19.2% for this sample. In around 80% of all underwritten issues, the sponsor (or arranger) to the issue is also the lead underwriter.

Of the 5 non-underwritten issues, 4 are in the smallest size quintile. Furthermore, firms performing non-underwritten offerings have a substantially lower industry-adjusted ROA compared to underwritten issues. Market-to-book and P/E ratios of firms with non-underwritten issues average 1.68 and –28.37, respectively (with medians 1.49 and –30.93). Moreover, they have high leverage with an average of 234% (145% median) in book value terms and 177% (149% median) in market values. This suggests that companies performing non-underwritten offerings are small, poorly performing and possibly financially distressed firms without good future prospects. The one non-underwritten rights issue in the sample had a take-up of 81.9% whereas the four non-underwritten open offers experienced a 37.4% average take-up (median 21.1%).

4.3 Measurement of Performance and Financial Distress.

As seasoned equity issues may be important in the financial restructuring of financial distressed firms, we collected information on bankruptcy, liquidations and listing suspensions of the issuer from the LSPD. In addition, firm performance (ROA excluding extraordinary items) and leverage (in book value), is compared to the ROA and leverage deciles of the constituents of the FTSE All-Share Index for the year of issue (see Table 4). We consider the following firms to be in financial distress: the issuer (i) is in the lowest ROA decile, (ii) is in the highest leverage decile, (iii) has an interest cover (EBITDA divided by total interest expense) below two[13], (iv) had two or more subsequent dividend cuts within a period of up to two years before and after the offering,[14] (v) had a listing suspension within a time frame of two years around the offering period, (vi) was taken over by another party within two years after the offering period due to poor performance, or (vii) entered

[12] Underwriter names were collected from Thomson's SDC Platinum database and were ranked according to the number of rights issues and open offers underwritten. Since SDC Platinum is not complete prior to 1994, the Extel Financial 'Professional Advisers to New Issues' was used for 1992 and 1993.
[13] All but two sample firms with an interest cover below two comply to the ROA and leverage distress measures.
[14] As noted by Marsh (1992), UK companies are reluctant to cut dividends as the market tends to interpret such cuts as powerful signals of bad news.

administrative receivership or was liquidated within two years after the offering period. Table 4 confirms that the reason why some rights issues and open offers are not underwritten is financial distress. This confirms that the underwriting process fulfills a certification role.

[insert Table 4 about here]

4.4 Ownership Structure.

To gain some insight into the ownership structure of issuers and changes therein resulting from the equity issue, we report aggregate ownership concentration by type of large shareholder in Table 5. The Herfindahl index of the 5 largest shareholders shows that –prior to the issue- the share concentration of firms with underwritten open offers is higher than that of firms with rights issues. Furthermore, open offers lead to a considerably higher fall in ownership concentration after the issue as large current shareholders take up less of their entitlements in open offers than in rights issues. As expected, placings do not have a large impact on ownership concentration.

[insert Table 5 about here]

The aggregate holdings of institutions owning at least 3% is somewhat higher in firms with underwritten open offers. Institutions usually take up their entitlements and some purchase those new shares not taken up by others, resulting in a zero median (and positive average) change in institutional holdings. In companies performing non-underwritten offers, institutions own lower average stakes 15.1% compared to the overall average of 26.2%. Insider ownership (the aggregate of holdings of CEO, chairman, executive and non-executive directors) is higher for underwritten open offers. The fact that all six underwritten issues in which insiders do not own any shares are rights issues, suggests that the impact of issue method on directors' personal wealth may play an important role in the choice of issue method (see section 6.2). Open offers lead to stronger decreases in the aggregate share concentration of directors whereas in rights issues directors exercise more of their entitlements. In some 30% of issues, insiders pre-renounce (part of) their entitlements, resulting in a decline in their ownership levels.[15] Directors hardly ever participate in placings and consequently their stake in the company is slightly diluted after a placing. The sum of large shareholdings by corporations and individuals or families (not related to a director) is lower for companies with open offers. Individuals possess shares in only 22% of all issues (11% of open offers and 18% of rights issues). In those rights issues in which insiders own shares their stake declines by 14.1% whereas the average decline for open offers with insider stakes is only 5.0%.

To summarize section 4, placings are employed for small share issues such that only modest effects on ownership concentration and structure are observed. Issuers of open offers are smaller on average but have better growth opportunities as reflected in higher market-to-book values, price-

[15] In non-underwritten issues, directors' ownership levels decline substantially more than in underwritten offerings: an average decline of –13.1% (median –8.7%) for the CEO's stake, -9.4% (0%) for the chairman, and -28.0% (-32.4%) for other executive directors.

earnings ratios, lower dividend payout ratios and the fact that the proceeds of a seasoned equity issue are used more frequently for investment purposes rather than for debt reduction. The financial performance of firms with open offers does not differ from firms performing rights issues, but the former are more frequently in need of working capital. Firms employing rights issues more frequently need leverage reduction. Furthermore, issuers of underwritten open offers are usually more closely-held than companies performing underwritten rights issues and have higher institutional and insider ownership. Ownership concentration and insider holdings decline more strongly in open offers, but share stakes held by individuals and families decline less. Non-underwritten issues seem to be performed at high discounts by ill-performing, highly leveraged companies with low market value.

5. Methodology and Announcement Reactions

This section discusses the market's reaction to the announcement of different types of seasoned equity offerings. To calculate abnormal returns (ARs), the standard market model is applied to continuously compounded daily data. The trade-to-trade method as in Dimson (1979) is used to correct for non-synchronous trading. To control for possible heteroscedasticity, a weighting scheme is introduced in which all parameters are divided by the square root of the time Δt between trades, so that the variance of the residuals from the new model will be independent of Δt. This gives the following equation:

$$\frac{Ln(1+R_{it})}{\sqrt{\Delta t}} = \alpha_i \cdot \sqrt{\Delta t} + \beta_i \cdot \frac{Ln(1+R_{mt})}{\sqrt{\Delta t}} + \varepsilon_{it}$$

where R_{it} and R_{mt} are net returns of the stock i and the market at time t, α_i is interpreted as a constant daily return on stock i and β_i is the sensitivity of stock returns to general returns in the market. The market index is the FTSE All-Share index, a market-value weighted arithmetic index representing virtually the whole market capitalization of the LSE[16]. The estimation period is set from 180 to 31 trading days before the announcement of the issue (day 0). The event window ranges from trading days –20 to +10.

[insert Table 6 about here]

ARs of all issues are reported by sub-sample in Table 6. Underwritten rights issuers experience a significantly negative announcement AR of –1.9%. The two-day cumulative abnormal return (CAR) amounts to a significant –2.3%, in line with the results of Slovin et al. (2000) who find –2.6%. Armitage (1999) reports a negative return of –3.0% on a sample of all rights issues which is close to our result of –2.9% for the merged sample of underwritten and non-underwritten rights issues.

[16] Until 1992, the FTSE All-Share Index consisted of about 650 stocks representing over 90% of the total market value of the stocks traded on the LSE. From January 4, 1993 coverage was extended to include around 800 companies representing 98% of total market value. By 1995 the number of constituents had risen to about 920 covering 98.2% of market capitalization.

For underwritten open offers the announcement abnormal return is significantly positive at 2.8%. Furthermore, the CAR over days –20 to –2 is also significant at the 5% level. This suggests that there is anticipation or information leakage to the market prior to an equity offering. There are no previous studies that examine the share price reaction to underwritten open offers in particular, but Armitage (1999) reports a significant two-day announcement return of 1.03% on a sample of all open offers. This result compares to an insignificant return of –0.30% for all open offers (underwritten and non-underwritten) in our sample.[17]

Placings experience a positive, yet statistically insignificant, two-day CAR of +1.0%, in line with the +1.2% in Slovin et al. (2000). Even though there do not seem to be any firmly significant ARs, the (significant) CAR over the whole event period is 9.96% due to the stock price run-up. One possible explanation for the lack of a significant announcement reaction is the small placing size, the fact that the proceeds are not crucial to the company and that such an issue is private in character. As the placing does not evoke a significant market reaction and share price continues to rise, the market does not seem to infer that the company is overvalued. Management has considerable flexibility to time the issue (especially compared to rights issues and open offers) as 71% (significant at the 1% level) is performed after a positive share price run-up over trading days –20 to –2.

The theories explaining the difference in announcement reactions across issue methods in the US (see section 3) do not explain the difference in share price reactions to UK offering methods. The adverse selection model of Eckbo and Masulis (1992) predicts that undervalued firms will have the highest participation rate, will choose uninsured rights issues and will experience a positive price reaction. In addition, (low quality) firms with an anticipated low participation rate will chose a firm commitment contract, which in itself signals low quality and triggers negative price reactions. Both predictions are not sustained for the UK: non-underwritten offers are mostly performed by financially distressed firms and hence induce a large negative price reaction. A US firm commitment offer, which comes closest to the open offers, does not trigger a negative price reaction but a significantly positive one in the UK. The signaling model of Heinkel and Schwartz (1986) assumes that the highest-quality firms undertake an underwritten rights issue, medium quality firms opt for an uninsured rights offer and the lowest quality firms perform a firm commitment offer. Judging from the average negative announcement reaction to rights issues and the positive one to open offers, the signaling model's predictions are not sustained by the UK findings. We analyse the reasons for the negative reactions to a rights issue and the positive ones to open offers further in section 7.

[17] Most notably, one firm experienced a –41.4% AR on announcement of its non-underwritten open offer, while the single non-underwritten rights issue suffered a –24.8% 'impact day' return. The market thus received these highly discounted issues (at 33% and 59% respectively) by severely distressed companies very badly. Two-day and three-day ARs on non-underwritten rights issues and open offers are –13.0% and –9.6%, on average. It appears that most non-underwritten equity issues experience negative price reactions, but there is a large cross-sectional variance in ARs. For some poorly performing firms, the announcement of an equity issue may either signal a refinancing effort and possible salvation for the company or merely a wealth transfer from shareholders to bondholders (Galai and Masulis, 1976). Wealth transfers from shareholders to bondholders are larger in more distressed firms.

6. The Choice of Issue Method.

When a UK listed company intends to collect a large amount of equity capital, a placing is ruled out as shareholders' pre-emption rights need to be honored. Issuers' choice is thus limited to a rights issue or an open offer. In this section, we study the choice of issue method, the setting of the subscription price (at a discount to the market price) as well as whether or not the issue should be underwritten. Special attention is paid to situations of financial distress, strong growth opportunities and insider ownership concentration of the issuer.

6.1 To Underwrite or Not to Underwrite: the Question.

Once a decision to procure new funds from the stock market has been made, the company appoints an 'arranger' or 'sponsor', and a broker. Usually the company selects the merchant bank and broker with which it has a long-standing relation. As sponsor, the merchant bank receives an advisory fee for its advice on the amount that can be raised, the timing and structure of the issue, and for its help with the organization of the issue. If the issue is to be underwritten, it will usually act as lead underwriter. The broker advises on how to market the issue to the investment community including probing institutions' interest to act as sub-underwriters. The underwriting agreement is signed between the issuing company and the lead underwriter on the evening before public announcement day (also known as the 'impact day') of the offering. In the event that the offer (be it a rights issue or open offer) is under-subscribed, the underwriter is required to purchase all unsold shares at the issue price. The lead underwriter limits his risk by inviting sub-underwriters (through the broker) to purchase shares from him in case of under-subscription. Such agreements are typically signed the day following impact day by the financial institutions of the City (insurance companies, pension funds and unit trusts).

According to the LSE's listing rules, price-sensitive information is to be released to all parties in the market simultaneously. This means that the institutional investment community should not *formally* know about the issue until the day of announcement. As a consequence, the lead underwriter and broker generally have to arrange all of the sub-underwriting more or less simultaneously on impact day. As there may be as many as 200-300 sub-underwriters for an issue, it does not seem uncommon for major institutions to be contacted beforehand. There is even some evidence that some of the sub-underwriting is informally arranged shortly before announcement, especially for difficult issues or for those issues by not so well-known companies (Director-General of Fair Trading - DGFT 1995, 1996). Hence, it seems likely that any substantial price movement prior to announcement (illustrated in section 5) results from information leakage during the sub-underwriting process.

It is important to note that the *underwriter* in the UK takes on more risk than its US counterpart. Whereas a US underwriter in a firm commitment offering can adjust the issue price during the offer period (Parsons and Raviv 1985), a UK underwriter commits to the issue price the day before announcement without being able to change the price in case of adverse share price movements

during the offer period. Negotiating the subscription price (at a sufficiently large discount to the current share price) is therefore very important, as it determines the risk that the (sub)underwriters assume. The (sub-)underwriter risk consists of: (i) company-specific risk of adverse share price movements, (ii) general market risk that all shares prices may dive and (iii) sensitivity of the firm's share price to market movements. It is clear that the lead underwriter limits its own risk if it can limit sub-underwriters' risk. The importance of setting an appropriate subscription price is amplified by the fact that the overall fee charged for underwriting is by convention fixed at 2% of the gross proceeds of the issue. Typically, the lead underwriter retains 0.5%, the broker receives 0.25% and 1.25% goes to the sub-underwriters.[18]

The incentives of the *issuing company* are different: it wants to conduct the issue with the least possible risk of failure but at the lowest possible cost. As a general rule, companies are therefore interested in as small a discount as possible, given a good probability of success. It may be more cost-efficient for the issuer to avoid the cost of underwriting and conduct an issue at a deeper discount. If successful, the gross proceeds to the company could be similar (or higher) as with an underwritten issue, as the cost of underwriting[19] are saved. In practice, however, non-underwritten issues rarely occur, for both psychological and practical reasons (MMC 1999): (i) no matter how deeply discounted, the proceeds are never certain; (ii) the market may interpret a deep discount as a signal of poor corporate prospects, (iii) conflicts of interest may arise for arrangers who act as lead underwriters. For non-underwritten rights issues there is the additional disadvantage of a deep discount: inefficiencies in the market for rights lead to wealth losses for shareholders not taking up their part of the new shares as they are unable to sell their rights for their full (theoretical) value and may lead to a capital gains tax charge on the premium of the rights sold. Both these wealth effects are, ceteris paribus, larger the higher the discount.[20] There are only five firms with non-underwritten rights issues in our sample, three of which are severely distressed small companies.[21] Most likely, they were unable to find an

[18] Since October 1996 sub-underwriting for many larger issues has been either partially or (occasionally) wholly tendered, leading to some reduction in sub-underwriting fees. However, these tenders have attracted few bids from organizations other than the traditional sub-underwriters and standard fees were still charged by the lead underwriter and broker. A report from the Monopolies and Mergers Commission in February 1999 on the underwriting business states that without pressure from the Commission and the Director General of Fair Trade, tendering for underwriting would probably remain "cautious and limited".

[19] The cost of underwritten rights issues in the UK is about one-third less than in the US (Armitage 2000). Hence, the savings obtained by not underwriting an equity issue are more limited in the UK.

[20] A higher discount implies higher proceeds for selling rights, which increase the possibility of passing the taxation threshold of £ 3,000 or of 5%. Furthermore, higher proceeds also lead to a higher chargeable gain (see section 6.2), but the percentage of proceeds that is taxed remains constant.

[21] African Lakes Corporation and Regent Corporation had their listings suspended twice in the 18 months prior to the issue and the latter went into administrative receivership. Both companies performed non-underwritten open offers at discounts of more than 10% which is only allowed in case of severe financial difficulties, and they had take-ups by current shareholders of only 15% and 27%. The offering prospectus of African Lakes Corp. stated that "*In the opinion of the directors, should a capital raising not be implemented, the Group would face serious financial difficulties. The Group is currently in default under a number of its loan agreements. In the absence of a capital raising, the Group would continue to be heavily indebted with no real prospect of being able to reduce its debt other than through the sale of its core assets.*" The chairman of the board of Regent Corp. stated that the firm was "*confronted with a serious shortage in liquidity" and that "any alternative action would require the disposal of assets at 'fire-sale' prices or a winding-down of virtually all activities*". Caverdale saw a

underwriter and could negotiate at most a 'best efforts' contract with an investment bank. Underwriters may have perceived the risk of not getting the issue sub-underwritten at any discount as too high. Moreover, lead underwriters build up a reputation from offering good issues to their sub-underwriters and in the small world of the underwriting business, no reputation means no business. Thus, it is clear that non-underwritten share issues by UK industrial companies are usually conducted by small, severely financially distressed companies that are not able to arrange underwriting.

6.2 Rights Issue versus Open Offer.

UK firms intending to issue seasoned equity have to decide upon an issue method: (underwritten) rights issue versus (underwritten) open offer. We investigate this choice from the perspective of the current shareholders in cases in which (a) all newly issued shares are taken up by the current shareholders and (b) some shareholders decide not to subscribe, and from the perspective of external investors interested in buying part of the seasoned equity.

As long as shareholders take up all their entitlements to new shares, the choice between a rights issue or an open offer is trivial as shareholders maintain their proportional share stake with both issue methods and pay the subscription price. Moreover, Armitage (2000) shows that there is no difference between the methods in terms of direct issue costs after controlling for issue size and the percentage underwritten.

When some current shareholders decide not to take up newly issued shares, the choice between the two flotation methods is based on the trade-off between the premium of the pre-emption rights and the subscription price discount (see section 4.2). For those not taking up their entitlements, an open offer may be attractive as the new shares can be placed prior to the offer period at a low discount resulting in a low dilution in their present holdings. Alternatively, the company can perform a rights issue at a larger discount, but shareholders receive a premium when selling their rights. The indifference between the two issue methods holds when the market for rights is liquid or, in case this market is illiquid, there is little difference in the discount between the two issue methods. However, even if these conditions are fulfilled in practice, taxation and transaction costs may render a rights issue less attractive. Let us consider these costs when current shareholders do not exercise their rights: the rights can be (i) renounced and placed firm with institutions before dealings in provisional allotment letters start, (ii) sold in the market, or (iii) not taken up and the shares are sold to sub-underwriters (or to their clients) at the offer price at the end of the three-week offer period.

In the first case (the rights are 'placed firm'), the actual proceeds to shareholders are smaller than one would expect due to capital gains tax liabilities. A rights issue is essentially a capital reorganization and does not create a tax liability in itself, but the premium in a sale of rights is liable to

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recent change of strategy take a turn for the worse, changed its name to Actionleisure and changed broker to the issue only 10 days before announcement, a sign of lack of confidence in the success of the issue. The announcement of the need of refinancing of these companies triggered strongly negative ARs of–22%.

capital gains tax for individual investors or corporation tax for corporate investors. Tax is due on that part of premium which represents an increase in the share value since the date at which the shares were acquired. To clarify, consider a simple numerical example. Imagine that a firm with 100 million shares outstanding performs a 1-for-2 rights issue at 108p per share, a discount of 10% to the current market price of 120p. The value of one right then equals 4p. An individual investor owning 1% of the firm (1 million shares) decides to sell his entitlements for a total amount of £40,000. If the investor bought the 1m shares at 100p, the (unrealized) capital gain is £ 200,000. At the sale of the rights, the capital gain is split: part of it remains unrealized in the share value whereas the other part is realized through the proceeds of the rights sale. On this realized gain taxes are paid. In this example, as the ex-rights price is 116p and the rights are worth 4p, the £ 200,000 capital gain is split in £ 160,000 (share value) and £ 40,000 (proceeds of rights). The chargeable gain is computed as the proceeds to the sale of the rights minus the share of base cost allocated to these rights and transaction costs, multiplied by a taper[22]. The base cost refers to the original purchase price of the shares. The proportion allocated to the rights is the ratio of the value of the rights to the share capital and the realized gains after issue:

$$\text{Share of Base Cost} = \text{Base Cost} \cdot \frac{\text{Proceeds of Sale}}{\text{Current Value of Shares} + \text{Proceeds of Sale}}$$

(the denominator is equal to the value of the share capital before the equity issue).

In our numerical example, the share of base cost equals 1m x [40k / (1.16m + 40k)] = £ 33,333. The chargeable gain is thus 40,000-33,333 = £ 6,667. [23] At a capital gains tax rate of e.g. 25%, this tax amounts to £ 1,667 or 4.2%. In summary,

Original purchase price per share (pence):	100
Current value of a shares before issue (pence):	120
Subscription price (pence):	108
Number of new shares for 1 old share:	0.5
Number of shares owned:	1,000,000
Ex-rights price (pence):	116
Theoretical price of 1 right (pence):	4
Proceeds of sale (£):	40,000
Share of base cost allocated (£):	- 33,333
Chargeable gain (£):	= 6,667
(in %):	16.67%
Tax (£, suppose 25% rate):	1,667
(in %):	4.17 %

[22] The taper reduces chargeable gains by correcting for the length of time that an asset has been held. For non-business assets, which shareholdings usually are, only 60% of a capital gain is chargeable after a holding period of ten years. Where shares have been acquired before April 1998, indexation is applicable for periods up to that month. For simplicity, taper relief and indexation is ignored in this example.

[23] If the proceeds to the sale are smaller than 3,000 pounds or 5% of the value of the underlying shares at the time of issue (whichever is greater), the chargeable gain may be shifted to the year in which the shares underlying the rights are sold.

Ceteris paribus, a higher discount and a larger proportion of entitlements sold lead to a higher chargeable gain. In *percentage* terms, the only factor influencing the chargeable gain is the difference between original purchase cost and current value of the shares (i.e. the total unrealized capital gain).

In the second case (when rights are sold in the market), the burden of the tax liability is exacerbated by transaction costs. A Credit Suisse First Boston study appended to MMC (1999) concludes that the sales price of rights is frequently substantially below the theoretical price, especially for very illiquid shares or in the presence of a large supply of entitlements.

In the third case (the rights are not sold in the market and expire valueless), the broker attempts to place the rump (unsold shares) at a premium at the end of the offer period. This may lead to a gain, but is subject to the same transaction costs and taxes as a sale of rights. If no premium can be obtained, the shares are placed with sub-underwriters at the subscription price and shareholders receive no compensation.

For non-shareholders interested in purchasing shares in a seasoned equity issue, an open offer may be more attractive because there is a higher probability that shares can be purchased at the subscription price. A rights issue does not facilitate the marketing of shares to non-shareholders as the issuing company has no stock to offer directly (except through the pre-placement of entitlements of major shareholders subject to the rules mentioned above). Thus, non-shareholders either have to purchase rights from existing shareholders in the market (in which case they acquire shares at virtually the market price), buy the shares not taken up at the end of the offer period at a premium, or act as sub-underwriter to the issue (for which they have to be on the broker's institutional list). In contrast, an *open* offer is more *open* to new outside holders. The shares are offered to prospective new shareholders at the subscription price at the time of announcement of the offer (together with a fee similar to that given to sub-underwriters in a rights issue). At the end of the offer period, these new shareholders can hold on to that part of the issue that is not 'clawed back' by the current shareholders. Thus, open offers are more likely to be chosen if there is a large number of long-term external investors interested in acquiring seasoned equity. This also implies that performance and growth opportunities of the issuer may be important determinants of the issue method and the discount on the subscription price.

To conclude, we expect that when many current shareholders prefer not to subscribe to the equity offering and when there is strong demand by institutions as longer-term investors, an open offer would be preferred as the tax liability and transaction costs which arise from selling the rights can be avoided. Also, if a rights issue would be performed, the pressure on the market for rights would be very high. In contrast, when management has less information about the interest of current shareholders in the issue, a rights issue, which offers most flexibility to current shareholders, may be preferred provided there is a liquid market for rights. If the market in rights is liquid and there is strong demand, the rights premium will offset the larger dilution in share value in a rights issue compared to an open offer.

6.3 The Discount-setting Process: the Underwriters' Perspective.

(Sub)underwriters face more uncertainty in a rights issue than in an open offer as in the latter it is easier to get an estimate of the take-up by current shareholders. As the underwriters in a rights issue are mostly fulfilling a certifying role, they are also more sensitive to the riskiness of the issue and the market. Therefore, in rights issues we expect a) larger discounts and b) a positive relation between discounts and risk factors. Conflicts of interest may also influence the discount because the merchant bank appointed as the arranger (sponsor) is frequently the lead underwriter. In previous section, we argued that when corporate growth opportunities and performance are high, a large number of long-term external investors may be attracted such that open offers are more likely to be chosen and the discount is smaller.

In Table 7, the factors proxying for risk, performance, growth and type of underwriter are regressed on the subscription price discount. Risk to the underwriters consists of three elements: market risk (short-term market sentiment and volatility), company-specific risk (short-term issuer sentiment and issuer volatility) and the sensitivity of the company's share price to general market movements (issuer's beta). In addition, the degree of exposure of the underwriter, measured by the relative size of the issue (gross proceeds divided by market capitalization) minus the share of the issue pre-committed to, may also have an important impact on the discount. According to the Director-General of Fair Trading (1995, p.15) and MMC (1999, 5.71) there is no consensus in the market as to what risk measure is to be used by underwriters to evaluate the risk they assume. Some sub-underwriters seem to think it is company-specific risk that predominates whereas others believe that general market risk is more relevant.

Model 1 shows that the risk factors are not related to the discount of open offers. Still, market volatility is significantly positively related to the subscription price discount of rights issues: larger discounts are negotiated when market uncertainty is high. The issuer's total risk is negatively correlated to the rights' discount, but beta is not significant. Recent market and issuer stock performance (market and issuer sentiment) are not related to the discount setting process either. Yet, when underwriter's exposure, measured by the maximum equity stake that the (sub)underwriters have to purchase in a failed issue, is high, larger discounts in rights issues are negotiated. Thus, it seems that more volatile market returns and larger issue sizes relative to company size present higher risks to (sub)underwriters in rights issues, and therefore larger discounts are demanded.[24]

[insert Table 7 about here]

We conjectured in section 6.2 that the choice of an open offer (and hence its discount) may depend on the issuers' performance and growth perspectives. Model 2 reveals that industry-adjusted

[24] The regressions of table 7 do not suffer from multicollinearity: the Pearson correlation coefficients are not statistically significant.

performance does not influence the discount in open offers (nor in rights issues). Still, the lower the growth opportunities[25], measured by the book-to-market ratio, the smaller the discount the underwriters demand in open offers. Thus, it seems that high market-to-book ratios embed more uncertainty which is in turn reflected in higher discounts (Rau and Vermaelen 1998). The relation between growth and discount is not sustained for rights issues.

Model 3 combines the risk, growth and performance variables. The model confirms that market risk and underwriter exposure lead to larger discounts in rights issues and that risk does not seem to have an impact on the open offer discount. The relation between growth opportunities and open offer discount is not sustained, probably as the number of open offers is small. The model also analyses the impact of the type of underwriter and of an extraordinary general meeting (EGM). In case an EGM is needed to approve a rights issue, it has to be held prior to any provisional allotment letters are sent out. This extends the issue period by two to three weeks, depending on whether ordinary or special resolutions need to be passed. Consequently, the risk of adverse stock price movements to the underwriter may increase, such that a higher discount is solicited by the (sub)underwriters.[26] As the parameter coefficient of EGM is not statistically significant, it appears that no extra discount is deemed necessary to cover this additional risk. Judging from the positive and significant sign of '*Sponsor=underwriter'*, conflicts of interest of the sponsor/underwriter of the issue may play a role. When a sponsor also acts as lead underwriter, that sponsor/underwriter seems to ensure that a higher discount is set so as to reduce his risk in case the offer fails. Moreover, the top three underwriters in the UK seem to be able to negotiate a higher discount with the company as the variable 'Lead underwriter=major' is significantly positive. A different balance of power, with top underwriters having more bargaining power in discount negotiations, may explain this result. The robustness of these results was verified by estimating other models with variables such as ownership structure, company and issue size, the percentage pre-renunciations and the use of proceeds. The results reported above remain valid. In addition, changing the time period over which volatilities and investor sentiment are measured and substituting a dummy variable capturing a state of financial distress for the relative ROA did not alter any results.

We conclude that the discount in rights issues depends on risk factors (mainly market volatility and issue exposure) and that there is some (weak) evidence that the discount in open offers is related to growth opportunities. Finally, the type of underwriter also plays an important role in fixing the discount. Whereas this section has analyzed the discount setting process from an underwriter perspective, we next investigate the choice of issue method from the current shareholders' viewpoint.

[25] The book-to-market ratio was set to zero in the four cases in which book value of equity was negative.

[26] This argument holds only for rights issues. In a rights issue the new shares are issued in nil-paid form as provisional allotment letters at the start of the offer period, such that the authorization to issue has to be obtained before the letters are sent out. In an open offer, the EGM can be held right after the offer period because the new shares are not issued until after the close of the offer.

6.4 The Choice of Issue Method.

Let us investigate the choice of issue method by type of (potential) decision maker: the directors-owners, the directors who are not current shareholders, the large outsider shareholders (institutions, individuals and corporations), and the sponsor/underwriter. First, the director-owners owning a large equity stake in the firm may be wealth-constrained such that exercising all their entitlements may be beyond their financial capacity. Thus, we expect that directors with small share stakes take up the seasoned equity in a small issue, but we expect a negative relation when directors own large shareholdings in larger equity issues. We find a positive correlation between directors' required investment (their percentage stake multiplied by the gross proceeds to the issue) and the size of pre-renunciations (significant at the 1% level; not shown). This implies that the larger the required seasoned equity investment, the larger the renounced stake. When the renounced shares represent a large fraction of the issue, a rights issue becomes problematic as the pressure of a large supply of rights on the market depresses the premium (MMC, 1999) such that an open offer may be preferable.

Second, when directors do not own any shares, the 'default' rights issue may be chosen. Furthermore, a rights issue may be preferred for reasons of control retention as in open offers large blocks more likely arise. Diffuse ownership allows executive directors to retain more managerial discretion. We find that in all six issues in which directors did not own any shares, rights issues were performed.

The third group of potential decision makers are the large outside shareholders. Institutional shareholders own (cumulatively) the largest percentage of equity in the average company. While they are less capital-constrained than individual shareholders, institutions' decision to purchase seasoned equity may be influenced by considerations of portfolio rebalancing. When institutions do not wish to take up their entitlements, they may prefer to sell them directly to other institutions at a premium via an open offer. Other types of large shareholders may be indifferent regarding issue method provided the market for rights is liquid. When this liquidity condition is fulfilled, there is a trade-off between the premium of the rights issue and the lower discount in the open offer. To proxy for the liquidity of the market for nil-paid rights, we employ the finding of a Credit Suisse First Boston study appended to MMC (1999) which states that the efficiency of the market for rights is significantly influenced by the size and the weight of the issue, the liquidity of the existing company's shares and the composition of the share register. Issue size is captured by the logarithm of the gross proceeds (*Issue size*) and the weight is the relative size measured by dividing the gross proceeds by the company's market capitalization (*Exposure*[27]). Larger issues, both in absolute and relative terms, are ceteris paribus expected to lead to a more liquid rights market. The same argument is valid for the liquidity of existing ordinary shares, proxied by trading velocity - the average number of shares traded in the last three months divided by the number of shares outstanding (*Trading velocity*). Thus, larger liquidity is expected to influence the preference for the rights method positively.

[27] Underwriter exposure is the relative size of the issue minus the pre-committed share of the issue.

Finally, we also analyse whether the choice of method is influenced by the fact that a sponsor may act as lead underwriter. If this is the case, we expect a preference for rights issues as the lead underwriter can have a larger impact on the discount in a rights issue than in an open offer (see section 6.3). In summary, the conditions likely to lead to an open offer are: (i) a significant required investment by directors; (ii) a high level of institutional ownership; (iii) an illiquid market for rights (proxied by *trading velocity*) (iv) high issue riskiness (proxied by *market volatiliy*, see section 6.3); (v) low underwriter risk (*exposure*), (vi) the sponsor is also lead underwriter, and (vii) good future prospects of the company (*book-to-market*, see section 6.3).

[Insert Table 8 about here]

The probability that a rights issue is chosen is estimated in Table 8.[28] When the required investment in seasoned equity by directors is small, resulting from limited directors' shareholdings (model 1) or from a small interaction of directors' ownership and issue size (model 2), a rights issue is preferred. This probability is substantially reduced when the required investment increases (negative squared terms) as in this case, an open offer is preferred. Further analysis reveals that there is no significant difference in coefficients for executive and non-executive directors (not shown). We find little evidence for the hypothesis that large institutional ownership increases the probability of an open offer (not shown). Neither control by other outsiders nor total ownership concentration influences the choice of issue method. We do not find any evidence that underwriter exposure or trading velocity (proxying for the depth of the rights' market) are determinants of the issue method. However, as predicted in the MCC study (1995), high market volatility increases the probability to opt for an open offer. Model 1 shows that good corporate growth perspectives make a firm opt for an open offer (although this relation is not statistically signficant). Expectedly, we find in model 3 that low growth opportunities, especially when combined with concentrated ownership held by directors or institutions favour the choice of rights as issue method. Neither the fact that the the sponsor or arranger is also the lead underwriter nor the fact that the lead underwriter is one one of the main UK underwriters is related to issue method choice (not shown).

7. Cross-sectional Analysis of Announcement Reactions.

In this section, we analyze the determinants of the stock market reaction, measured by the two-day cumulative abnormal returns at the announcement of a seasoned equity offering. In a first set of regressions[29], we focus on the impact of ownership concentration on the share price reaction. A reduction in ownership concentration held by directors is greeted positively by the market, reflecting a reduction of potential insider entrenchment (model 1a,b of Table 9). Further detailed analysis (not

[28] Outliers are adjusted by setting all values in the top (bottom) decile equal to the value at the 90th (10th) percentile.

[29] Due to the small sample size, we focus on specific groups of variables separately and subsequently include them in a global model.

shown) reveals that at high levels of insider ownership an increase in managerial stakes is perceived as a significantly negative signal. Model 1b also shows that the CARs are positive and significant when ownership levels are high and when there is a reduction of ownership concentration as a consequence of the equity issue. It seems that the negative aspects of a reduction in shareholder monitoring is more than offset by the advantage of increased liquidity (Kothare 1997). Trading velocity is twice as large in firms in the lowest quintile of ownership concentration compared to the highest quintile. The findings on total ownership concentration are in line with those of Short and Keasey (1999) who report a quadratic relation between the size of blockholders and the amount of monitoring and control exerted by them. At low levels of ownership concentration they report a positive control effect that reverses at high levels as strong ownership concentration by both insiders and outsiders may lead to excessive private benefits of control at the expense of minority shareholders (Johnson et al., 2000). Apart from the effects of director and total ownership, there is little evidence of a relation between announcement reaction to an equity offering and the ownership structure and changes therein.[30]

[insert Table 9 about here]

In model 2a of table 9, we find that the market reacts positively to equity issues of which the proceeds will be used for debt reduction. The positive reaction to the debt reduction is contrary to the capital structure pecking order predictions of Myers and Majluf (1984). Ross (1977) and Heinkel (1982) also contend that a reduction in leverage signals lower firm value. Still the positive announcement reaction may be induced by the UK tax system. In contrast to a 'classical' tax system as found in the US, an imputation tax system is employed in the UK. Howard and Brown (1992) show that in cases where investors are subject to marginal income tax rates greater than the corporate tax rate, the imputation system can be biased against debt. For this reason, a reduction in leverage is not necessarily a bad signal to some types of shareholders. Even in the wake of financial distress (model 2b), this positive market reaction to debt reduction remains significant because a rights issue may be related to the refinancing (and hence survival) of ailing firms (Franks et al. 2001). Galai and Masulis (1976) argue that an equity issue decreases bankruptcy risk because it lowers leverage. When the proceeds are destined for future (usually unnamed) acquisitions, the market reaction is positive, but not when the firm is in financial distress (model 2b).

A seasoned equity issue may constitute a wealth transfer from the shareholders to the bondholders. We calculate the potential wealth transfer for every equity issue (see appendix) and estimate whether or not the market reaction reacts negatively to the potential wealth transfer. The sample of non-distressed companies experiences an average (median) wealth transfer over gross issue proceeds of 29.9% (1.2%) while distressed companies suffer from a larger average (median) transfer of 47.4% (26.6%). In the lowest leverage quintile the average (median) wealth transfer equals 8.3% (-

[30] We also do not find any relation between ownership and CARs for rights issues and open offers separately (not shown).

0.2%) compared to 85.7% (76.4%) in the highest quintile, which is significant at the 1% level in both parametric and non-parametric tests and supports the prediction by Franks and Torous (1989) that wealth transfers are larger in financially distressed firms[31]. Furthermore, the wealth transfer is higher in rights issues (mean transfer of 48.9% with median of 33.5%) than in open offers (mean of 16.9% with median of 0.6%). This partially results from the fact that companies performing rights issues have higher average leverage. The fact that the wealth transfer from shareholders to bondholders in an equity issue is positively related to the announcement reaction of the issue (model 3a,b) is at first sight puzzling. Still, it should be noted that only the current shareholders suffer from the wealth transfer and not the new shareholders purchasing new equity. The positive effect of the wealth transfer remains even though we control for financial distress and relative performance (models 3a,b). When firms are performing poorly (measured by negative relative ROA), the market reacts positive to the announcement of an equity issue, because the new funds may be used to restructure the firm (model 3b). Still, this positive effect disappears for severely financially distressed firms. Models 3a,b corroborate the findings by Armitage (1999) and Slovin et al. (2000): the market reacts negatively to deeply discounted rights issues and open offers. Although the discount is substantially larger in rights issues (see above), the market reaction does not differ across issue methods.

As conjectured, the market seems to approve that growth firms (low book-to-market) increase their equity capital base (model 4). The positive announcement reaction is stronger for larger firms provided they are not in financial distress.

We further examine whether the above findings regarding ownership, the proceeds of the issue, wealth transfer and discount, and growth remain valid in a global model. While taking care to avoid multicollinarity, we estimate models 5a and b. The results confirm that there is little evidence of the impact of ownership structure on the CARs. Large outside ownership (held by individuals and corporations) is negatively related to the announcement returns. This negative relation is weakened when outsider ownership concentration is reduced as a consequence of the equity issue. Thus, it seems that the reduction of potential monitoring of management is more than compensated by increased share liquidity. We also find strong evidence that the market reaction is to a large extent influenced by the announcement of how the proceeds of the seasoned equity offering will be employed. If the firm indicates that the proceeds are to be used for debt reduction or (unnamed) acquisitions, the market reaction is significantly positive unless the firm reducing its debt level is financially distressed (model 5a). Model 5b shows that financial distress negatively influences the market reaction to an issue. Suzuki (1997) who states that share prices react much more negatively when a manager plans to use the proceeds for a company's internal project rather than to fund a takeover.

The results regarding relative issue size and book-to-market turn insignificant, but large issues trigger positive abnormal returns. An equity issue at a discount to the current market price may imply

[31] The Spearman non-parametric correlation coefficient between wealth transfers and book value of leverage equals 0.51 and is significant at the 1% level.

an increase in total dividend payments (Hietala and Loyttyniemi, 1992). High current dividend payout ratios may lead to larger dividend increases implicit in the share issue, which could be reflected in a more positive share price reaction. Our data do not support this hypothesis as the coefficient of *Payout* suggests the opposite. Either investors do not value an increased dividend yield subsequent to the issue or companies cut their dividends per share subsequent to the issue (which is very unlikely e.g. Marsh, 1992).

While major underwriters are able to negotiate a higher discount (see section 6.3), the market announcement reaction considers neither who is underwriting the issue nor underwriter risk. While the market does not seem to properly take into account the potential wealth transfer from shareholders to bondholders, a deep offer price discount is interpreted as a negative signal.

8. Conclusions.

This paper has documented the regulatory and financial consequences of the choice of issue method of seasoned equity. The market reactions to the announcements of rights issues and open offers were computed and its the determinants were analyzed. Furthermore, we examined the choice of issue method, the setting of the offer price discount and the decision to underwrite an offering. In particular, we investigated the impact of ownership structure, issue risk, future growth opportunities, financial distress, the use of issue proceeds and the type of underwriter.

We obtained the following results. First, the decision to underwrite an equity issue in the UK is different than in other countries, like the US, where underwriting of rights issues usually occurs when the expected take-up of current shareholders is low. In the UK rights issues and open offers are virtually always underwritten except when the issuer is a small firm in severe financial difficulties. Consequently, the announcement of a UK non-underwritten equity offer triggers a strongly negative announcement reaction, which confirms that the underwriting process fulfills a certification role. Recently, there has been some discussion in the UK about motivating well-performing companies to perform non-underwritten issues at a (deep) discount as this saves underwriter costs. However, the argument of advisers, whether self-interested or not, that it may give a negative signal about firm quality is not unreasonable when judged in light of the results of this paper.

Second, we found that underwriters have an important impact on the setting of the offer price discount in rights issues. They are primarily interested in reducing the risk of having to purchase the shares of a failed issue. The main risk factors which these underwriters consider are stock market volatility and issue exposure. We also find evidence that conflicts of interest of the sponsor/underwriter of the issue play a role: when a sponsor also acts as lead underwriter, larger discounts are set. Moreover, the top three underwriters in the UK, who may have more bargaining power in discount negotiations with the issuing firm, also set higher discounts. There is no relation between price discount in open offers and the risk of adverse price effects, possibly because the discount is restricted to 10% in open offers. There is some evidence of a positive relation between the

the discount in open offers and the market-to-book ratio: high growth opportunities are reflected in a higher discount, embedding a higher degree of uncertainty.

Third, the choice between performing a rights issue or an open offer depends mainly on the interests of directors, future growth opportunities, stock market uncertainty and the liquidity in the market for rights. A large required investment by insiders, large market volatility and an illiquid market for rights induce companies to issue shares by means of an open offer. Low corporate growth perspectives make a firm opt for an a rights issue, especially when directors or institutions own a large share stake.

Finally, we find that the issuers of underwritten rights offers experience a significantly negative abnormal announcement return of –2.3% whereas the market reacts positively (by 2.8%) to the announcement of an underwritten open offer. Most of the positive share price announcement reaction is explained by high pre-issue levels of director ownership and ownership concentration combined with a decrease in both of these levels, by the use of the proceeds for acquisitions or debt reductions, by the size of the issue, by large wealth transfers and by better growth opportunities. Announcement effects are more negative when the firm is in financial distress or performs poorly, when large discounts are made (which signals issue uncertainty) and when there are fewer growth opportunities.

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Appendix: Calculation of Wealth Transfers

Wealth transfers from shareholders to debtholders resulting from an equity issue are computed using Merton's (1974) model. By estimating the market values of debt and equity before and after the seasoned equity issue, we can calculate these wealth transfers.

Equity is viewed as a call option on the assets of the firm with an exercise price equal to the face value of debt:

(1) $V_E = \text{Call}\ (V_A, D_B, \sigma_A, r_f, T)$

(2) $V_A = V_E + V_B$

where Call $(\cdot)$ is the Black-Scholes valuation of a European call option. V_A is the unobservable market value of the company's assets, V_E the market value of equity three months before the issue[32] and V_B the unobservable market value of debt. The face value of debt D_B and the time to maturity T were collected from annual reports. Four categories of debt were observed: debt maturing within one year (including trade credit), within 1 and 2 years, within 2 and 5 years and after 5 years. Because the model assumes only one class of debt, a single measure of time to maturity must be used. Here it is assumed to be a weighted average of the four maturities, taken to be ½, 1½, 3½ and 10 years respectively. The risk-free rate r_f was estimated over the year of issue from a basket of government bonds and is assumed to be constant by the Merton model. The volatility of assets σ_A is not observable. Instead, it is inferred from the short-term volatility of equity returns σ_E measured from daily price data over six to three months before the issue to avoid event-induced variance. It follows from Itô's Lemma that:

(3) $\sigma_E / \sigma_A = (\delta V_E / \delta V_A) * (V_A / V_E)$

By differentiating the expression for V_E in Merton (1974) with respect to V_A it follows that the partial derivative of these two variables is equal to N(d1) in the Black-Scholes model. The values of V_A, V_B and σ_A can be found by solving this system of three equations. For plausible values there is a unique solution.

Under the assumption that the value of the firm is independent of capital structure[33], the value and volatility of assets after the issue should remain constant when the proceeds to the issue are applied fully to reduce debt. In these cases the theoretical post-issue value of equity could be calculated from the Black-Scholes formula using the pre-issue value and volatility of assets. However, these variables change if (part of) the proceeds are used to undertake investment projects or acquisitions. The net present value of the projects financed by the proceeds to the issue is not known. It is therefore assumed that the proceeds are not invested but held as cash, so that the value of assets

[32] The value of equity is measured at three months before announcement of the issue to avoid incorporating price run-ups.

[33] The Merton model assumes that the firm's assets follow a geometric Brownian motion whose parameters are independent of capital structure.

increases by the amount raised and the volatility of assets will remain the same[34]. The theoretical post-issue value and volatility of equity, as well as the value of debt can then be found from equations 1 through 3 using the newly found value of assets. From Galai and Masulis (1976: 65) it follows that, had there been no dilution of leverage, the increase in the value of equity and debt would have been proportional to the increase in the value of assets. To measure possible wealth transfers from one set of claimholders to the other, the post-issue values therefore have to be normalized by the pre-issue value of assets. Moreover, if proceeds to the issue are used to repay debt, the amount repaid is assumed to be invested at the prevailing interest rate so that the market value of the repayment to the debtholder is the same as the book value[35]. The wealth transfer is then calculated as:

$$W = V_B' \cdot (V_A/V_A') - V_B + V(\text{repayment}) \tag{4}$$

where W is the wealth transfer, V(repayment) is the value of the debt claims repaid to debtholders, and V_B' and V_A' are post-issue market values of debt and assets, respectively.

It should be emphasized that if the firm invests in projects yielding a positive NPV (rather than merely generating the cost of capital), the change in leverage as calculated here will be understated. Therefore wealth transfers will also be understated. Moreover, if the volatility of asset returns decreases, the theoretical post-issue value of debt increases, resulting in higher wealth transfers than formula 4 gives. An increase in asset volatilities has the reverse effect. Furthermore, the Merton model assumes costless bankruptcy procedures that occur only at maturity. A violation of this assumption may affect the outcome for firms close to financial distress because bankruptcy costs are generally borne by debtholders. The value of debt may thus be overestimated for these companies. Further assumptions by the Merton model are that there should be no violations of absolute priority in case of bankruptcy, there should be no issues of (diluting) senior debt prior to maturity of the present claims and there are no taxes. Given the large number of assumptions made, one needs to be careful in interpreting the results from these calculations. However, they are useful as a rough and conservative approximation of wealth transfers triggered by equity issues.

[34] Alternatively, one could assume that proceeds are invested at the risk-free rate of return so that the net present value of the project is non-stochastic and equal to the proceeds to the issue.
[35] This assumption was made because, for most claims, the rate of interest charged to the company is unknown.

Table 1. Abnormal returns to announcement of seasoned equity issues.

Abnormal returns to announcement of seasoned equity offerings by industrial firms are shown by country. Two-day cumulative abnormal returns over day -1 and 0 are stated, unless noted otherwise. Returns are categorized according to issue method: rights issues (underwritten, not underwritten or all rights issues if no difference is made), public and private issues. ***, **, * stand for significance at the 1, 5 and 10% level. [a] monthly abnormal return measured over the month of announcement, [b] total announcement return reported instead of abnormal return, [c] significance not reported, [d] cumulative abnormal return over days -3 to 0, [e] cumulative abnormal return over day 0 to +1, [f] cumulative abnormal return over day -1 to +1.

Country	Study	Event Period	Two-day Announcement Effect (in %)				
			Rights Issues			Public	Private
			Not Underwritten	Underwritten	All	Issues	Issues
UK	Marsh (1979)	1962-1975			2.10**[a]		
	Armitage (1999)	1985-1996			-0.93***		
	Slovin et al. (2000)	1986-1994	-4.96***	-2.90***			1.22
US	Asquith and Mullins (1986)	1963-1981				-2.70***	
	Masulis and Korwar (1986)	1963-1980				-3.25***[b]	
	Mikkelson and Partch (1986)	1972-1982				-3.56***	
	Hansen(1988)	1964-1986		-1.21***			
	Wruck (1989)	1979-1985					1.89*
	Eckbo and Masulis (1992)	1963-1981	-1.39	-1.03**		-3.34***	
	Hertzel and Smith (1993)	1980-1987					1.72**[d]
	Singh (1997)	1963-1985		-1.07***			
New Zealand	Marsden (2000)	1976-1994	0.75**[e]	-1.74***[e]	-1.01***[e]		
Netherlands	De Jong and Veld (1998)	1977-1996	-1.46*[f]			-0.41	-0.52
	Koevoets (1999)	1983-1998			-3.83***	0.63	
Sweden	Molin (1996)	1980-1994			-0.89[f]		3.21*[f]
Finland	Hietala and Loyttyniemi (1991)	1975-1988			4.15***[f]		
Greece	Tsangarakis (1996)	1981-1990	3.97***				
Japan	Kang and Stulz (1996)	1985-1991			2.21***	0.51*	3.88***
Korea	Kang (1990)	1984-1987			0.96[c]		
	Kim and Lee (1990)	1984-1986			3.20[a, c]		
	Dhatt et al. (1996)	1977-1991			2.41***[a]		
Norway	Bøhren et al. (1997)	1980-1993	1.55***	-0.23	0.47**		
Switzerland	Loderer and Zimmerman (1988)	1973-1983			2.60[a]		

Table 2. Frequency distribution of seasoned equity issuance announcements by British firms (1992-99).

	all issues	rights issues	open offers	placings
1999	20	4	5	11
1998	14	6	1	7
1997	10	4	3	3
1996	16	7	2	7
1995	10	3	3	4
1994	9	7	1	1
1993	12	6	2	4
1992	4	2	1	1
Total	95	39	18	38

Table 3. Descriptive statistics for seasoned equity offerings by British firms (1992-99).

Descriptive statistics are disaggregated by offer type. Difference in means tests and Mann-Whitney-tests for differences in median values were performed for the sub-sample of underwritten rights issues versus open offers. Significant results are indicated in the underwritten rights issue column. The offer price discount is measured as the share price the day prior to announcement minus the subscription price divided by the share price the day prior to announcement. The discount is also calculated using the theoretical ex-rights price (TERP). TERP is the market share price the day prior to announcement x (number of old shares / total of old and new shares) + the subscription price x (number of new shares / total of old and new shares). The standardized relative return on assets (ROA) is computed as the ROA in the last fiscal year minus the issuer's industry average divided by the standard deviation of industry ROA. The issuer's industry is determined by the Compustat industry sector code. The use of proceeds is partitioned into three categories one of which is investments (which includes unnamed future acquisitions). The take-up percentage represents the reported number of shares taken up at the close of the offering excluding shares that were placed 'firm' prior to the offer period (this includes any pre-renunciations) divided by the the total number of shares open to subscription by current shareholders (this excludes 'firm' placed shares subject to joint placings). Source: Perfect Information, Sequencer, Regulatory News Service messages (via Reuters Business Briefing), London Share Price Database, Thomson SDC Platinum, Compustat and Datastream. ***, **, * stands for significance at the 1, 5 and 10% level. [a] Four negative M/B ratios were set to zero. This does not affect the results in this paper. One highly negative price-earnings ratio due to very small negative earnings was set to -100%. [c] Four negative leverage ratios in the sample due to negative book value of equity were set to 100%. [d] Percentages add up to more than 100% because some firms announce multiple uses of funds

	all issues (n=95)			underwritten rights issues (n=38)			underwritten open offers (n=14)			placings (n=38)		
	mean	median	st. dev.	mean	median	st. dev.	mean	median	st. dev.	mean	median	st. dev.
Ratio of common shares issued to common shares outstanding (%)	28.01	18.87	46.50	37.38	29.29	24.55	25.90	20.17	15.18	4.66	4.96	1.86
Ratio of gross proceeds to market value one month before issue (%)	24.01	14.97	47.43	30.49	26.16	16.76	25.58	19.59	14.56	4.71	4.91	2.13
Discount to market price one day prior to announcement (%)	9.17	7.69	10.99	16.02***	15.75***	8.28	3.75	3.26	3.05	2.94	4.05	6.36
Discount to TERP (%) one day prior to announcement (%)	7.27	6.09	8.50	12.28***	12.22***	5.48	3.03	2.73	2.56	2.85	3.87	6.08
Firm size as measured by:												
Total assets at end of last fiscal year (£m)	301.05	47.68	652.19	492.32***	83.63**	840.89	92.80	31.05	122.21	222.38	31.19	545.77
Total revenues at end of last fiscal year (£m)	333.53	26.27	884.43	545.96**	74.76**	1166.52	52.54	20.28	73.48	264.39	15.29	728.72
Market value one month before issue (£m)	317.41	61.60	813.81	270.00*	73.29	366.02	133.31	64.32	194.12	472.55	94.74	1217.81
Return on assets at end of last fiscal year (%)	-4.67	2.49	19.21	-4.64	2.32	18.41	0.45	3.55	13.66	-7.25	3.43	22.57
Return on assets, standardized relative to industry mean	-0.49	-0.21	1.29	-0.46	-0.18	1.24	-0.61	-0.27	1.49	-0.44	0.05	1.28
Market-to-book value, measured one month before issue[a]	4.49	3.20	5.25	2.82**	1.74*	2.73	4.62	3.48	3.31	6.49	4.26	7.12
Price-earnings ratio, measured one month before issue[b]	4.68	9.24	44.99	2.89	9.28	41.06	-3.31	13.74	44.52	13.75	10.97	49.07
Payout-ratio, average over last three fiscal years (%)	21.13	5.84	35.45	27.33	25.33	40.25	18.36	10.80	21.76	18.73	0	30.32
Leverage, measured by book value of debt over common equity (%)[c]	82.84	47.63	117.92	80.18	62.37	80,80	38.26	38.04	29.59	82.03	28.16	137.90
Leverage, measured by market value of debt over common equity (%)	39.64	17.62	58.98	51.09***	30.57**	49.18	18.30	11.13	22.70	18.01	6.64	24.69
Use of proceeds[d]	n	%		n	%		n	%		n	%	
investments	57	60		21	55		9	64		25	66	
debt reduction	35	37		21	55		4	29		7	18	
working capital	19	20		4	11		5	36		8	21	
Take-up by current shareholders (%)				76.99***	92.39***	26.53	46.69	51.71	26.40			

Table 4. Frequency distribution of financially distressed seasoned equity issuers in the UK (1992-99).

This table shows the frequency distribution of financially distressed companies performing seasoned equity issues in the UK in the period 1992-1999, disaggregated by issue method. A firm is in financial distress when: (1) the issuer's return on assets (excluding extraordinary items) is in the lowest ROA decile of all companies that are part of the FTSE All-Share index in the offering year; (2) the issuer's book value of debt over equity (leverage) is in the highest leverage decile of all companies that are part of the FTSE All-Share index in the offering year; (3) the interest cover (EBITDA divided by total interest expense) in the offering year is lower than two; (4) there are two or more subsequent dividend cuts within two years around the offering period or any dividend omissions in the offering year; (5) the issuer's listing on the stock exchange was suspended or cancelled within a time frame of two years around the offering period; (6) the issuer was taken over by another party within a time frame of two years after the offering period due to poor performance and; (7) the issuer entered administrative receivership or was liquidated within a time frame of two years after the offering period. Source: London Share Price Database and Compustat. [a] Percentages do not add up to 100% because some companies satisfy more than one criterion

	all issues		underwritten rights issues		underwritten open offers		non-underwritten issues		placings	
	n	%	n	%	n	%	n	%	n	%
in financial distress, of which:	51	53.68	18	47.37	6	42.86	5	100.00	22	57.89
in this subsample, number of issuers:[a]										
in lowest ROA decile	41	80.39	15	83.33	6	100.00	4	80.00	16	72.73
in highest leverage decile	18	35.29	7	38.89	0	0	4	80.00	7	31.82
interest cover < 2	41	80.39	17	94.44	5	83.33	3	60.00	16	72.73
dividend cuts / omissions	46	90.20	17	94.44	6	100.00	5	100.00	18	81.82
listing suspended/cancelled	6	11.76	1	5.56	0	0	2	40.00	3	13.64
distress related taken over	3	5.88	1	5.56	0	0	1	20.00	1	4.55
in bankruptcy	2	3.92	0	0.00	0	0	1	20.00	1	4.55
not financially distressed	44	46.32	20	52.63	8	57.14	0	0	16	42.11
total	95	100.00	38	100.00	14	100.00	5	100.00	38	100.00

Table 5. Ownership structure of British companies offering seasoned equity (1992-99).

Ownership concentration, measured as a Herfindahl index of the five largest shareholders of the issuing company reported on a scale of 100, and a breakdown of shareholdings of institutions, various directors, corporate and other individuals are reported for a sample of British firms issuing seasoned equity in the period 1992-1999. Holdings are computed as the number of shares held divided by the total number of shares outstanding prior to the issue. Director holdings include all shareholdings regardless of size, whereas institutional, corporate and individual blockholdings are reported as the sum of all holdings that exceed 3% of the issuer's total outstanding share capital. Executive and non-executive directors' holdings exclude the stake of the CEO and chairman of the company, which are stated separately. Percentage changes in percentage shareholdings as a result of the equity issue are reported between brackets. They are computed as ((s + v) / s) / ((x + p) / x) - 1, with; s being the number of shares held by the party of interest prior to issue; v is the number of new shares purchased; x the total number of shares outstanding prior to issue and; p the total number of new shares issued. Source: Perfect Information, Sequencer, Worldscope and Regulatory News Service messages (via Reuters Business Briefing).

	mean (%)		median (%)		st. dev. (%)	
	%	% change	%	% change	%	% change
Herfindahl index						
all issues	7.74	(-0.50)	4.17	(-7.90)	9.78	(37.19)
underwritten rights issues	7.69	(1.99)	3.99	(-4.31)	11.13	(50.19)
underwritten open offers	10.69	(-9.73)	4.69	(-18.99)	12.07	(31.23)
placings	6.55	(-0.83)	3.34	(-7.46)	7.51	(17.99)
Institutional ownership						
all issues	26.20	(6.31)	22.93	(0)	18.79	(23.12)
underwritten rights issues	24.74	(8.84)	23.52	(0)	15.02	(25.01)
underwritten open offers	31.77	(4.39)	26.42	(0)	22.52	(19.17)
placings	27.06	(2.29)	22.95	(-1.85)	21.11	(15.61)
CEO ownership						
all issues	5.57	(-4.57)	3.11	(0)	11.05	(10.19)
underwritten rights issues	6.36	(-4.98)	0.25	(0)	11.78	(13.15)
underwritten open offers	8.66	(-7.05)	1.54	(-0.92)	14.84	(9.17)
placings	4.24	(-2.11)	0.20	(-2.76)	9.23	(4.08)
Chairman ownership						
all issues	3.50	(-4.25)	0.02	(0)	9.95	(13.43)
underwritten rights issues	3.64	(-4.21)	0.03	(0)	9.88	(9.12)
underwritten open offers	6.04	(-9.20)	0.19	(0)	16.52	(12.12)
placings	1.59	(-1.78)	0	(0)	3.76	(2.25)
Executive directors						
all issues	2.55	(-7.12)	0.08	(0)	6.93	(12.25)
underwritten rights issues	2.38	(-6.39)	0.07	(0)	7.40	(11.12)
underwritten open offers	4.78	(-11.34)	0.26	(-9.46)	10.71	(12.02)
placings	1.96	(-3.54)	0.07	(-1.93)	4.91	(7.58)
Non-executive directors						
all issues	1.62	(-0.97)	0.08	(0)	3.37	(40.61)
underwritten rights issues	0.88	(-6.97)	0.04	(0)	2.48	(12.26)
underwritten open offers	1.58	(-6.12)	0.03	(-3.13)	3.51	(7.97)
placings	1.81	(-1.84)	0.08	(-2.26)	3.24	(4.60)
Corporate blockholders						
all issues	4.76	(2.48)	0	(0)	11.94	(26.68)
underwritten rights issues	4.81	(4.54)	0	(0)	13.34	(38.60)
underwritten open offers	1.14	(-0.90)	0	(0)	2.47	(2.44)
placings	4.62	(-0.53)	0	(0)	10.31	(4.91)
Individual blockholders						
all issues	2.22	(-1.05)	0	(0)	5.06	(11.33)
underwritten rights issues	2.56	(-3.34)	0	(0)	6.09	(9.27)
underwritten open offers	0.40	(-0.71)	0	(0)	1.50	(2.67)
placings	2.63	(0.97)	0	(0)	4.90	(15.10)

Table 6. Abnormal returns of British firms issuing seasoned equity.

This table shows the abnormal stock returns of British firms issuing equity, disaggregated by offer type. Average abnormal returns and the percentage of negative abnormal returns are reported over trading days -20 to +10, day zero being the announcement day. Cumulative average abnormal returns over days -1 to 0 and -1 to +1 are also reported. Abnormal returns were calculated using a market model estimated over trading days -180 to -31, with the FTSE All-Share Index as market index. Tests of significance were computed by means of t-statistics on standardized abnormal returns, and a non-parametric z-test on the proportion of negative abnormal returns. Source: daily price data from Datastream and Sequencer.

day	underwritten rights issues (n=38)		underwritten open offers (n=14)		placings (n=38)	
	AR (%)	% negative	AR (%)	% negative	AR (%)	% negative
-20	-0.189	63.16	-0.234	64.29	0.374	52.63
-19	-0.191	60.53	0.919	50.00	1.067	44.74
-18	-0.017	55.26	-0.527	71.43	0.948	42.11
-17	-0.150	55.26	-0.010	57.14	-0.175	55.26
-16	0.089	55.26	0.601	50.00	0.420	39.47
-15	0.018	42.11	0.937	57.14	0.650	50.00
-14	-0.166	63.16	0.240	64.29	1.045	42.11
-13	-0.104	65.79*	-0.365	71.43	0.066	44.74
-12	-0.117	71.05**	-0.276	57.14	0.812**	42.11
-11	-0.169	63.16	-0.843*	85.71***	0.158	44.74
-10	-0.572**	63.16	0.127	50.00	-0.693	63.16
-9	-0.071	65.79	1.883	57.14	0.220	39.47
-8	-0.208	68.42**	0.460	71.43	0.209*	39.47
-7	-0.163	60.53	-0.256	50.00	-0.323	50.00
-6	-0.359*	60.53	-0.052	50.00	0.516**	39.47
-5	-0.244	60.53	-0.928*	71.43	0.133	44.74
-4	-0.187	55.26	-0.346	57.14	0.032	42.11
-3	-0.284	65.79	-0.561	78.57**	-0.382	50.00
-2	-0.091	63.16	0.171	57.14	0.314	57.89
-1	-0.401**	81.58***	-0.184	64.29	-0.231	63.16
0	-1.912**	73.68***	2.753***	14.29***	1.235	44.74
+1	0.513	44.74	1.491	42.86	0.565	39.47
+2	0.359	52.63	-0.499	57.14	0.569	50.00
+3	-0.162	55.26	0.361	50.00	1.484**	39.47
+4	-0.468	65.79*	0.269	50.00	-0.419	57.89
+5	0.177	52.63	0.276	50.00	0.331	50.00
+6	0.364	50.00	-0.758*	71.43	-0.135	55.26
+7	0.140	52.63	0.172	64.29	-0.090	44.74
+8	0.185	63.16	-0.401	57.14	0.474	42.11
+9	0.129	55.26	-0.294	78.57**	0.616	50.00
+10	-0.216	60.53	-0.407	64.29	-0.022	52.63
Cumulative abnormal returns:						
CAR (-1, 0)	-2.313**	76.32***	2.569***	21.43**	1.004	44.74
CAR (-1, 0, 1)	-1.801*	63.16	4.060***	21.43**	1.569	39.47

Table 7. Cross-sectional regressions of issue price discount on underwritten rights issues and open offers.

Regression results (OLS) for issue price discount on 52 offerings by British firms between 1992-1999. The subscription price discount, the dependent variable, is measured as the closing share price on the day prior to announcement minus the subscription price divided by the closing price the day prior to announcement. *Market sentiment* is the average daily return on the FTSE All-Share Index in the three months before announcement. *Market volatility* is the standard deviation of returns on the FTSE All-Share Index in the three months before announcement. *Issuer sentiment* is the average return on the issuer's shares in the three months prior to announcement. *Issuer volatility* is the standard deviation of returns on the issuer's shares in the three months prior to announcement. *Beta* is the market model beta calculated in section 5 of this paper. It represents systematic risk. *Exposure* equals the relative size of the issue (gross proceeds divided by market capitalization) minus the share of the issue pre-committed to. T-values are between brackets. ***,**,* stand for statistical significance at the 1%, 5% and 10% level respectively.

Dep. Variable	Issue discount		Issue discount		Issue discount	
	Model 1		Model 2		Model 3	
	Risk		**Performance/Growth**		**Global**	
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
Intercept	8.513	2.641	12.397***	7.470	5.585	1.416
Market volatility	-1608.978	-1.561			-973.601	-0.804
Market sentiment	1113.502	0.694			639.756	0.364
Issuer volatility	219.585	1.074			95.725	0.323
Issuer sentiment	343.000	0.496			370.967	0.488
Beta	-1.369	-0.562			-0.001	-0.005
Exposure	0.001	0.092			-0.001	-0.094
Book-to-market			-13.774***	-3.057	-0.970	-0.214
Relative ROA			-0.984	-0.465	0.782	0.760
Interaction terms: rights issues (rights=1)						
Market volatility*rights	2763.829***	3.030			2006.943*	1.769
Market sentiment*rights	893.249	0.504			1725.709	0.858
Issuer volatility*rights	-667.176**	-2.361			-363.061	-1.060
Issuer sentiment*rights	-608.018	-0.813			-729.93	-0.892
Beta*rights	-1.710	-0.629			-3.085	-1.017
Exposure*rights	0.293**	2.492			0.279**	2.294
Book-to-market*rights			19.743***	4.658	0.009	0.017
Relative ROA*rights			0.729	0.316	-0.762	-0.590
EGM					-1.103	-0.471
Sponsor=underwriter (yes=1)					3.754*	1.875
Lead underwriter=major (yes=1)					3.709*	1.918
Adjusted R^2	0.728		0.299		0.688	
F	12.357***		6.237***		6.816***	

Table 8. Logit regressions of the probability that a rights issue is chosen.

Logit regression results on a sample of 52 rights issues and offers in which insiders own shares in the issuing company. The logit model is ln (p / (1-p)) = Intercept + BX, where p is the probability that a rights issue will be performed. *Director ownership* is the percentage equity owned by directors prior to the seasoned offering. The squared variable is also included. *Total ownership concentration* is the Herfindahl index calculated over the five largest shareholders of the issuer prior to the issue. The squared variable is also included. *Issue size* is the natural logarithm of gross proceeds to the issue. *Trading velocity* is the average number of shares traded divided by the total number of shares outstanding in the three months prior to announcement. *Market volatility* is the standard deviation of returns on the FTSE All-Share Index in the three months before announcement. T-values are between brackets. ***, **, * stand for statistical significance at the 1%, 5% and 10% level respectively.

	Model 1	**Model 2**	**Model 3**	**Expected sign**
Intercept	-2.508	1.231***	-3.472	
	(-0.559)	(2.525)	(-1.120)	
Directors' ownership	0.307*	-96.892*		(+)
	(1.952)	(-1.843)		
Directors' ownership^2	-0.007*	178.347*		(-)
	(-1.882)	(1.846)		
Director ownership * issue size		13.399*		(+)
		(1.771)		
Directors' ownership^2 * issue size		-25.192*		(-)
		(-1.796)		
Total ownership concentration	6.672			(+)
	(0.186)			
Total ownership concentration^2	-71.294			(-)
	(-0.580)			
Issue size	0.609		0.454	(+)
	(1.344)		(1.217)	
Exposure	0.041			(?)
	(0.989)			
Trading velocity	-11.187			(+)
	(-0.637)			
Market volatility	-539.864*			(-)
	(-1.886)			
Book-to-market	1.758			(+)
	(1.327)			
Directors' ownership * Book-to-market			-8.741*	(-)
			(-1.785)	
Institutional ownership * Book-to-market			-17.025**	(-)
			(-2.058)	
Corporate ownership * Book-to-market			33.448	(?)
			(0.977)	
Ownership by individuals* Book-to-market			18.046	(?)
			(0.814)	
Pearson Goodness-of-Fit Chi-Square	46.129*	49.644***	40.703*	
p	0.064	0.004	0.065	

Table 9. Cross-sectional regressions of CAR on underwritten seasoned equity offering.

OLS regression results for two-day announcement returns on 52 underwritten rights issues and open offer by British firms between 1992 and 1999. The announcement returns were calculated using a market model with adjustment for thin trading.*Proceeds for acquisition* and *Proceeds for debt reduction* equal 1 when the proceeds to the issue are used for investments/acquisitions, or debt reduction respectively. *Issue size* is the natural logarithm of the issuer's market capitalization. *Relative issue size* equals the relative size of the issue (gross proceeds divided by market capitalization) minus the pre-committed share of the issue. *Payout* is the average dividend payout ratio over the last three years prior to issue. *Wealth transfer* is the wealth transfer to bondholders as a result of the equity issue, as calculated the appendix. *Distress* equals 1 when a company is in the lowest ROA decile or in the highest leverage decile or has an interest cover below two. *Discount* is the discount of issue price to theoretical ex-rights price. *Rights* is a dummy variable indicating whether a rights issue is chosen (=1). T-values are between brackets. ***, **, * stand for statistical significance at the 1%, 5% and 10% level respectively.

	Ownership		**Proceeds**		**Wealth transfer**		**Growth**	**All**		**Expected**
	Model 1a	Model 1b	Model 2a	Model 2b	Model 3a	Model 3b	Model 4	Model 5a	Model 5b	**sign**
Intercept	-0.006	-0.031***	-0.049**	-0.072***	-0.046	0.028	0.012	-0.076	-0.014	
	(-0.192)	(-2.789)	(-2.077)	(-2.834)	(-1.574)	(1.681)	(0.437)	(-1.478)	(0.277)	
Total ownership concentration	0.307							0.093		(+)
	(1.570)							(0.428)		
Total ownership concentration^2	-0.814**							-0.495		(-)
	(-2.222)							(-1.376)		
Directors' ownership concentration									-0.089	(-)
									(-1.426)	
Changes in directors' ownership concentration	-0.001**	-0.001*			-0.001**			-0.000		(?)
	(-2.054)	(-1.799)			(-2.405)			(-1.606)		
Institutional ownership concentration	-0.238							-0.195	-0.111*	(+)
	(-1.586)							(-1.455)	(-1.910)	
Institutional ownership concentration^2	0.352							0.295		(-)
	(1.619)							(1.491)		
Corporate and individual ownership									-0.193***	(+)
									(-2.956)	
Level of total ownership concentration * Changes		-0.184*								(-)
		(-1.868)								
Level of directors' ownership concentration * Changes									-0.001	(+)
									(-1.583)	
Level of institutional ownership concentration * Changes		-0.009							-0.002	(-)
		(-0.356)							(-1.296)	
Level of corporate and individual ownership * Changes									-0.022***	(-)
									(-4.436)	
Proceeds for acquisition			0.044*	0.068***	0.032			0.042*	0.046***	(+)
			(1.720)	(2.742)	(1.597)			(1.692)	(2.741)	
Proceeds for debt reduction			0.060**	0.079***	0.031			0.056*	0.055**	(-)
			(2.261)	(2.990)	(1.563)			(1.934)	(2.629)	
Distress				0.019	-0.029**				-0.048***	(-)

				(0.791)	(-2.003)				(-3.582)	
Distress * Proceeds for acquisition			-0.035					-0.029		(-)
			(-1.506)					(-1.261)		
Distress * Proceeds for debt reduction			-0.028					-0.050*		(?)
			(-1.128)					(-1.934)		
Distress * Rights* Proceeds for acquisition				-0.088***						(-)
				(-3.101)						
Distress * Rights * Proceeds for debt reduction				-0.036						(?)
				(-1.197)						
Relative issue size								0.001	0.001	(?)
								(1.250)	(1.190)	
Issue size					0.007		0.014**	0.017**	0.013**	(?)
					(1.212)		(2.211)	(2.222)	(1.967)	
Issue size * Distress							-0.014*			(?)
							(-1.756)			
Payout								-0.000	0.000	(+)
								(-1.590)	(-0.497)	
Book-to-market							-0.066**	-0.021	-0.023	(-)
							(-2.452)	(-0.896)	(-1.054)	
Book-to-market * Distress							0.035			(-)
							(0.968)			
Relative ROA						-0.026***				(-)
						(-3.378)				
Relative ROA* Distress						0.041***				(+)
						(3.576)				
Lead underwriter=major (yes=1)								0.031	-0.011	(+)
								(1.394)	-0.542	
Wealth transfer					0.035**	0.053**	0.019	-0.001	0.038**	(-)
					(2.021)	(2.269)	(0.750)	(-0.074)	(2.518)	
Wealth transfer * Distress						-0.025	0.018			(-)
						(-0.838)	(0.466)			
Rights								0.012	-0.018	(-)
								(0.325)	(-0.885)	
Discount					-0.004***	-0.005***	-0.005***	-0.001	-0.005***	(-)
					(-3.562)	(-3.404)	(-3.163)	(-0.222)	(-3.616)	
Discount * Rights						0.001	0.002	-0.004		(-)
						(0.449)	(0.908)	(-0.633)		
Adjusted R^2	0.144	0.097	0.060	0.189	0.345	0.359	0.411	0.429	0.624	
F	2.713**	2.835**	1.810	3.369***	4.842***	5.76***	3.744***	3.126***	5.972***	

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