The Impact of the Financial Crisis on SEO Fees*

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Abstract

This paper investigates the marked increase in underwriting fees for UK seasoned equity offerings after the recent financial crisis. We develop and test a number of hypotheses related to underwriters and to the issuer's corporate governance characteristics. We find that a substantial part of the simultaneous increases in fees and discounts relate to the bargaining power of underwriters and to the growing influence of institutional shareholders with short-term investment horizons. We also find evidence of conflicts of interest due to the dual role of institutional shareholders as investors and sub-underwriters. In contrast to the pre-crisis period, reputable underwriters charge higher discount and fees.

JEL classification: G21, G24
Keywords: Seasoned equity offerings; Rights issues; Underwriting fees; Discounts; Financial crisis

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Abstract

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1. Introduction

The process of raising equity capital in UK has been the subject of considerable regulatory scrutiny and public debate during the last two decades. A series of reports (Marsh, 1994; Director General of Fair Trading 1995, 1996; Monopolies and Merger Commission, 1999) by various regulatory bodies during the period 1994-1999 highlighted issues with particular focus on fees charged for underwriting services and the possible use of deep-discounted non-underwritten rights issues. The surge in underwriting fees throughout the financial crisis reignited the equity capital debate.[1] At the same time average discounts rose nearly to 40% from a historical average of 30%. Such increases reflect the apparent higher risk faced by the underwriters as market volatility reached high levels and UK companies raised a huge amount of equity to recapitalise their fragile balance sheets. What is less clear, however, is whether this on its own can account for the steep rise in underwriting fees or there has were other factors that led to these developments.

In contrast to the U.S. where the use of rights is scarce, in the rest of the world there is a continuous reliance on right offerings (McLean and Zhao, 2011). Furthermore, there is some evidence to suggest a trend towards higher fees across Europe. For instance, the Unicredit right issue (a top bank listed in Milan Stock Exchange) provided an opportunity to its underwriters (e.g. HSBC, Société Générale and BNP Paribas) to generate a substantial level of revenue.

The Institutional Investor Council (IIC, 2010) in UK recently published the results of its own inquiry criticising the fees that investment banks charge companies for advising on share issues. The report identified high level of both discount and fees paid by companies. A lack of evidence of competitiveness, a potential decline in sub-underwriting capacity over the past decade and a less-well informed position of companies relative to their bank advisers are also issues in the inquiry. Moreover, the IIC highlighted a lack of transparency on fees actually paid with a trend in the role played by lending banks acting as financial underwriters with an interest in the return of the individual deal rather than as natural long-term owners. Main recommendations were about a more widespread use of tendering for underwriting and sub-

1 For example, Burgess (2009) in the Financial Times (25 October 2009) quoted that, while in the past gross underwriting fees for right issues were about 2% (split into 1.25% paid out to sub-underwriters and 0.75% to banks and brokers), they have doubled to 4% (split into 1.75% paid out to sub underwriters and 2.25% to banks and brokers in 2008-2009).

underwriting contracts and a greater use of independent advisors.

The level of fees has also been the subject of an inquiry by the Office of Fair Trading (OFT, 2011). This study finds that the increase in fees cannot be explained by the rise in market volatility and argues that there are reasonable grounds for suspecting a restricted or distorted competition; the OFT report, however, stops short of referring the case to the Competition Commission. Instead, it argues that the companies and their institutional shareholders could tackle the level of fees more effectively. Furthermore, the report draws attention to the relatively weak bargaining position of issuing companies in comparison to investment banks, due to their lack of experience in raising equity capital and their focus mainly on speed, confidentiality and successful take-up.

Throughout the financial crisis, the renewed attention on underwriting fees and discounts raises two sets of empirical research questions. The first set pertains to the issuer's perspective and its corporate governance characteristics in particular. In other words, are the institutional shareholders able to increase fees or discounts as result of their twin roles as both shareholders of the issuing firm and potential sub-underwriters, in addition to their traditional role as information producers? The second set of research questions relates to the investment bank perspective. More specifically, has the impact of investment bank concentration or the reputation of underwriters on both fees and discount changed after the financial crisis in late 2007? Does the experience gap between underwriters and issuers affect the negotiation of fees and discount? Despite the increasing attention on institutional shareholders, considerable less research has been done in seasoned equity offerings and the literature contains no evidence on potential conflicts of interest between investment banks and institutional shareholders. Moreover, while there is a general agreement about the negative relation between fees and reputable underwriters, the existing evidence on discounts is rather mixed. The purpose of this paper is to address these issues by examining the impact of the financial crisis in the equity underwriting market. We do this by re-assessing the significance and explanatory power of the determinants of fees and discount in light of changed economic conditions for the rights issues and open offers between 2000 and 2010.

Our results show that both fees and discount increased due to new market conditions, related to high demand for underwriting services, distress condition of the firms and a stronger bargaining position of investment banks relative to the issuers.

To the best of our knowledge, this is the first study to test conflicting interests for institutional shareholders as result of their twin roles as both investors in the issuer and as potential sub-underwriters. Indeed, we find that institutional investors with shorter investment horizon push for higher fees and reduce the risk facilitating the success of the issuer (higher discount). We also show that the presence of domestic shareholders is likely to reduce this effect lowering the discount. Domestic institutional investors, typically the major long-term owners of UK equities, are likely to be less involved in potential conflicting interests.

From the underwriter perspective, top underwriters charge lower fees consistently with the certification hypothesis. However, we find that the predicted values of the discount of top underwriters have a different effect on fees before and after the financial crisis. More specifically, our evidence suggests that after the financial crisis top underwriters are able to charge both higher discount rate and higher fees, while an opposite result is found before 2008.

Finally, in terms of the degree of concentration in the underwriting market, we do not find sufficient evidence of lack of competitiveness in underwriting industry. Instead, we find a significant and negative sign of the degree of concentration in the full regression when our proxy for the demand of underwriting services is excluded; in fact concentration is not more related with fees (or discount) when also our proxy for demand is included. Further, demand for underwriters' services results significantly and negatively correlated with the degree of investment bank concentration. This finding suggests that in the presence of high demand for underwriting services less reputable underwriters are also likely to match with an issuer. This is consistent with the association of issuers and underwriters, in which (as modelled by Fernando et al., 2005) the level of market activity affects the market share of high ability underwriters.

The paper proceeds as follows. Section 2 discusses the existing literature related to our paper. Section 3 develops testable hypotheses. Section 4 describes the data and the sample summary statistics. Section 5 presents empirical models that investigate the gross underwriting fees and discount phenomenons. Section 6 concludes.

2. Related literature

Our paper relates to several strands in the literature on seasoned equity offerings. First, we focus on the direct issue costs across pre-emptive security types. A growing number of studies examine the role of institutional investors in SEOs (Chemmanur et al., 2009; Huang and

Zhang, 2011); while some others confirm the importance of variables capturing underwriter-related factors (Kim et al., 2010; Lee and Masulis, 2009). Second, we assess the implications of the conflicting interests in setting fees for institutional shareholders due to their twin roles as both investors and potential sub-underwriters; to the best of our knowledge, this is the first paper in the literature to examine such potential conflicts of interest in the context of SEO fees.[2] Finally, we provide evidence of changes in the behaviour of top underwriters after the financial crisis controlling for traditional determinants of fees and discount.

The debate on underwriting fees is to a certain extent hampered both by the inherent complexities of the issuing process and the lack of transparency on the composition of the total cost of underwriting. When raising capital the issuer typically seeks certainty of funds via an intermediated underwriting process and pays the underwriter(s) for the 'bundled services' provided. More specifically, gross underwriting fees (alias spreads) are the payment charged on issuers by underwriters and/or investing institutions (sub-underwriters) and/or existing shareholders acting as underwriters and/or placees on the share issue. Investment banks are thus meant to cover the underwriting risk, purchasing activity, due diligence, transaction-specific and on-going advice. In theory, three components make up gross underwriting fees. First, a lead underwriter's fee that relates mainly to sponsoring and advice activities. In practice, the lead underwriter is at risk between the underwriting and sub-underwriting agreement (Marsh, 1980) and in the majority of cases, the broker acts as the principal underwriter who then selects the sub-underwriters. Second, a company's broker fee paid for distributing the issue i.e. arranging the sub-underwriting and finding the placees. Third, a fee to third parties who 'sub-underwrite' issues guaranteeing to take up all unwanted shares. Rights issues or open offers must remain open at least for 10 business days where shareholders decide about whether to subscribe new shares or, in case of rights issues sell their rights ('nil-paid' rights) or do nothing. However, if a company has not disapplied the shareholder pre-emption rights in section 561 of the Company Act 2006, the period must last at least 14 calendar days. In case the firm requires an Annual General Meeting to raise the sought amount of capital, the process is extended by at least two

2 Banks who own both equity and debt in the same issuer may benefit from superior information about the company and use proceeds to repay their own debt. This alternative conflict of interests between the shareholder-debtholder is studied by Barucci and Mattersini (2008) and Xu (2009). Bodnaruk et al. (2009) provide indead evidence on the behaviour of banks advising the bidder as insiders when trading the stocks of the target on the U.S. merger and acquisition market.

weeks.

Numerous studies explore the determinants of underwriting fees (Eckbo et al., 2007). The extant evidence shows that fees relate to four main set of factors. First, firm- and risk-related variables: profitability, leverage, abnormal return, issuer-specific and market-specific risk (Kim et al. 2010; Suzuki, 2010; Eckbo and Masulis, 1992; Booth and Smith, 1986; Bhagat and Frost, 1986; Blackwell et al., 1990; Hansen and Torregosa, 1992; Ng and Smith, 1996; Singh, 1997; Armitage, 2000). Second, offering characteristics (Chen et al., 2009): flotation method, size and discount. Specifically, while Armitage (2000) does not find any difference in costs between open offers and rights issues; in the US, rights offerings are the cheapest in terms of direct costs (Smith, 1977). Moreover, a U-shaped curve characterizes size and fees (Drucker and Puri 2005; Altinkilic and Hansen, 2000), and recently Kim et al. (2010) document a positive and endogenous relation between discount and fees. Third, underwriter-related factors: the degree of concentration is not significant with fees (Kim et al., 2010), while higher reputable banks charge lower fees but a mixed evidence characterizes the relation between reputation and discount (Kim et al., 2010; Lee and Masulis 2009; Korteweg and Reenboog, 2002). Fourth, shareholders-related drivers: ownership concentration is negatively related to fees (Armitage, 2000), while there is a negative relation between institutional ownership and discounts (Huang and Zhang, 2011).

3. Hypotheses development

In this section, we develop specific testable hypotheses for our empirical analysis. While some of our hypotheses re-assess the determinants of underwriting fees and discount throughout the financial crisis, others are developed for the first time in this paper. Our first set of hypotheses relates to the impact of institutional shareholders on fees or discount as result of their twin roles as both investors in the issuer and as potential sub-underwriters, behind their traditional role as information producers.

According to the SEO literature, institutional investors can play either an information production role (Chemmanur and Jiao, 2011) or a manipulative trading role (Gerard and Nanda, 1993). In other words, institutional investors with favourable private information may request allocations in SEOs about which they obtain favourable information both before and after the offering (information production role) or may sell shares in the pre-SEO market to profit from share allocations at a reduced offer price (manipulative trading role). Despite these two roles,

institutional shareholders can benefit as a result of their twin roles as both investors in the issuing company, i.e. where they would like capital to be raised as cheaply as possible, and as sub-underwriters, i.e. where they may have an incentive to push for higher fees. Sub-underwriting is usually performed by existing institutional shareholders of the issuing company, other institutional shareholders, other investment banks, lending banks or hedge funds (OFT, 2011). It is worth noting that the asset owners rather than their asset managers act as sub-underwriters. Asset managers, therefore, require authorisation from their clients, whether via the investment management agreement, regulation, or otherwise, in order to support an issue (IIC, 2010). It is likely that the sub-underwriters benefit from higher sub-underwriting fees when they sub-underwrite a proportion of the transaction greater than their existing shareholdings. In fact, most of the institutional shareholders which responded to the OFT information request, confirmed that they were prepared for this (pp. 94). Again, some institutional investors indicated the need of a sufficiently large discount as necessary condition to sub-underwrite (pp. 90). As a result, institutional investors may request higher discount and fees due to their role as sub-underwriters. If issuers have institutional investors with shorter investment horizon who increase their stakes in the issuing firm after the offering, both fees or discount increase sharply (H1, conflicts of interest hypothesis).

In contrast, firms with greater institutional ownership tend to be associated with less information asymmetry and superior private information, in line with the information production hypothesis. Chemmanur et al. (2009) find that SEOs with greater pre-offer net buying by institutional investors have higher institutional allocations, greater oversubscription and lower SEO discount. Huang and Zhang (2011) find a negative relation between the pre-issue institutional ownership and the discount, supporting the presence of institutional shareholders as a proxy for the ease of marketing new shares. Surprisingly, very few empirical studies study the role of institutional investors focusing on underwriting fees. Autore and Kovacs (2011), using a sample of US SEOs but excluding among others rights, provide evidence that seasoned equity issuers ‘decide’ to pay (higher gross spreads and deeper discount) for an increase in the investor recognition, using two measures based on the number of institutional shareholders to proxy for the shareholder base and the shadow cost of incomplete information. From discussions with investors and advisors (IIC, 2010) the proportion of UK equities owned by UK institutional shareholders has declined from 60% in the mid-1990s to 40%. Traditionally, sub-underwriting in

UK was carried out by domestic institutional investors, such as insurance companies and pension funds characterized by long-term interests in their companies with an incentive to ensure successful share issues. The shift of institutional shareholders' ownership from UK to foreign investors in recent years could have a direct impact on underwriting fees as the latter may be unwilling or unable to underwrite. Thus, our second hypothesis deals with the role of physical proximity, familiarity and information asymmetry in the relationship between the issuer and institutional investors in determining the level of fees during the raising equity capital process. We posit that issuers with a larger proportion of stake held by domestic (UK) institutional investors are likely to reduce fees or discount (H2, exposure to UK equities hypothesis).

Prior studies suggest that underwriters also provide monitoring services (Hansen and Torregosa, 1992; Armitage, 2000; Demiralp et al., 2011). These arguments suggest that issuers with higher ownership held by large shareholders need less of the 'monitoring service' provided by underwriter and thus they set lower fees (H3, large shareholders hypothesis).

The second set of research questions deals with the investment bank perspective. In particular, they relate to whether or not the investment bank concentration or the reputation of underwriters change their influence on both fees and discount after the financial crisis; and whether the experience gap between underwriters and issuers affect the negotiation of fees and discount. Abrahamson et al. (2011) have recently argued that the nature of competition is likely to explain the 3% wedge difference in IPO underwriting fees between Europe and US. The argument related to the degree of concentration in the investment bank industry has been a subject of considerable attention by recent regulatory bodies too. Interestingly, the OFT inquiry finds that in contrast to the wide variation in fees for most of the 10 last years, in 2009 there was considerable clustering of fees and discounts in UK as well. However, the study finds no evidence of high concentration among investments banks, both for equity underwriting and corporate broking services, during the period 2007-2009. Conversely, the IIC (2010) rights issue fees inquiry concludes that there is "little compelling evidence of sufficient price tension at both primary and sub-underwriting level." Intuitively an increase in concentration among investment banks leads to increase the level of fees charged by banks (H4, investment bank concentration hypothesis).

Related to the concentration of the investment banking industry are the issues of underwriter's reputation and its associated bargaining power. The certification hypothesis based

upon the assumption of asymmetric information between insiders and outsiders (Booth and Smith, 1986) predicts that top underwriters charge lower fees (Kim et al. 2010; Lee and Masulis, 2009). However, the effect of reputation on the level of discounts remains a puzzle (Kim et al. 2010; Korteweg and Renneboog, 2002). Since the crisis in 2007, the need for capital adequacy has become more important than ever; as a result, certain banks can have strengthened their bargaining power by simply having the resources to underwrite large issues and charge fees reflecting their unique competitive position. The surge in the demand for underwriting services in 2008-2009 can have a direct impact on the level of fees in spite of the notable increase in the number of underwriters participating in the market and the potential increase in competition. In short, the likely increase in the bargaining power of investment banks in recent years provides a suitable setting for testing the relative bargaining power of these players on issuers. Top underwriters charge lower fees, while an ambiguous result is expected with the discount (H5A, underwriter reputation hypothesis). Issuers with a weak bargaining position relative to the underwriters pay higher fees due to their lack of power in negotiating costs (H5B, bargaining power hypothesis).

The issue of company's weak bargaining position has been also raised in the recent OFT study. According to OFT, issuers lack experience in the equity raising process and often fail to negotiate the prices they are asked to pay for equity underwriting services. Lack of experience may be due to the size of the company or lack of regular use of capital markets. We thus predict that issuers with regular equity activity are more familiar with the process, maintain better relationships with investment banks and can be more effective in negotiating fees and discounts with their underwriters. Recently, Huang and Zhang (2011) control for frequent issuers in a sample of US SEOs that excludes, among others rights, and they find a negative relation between frequent issuers and the discount. We consider the following hypothesis concerning the issuers' experience. Relatively recent capital raising experience allows issues to negotiate lower fees or set lower discount (H6, issuers' experience hypothesis).

4. Data sample

Our primary source of data for seasoned equity issues between 2000 and 2010 is the London Stock Exchange website (Statistics, 'further issues summary' file). We also use this file to obtain sector, subsector, issue price and money raised. Perfect Information database provides

scanned prospectuses and regulatory news of the issues; prospectuses are used to double-check the definition of the flotation method[3] and to hand-collect data on fees. When the prospectus is not available, we drop the issue from the sample (e.g. Toronto-Dominion bank (01/11/2001) and Koninklijke KPN N.V. (12/12/2001)). Regulatory news UK documents provide the data on the subscription rate post-offer. We double-check rights issues from 2000 to July 2008 larger than £100 million using the 'Report to the Chancellor of the Exchequer' (November, 2008). In case of differences in discounts or closing prices between the Report and the prospectus, we use the latter (e.g. Bradford and Bingley).

We use DataStream as the main source of data for earnings before interest and taxes, interest expense on debt, ICB (Industry Classification Benchmark) code and daily price data for the VFTSE and FTSE all-share index with the aim to measure market volatility in alternative ways. VFTSE reflects market expectations of the future monthly volatility of the UK benchmark equity index FTSE100, which comprises the 100 largest companies on London Stock Exchanges and represents 80% of the UK market.

Thomson one banker is used to source (at the closest quarter before and post, the announcement date) for shareholders: name, type, subtype, country, turnover and ownership. Risk Measurement Service published by London Business School's Institute of Finance and Accounting (Dimson and Marsh, 1993-2009) provides (at the closest quarter before the announcement date) beta, specific risk, annual abnormal return and standard deviation of returns on the share. We check the definition of the flotation methods as described in Appendix B. Detailed information on the data collected from the prospectuses on corporate announcements, the use of proceeds and how we deal with the underwriters' name are also reported in Appendix B.

Table 1 provides details for our sample selection criteria. We begin with all seasoned equity issues on London Stock Exchange from 2000-2010. We apply several filters to exclude AIM-quoted companies and announcements different from rights issues or open offers, pure or

3 From prospectuses, open offers are also defined with the term 'placing with clawback', when new shares are bought by existing holders and are said to be 'clawed back' from the placees; or 'placing and open offer', when shares are conditionally placed with new investors subject to existing shareholders exercising their rights to apply for new shares. Conversely, open offer (and rights issues) are combined with a placing when placees commit unconditionally to acquire the shares. Specifically, existing shareholders may renounce their entitlements in advance before the issue is publicly announced and these share are called 'placed firm' and can be placed without subject to clawback. In other cases, rights issues or open offers can be accompanied by a private placing of shares, which will not be offered pro rata to existing shareholders and will not be part of the rights issue or open offer.

combined with a placing. Our final sample consists of 226 SEOs with no missing data on underwriting fees. We further exclude two more issues from the full regressions due to missing data on take up post-offer and annual abnormal return.

Table 2 reports sample characteristics for the full period and across the two sub-periods, pre and post financial crisis (2000-2007 vs 2008-2010); it also shows disaggregated statistics for rights issues and open offers as well. For both flotation methods, we include pure issue and issue eventually combined with a placing, according to whether any shares were placed firm before the announcement.

A number of points are worth noting. First, both the number of issues raising capital and the size of some of their transactions increased markedly after the financial crisis. Over the short period 2008-2010, the average amount raised by the 128 issues was in excess of £1 billion in comparison to the equivalent less than £400 million raised by 110 issues during 2000-2007. Second, rights issues are both much larger in volume and much higher in number than the other type of offer; these findings are in line with the IIC inquiry and the OFT report. Third, there is a significant increase in both types of flotation methods over the years 2008-2010. Whereas, between 2000 and 2007, there are fewer than 10 rights issues (5 open offers) per year raising less than £70 million (£15m) on average; over the years 2008-2010, there were more than 20 rights issues (open offers) which raised more than £500 million on average (£200) in each year. Fourth, the trend in the estimated total expenses[4] reflects an increase of 1% of the total proceeds after the financial crisis. Finally, while the main reason for equity issues declared in the prospectus before the financial crisis is acquisition, the majority of the equity issues taking place after late 2007 are related to the need of balance sheet restructuring.[5] Appendix E shows the correlations among explanatory variables for the two periods before and after the financial crisis.

Insert Table 1 near here

Insert Table 2 near here

5. Empirical tests and results

4 The prospectus includes under the section 'Summary' or 'Additional Information' an estimation of the total costs and expenses of, and incidental to, the offering (including usually the listing fees of the FSA, professional fees and expenses, the costs of printing and distribution of documents) payable by the Company.

5 The prospectus reports the reason of issue under the section 'Use of (net) proceeds' or 'background to and reason for [...]' or 'Notes about the reason or the use of the proceeds'.

In this section, we discuss the empirical methodology used to test our hypotheses and report our results. Section 5.1 presents the results of our empirical tests regarding the impact of financial crisis on SEO underwriting fees and discount. In section 5.2, we study what drives underwriting fees and discount taking the institutional shareholders and the investment bank perspective, and whether the financial crisis may have changed the behaviour of such players. In section 5.3, we analyze the behaviour of the top underwriters across the two sub-periods, pre and post financial crisis.

5.1 The impact of financial crisis on underwriting fees and discount

Table 3 presents sample descriptive statistics for the full period 2000-2010 and across two sub-periods: 2000-2007 and 2008-2010 (pre and post financial crisis). Our univariate results suggest that the financial crisis had a significant impact across the entire landscape of the equity issuing process. The values for all but three (our proxies for distress, for ownership held by large shareholders and for ownership held by domestic shareholders) of the 18 variables shown in the table change significantly over the years 2008-2010. After 2007, the demand for underwriter services in terms of average capital raised increased significantly from £297 million to £1.2 billion. Throughout the financial crisis, both gross underwriting fees and discount rates increased markedly. Whereas between 2000 and 2007, the mean (median) of gross underwriting fees is 3.2% (3%) and that of discount is 27.2% (27%), during the 2008-2010 period, fees reach a mean (median) value of 3.9% (4%), while the discount 40.50% (45%). In terms of structural features, market volatility is higher after the financial crisis (29% versus 18%), while the degree of concentration in the investment bank industry, decreases (0.10 versus 0.16). After 2007, issuers tend to choose more frequently open offer as a flotation method (47% versus 35%), are likely to belong to financials sector (38% versus 18%) and are characterized by lower performance of the share over the past year (-0.16 versus 0.12). Finally, investment banks appear to have strengthened their bargaining position in relation to the issuers (at 1% level), but there is not a significant difference across the two sub-periods on the ownership held by large or domestic shareholders. Our results are consistent with recent reports. The IIC inquiry and the OFT report both show higher levels of fees and discount after the financial crisis. More specifically, both fees and discount to TERP become higher and clustered around 3-4% and 30-40% respectively, while the historical average before 1999 was around 2% for fees and 12-15% for discount. Our

results on market volatility and degree of concentration are consistent with the OFT study. The report shows an increase after 2007 and a pronounced fall during 2009 for market volatility (Fig. 5.7 pp.54 OFT, 2011); and supports that concentration does not appear to be unduly high. We document an increase in the open offer flotation method, accordingly with the OFT report evidences obtained using a sample on FTSE 350[6] companies (Fig. 5.4 pp. 45).

Insert Table 3 near here

To further investigate whether the impact of financial crisis on fees and discounts, we conduct the following multivariate ordinary least squares (OLS) regression on the relation between the gross underwriting fees (or the discount) and demand of underwriters' service, concentration of the investment banking industry and the post-crisis dummy, controlling for the traditional determinants about the SEO_i:

$$Y_i = \alpha + \beta_1 Open\ offer + \beta_2 Take\ up + \beta_3 Size + \beta_4 Relative\ size + \beta_5 Annual\ abnormal\ return + \beta_6 Mkt\ volatility + \beta_7 Distress + \beta_8 Financials + \beta_9 Post2007 + \beta_{10} Demand + \beta_{11} Concentration + \varepsilon \quad (1)$$

where Y_i is *Gross underwriting fees*, defined as fees paid to the banks, broker, investing institutions, existing shareholders and/or placees (including underwriting fees and sub-underwriting fees), or *Discount*, defined as the offer price discount in relation to the market price as at the day before the announcement. *Open offer*, *Distress*, *Financials* are dummy variable taking a value of unity for open offer issues, for issues with interest cover ratio (EBIT over the Interest Expense on Debt) less than one, and for financial issuers (1-digit ICB industry equals 8), respectively. *Take up* is the existing shareholders percentage of valid acceptance after the issue; *Size* is the inverse of the natural logarithm of the 2010 inflation-adjusted (m£) value of the gross proceeds of the issue, while *Relative size* is defined as market capitalization of the issuer at the date of the SEO divided by the gross proceeds. *Annual abnormal return* is the performance of the share over the past year, while *Market volatility* is measured as the UK implied volatility

6 FTSE 350 is the stock market index incorporating the largest 350 companies by capitalisation, which has their primary listing on the London Stock Exchange.

index (VFTSE)[7] 30 days before the announcement date. To account for the market condition after the financial crisis we include three different proxies. First, *Post2007* is a dummy variable taking value of one for issues whose announcement year is 2008, 2009 or 2010. Second, *Demand* is the natural logarithm of the sum of gross proceeds (adjusted for inflation) yearly based, and represents the demand of underwriting services. Third, *Concentration* is the Herfindahl index, defined as the sum of squares of the market shares of underwriters in terms of proceeds. We equally split proceeds in case of co-leads (Abrahamson et al., 2011).

Table 4 presents the regression results in four specifications, for both gross underwriting fees and discount, that all include traditional determinants. The first specification also includes the dummy *Post2007* to control for the post financial crisis period. The second and third specifications include our proxy for demand and concentration, respectively. Finally, the fourth specification includes both demand and concentration, to shed further light on the effect of demand, concentration and post-crisis dummy.

With respect to the traditional variables (issuer size, proceeds and relative size), our evidence is consistent with both previous studies and recent evidences. More specifically, due to economies of scale underwriter fees are higher for smaller issues, while the coefficient of relative size is negative. This evidence supports that for relatively greater issues, underwriters' costs increase and more certification is needed to offset the adverse selection effect (Altinkilic and Hansen, 2000; Drucker and Puri, 2005). Consistently with Armitage (2000), we find that gross underwriting fees do not depend on the flotation method. Also, in line with Armitage (2010) we find that rights issue discounts are significantly (at 1% level) deeper with a mean value of 55% than those for open offers with a mean value of 24% (unreported results). This is because according to the UK Listing Rule (9.5.10 and 9.5.10(3)), new shares issued in open offers cannot be discounted more than 10% to the current share price without shareholders' approval. The coefficient of the take up variable is significant and positive with discount but not with fees. Our interpretation of this result relies on the increasing focus of the issues mainly on speed, confidentiality and successful take-up as recently suggested by the Office of Fair Trading (2011). As expected, market volatility significantly increases the discount, despite its not significant relation with gross underwriting fees. With regards to firm characteristics, similarly with Suzuky

7 VFTSE reflects the market expectations of the future monthly volatility of the UK benchmark equity index, FTSE100, which comprises the 100 largest companies on London Stock Exchanges and represents 80% of the UK market.

(2010), who finds for the Japanese market that the discount is negatively related to the cumulative market adjusted return one week prior to the offer, we find that issues with higher performance of share over the past year negotiate better fees. Instead, issuers in distress have an opposite effect on fees. Overall, our findings show a worse effect on fees and/or discount for lower quality firms, consistently with previous studies (Kim et al., 2010).

To examine the impact of the financial crisis, we include a dummy variable that captures the post-crisis period (*post2007,* 2008-2010). Table 4 shows the effects of the post-crisis dummy, the demand and the concentration variables on both gross underwriting fees and discount. The post-crisis dummy and the demand are both significantly and positively related with fees and discount (at 1% level). Instead, the degree of concentration in the investment bank industry, results negatively related with both fees and discount. With the aim to investigate further the substitutive effect between demand and concentration, we include both variables in the regressions on fees (model 4) and discount (model 8). We find that the demand for underwriters' services remains significantly and positively related with both fees and discount, while the concentration in the investment bank industry is not significant. With respect to former results by Kim et al. (2010), the degree of concentration of the investment bank industry is significantly related with the demand of underwriters' services. The correlation between demand and the investment bank concentration is indeed negative and significant at 1% after the financial crisis, suggesting a substitutive role of these variables (Appendix A.5, Panel B). In presence of excess of demand together with an imperfect competition, opportunistic behaviours may occur. If only a limited number of providers are available to meet a large demand, the result would be excess demand that must be rationed in some way, such as the entry of several new suppliers, in a monopolistically competitive market (a modified oligopolistic model, as in Carlton and Perloff, 2005). Consistent with Fernando et al. (2005), issuers and underwriters associate by mutual choice, and the level of market activity affects the market share of high ability underwriters. As a result, in markets that are more active, less reputable underwriters will have a higher probability of matching with an issuer. The OFT report supports this prediction showing that there has been a significant growth in the shares of smaller corporate brokers (pp 47-48). As a result, we interpret our coefficient for the degree of concentration in investment bank industry as capturing this effect, negatively related with demand and, consequently, with fees. In terms of structural features, we do not find any material evidence to raise concerns about the competitiveness of the

investment banking industry supporting the OFT's viewpoint, but in contrast to our investment bank concentration hypothesis (H4).

Insert Table 4 near here

5.2 Determinants of gross underwriting fees and discount

In this subsection, we empirically study the role of institutional shareholders and of investment banks in setting SEO underwriting fees and discount, taking explicitly into account the impact of the financial crisis. Table 5 presents multivariate results on the relation between ownership and turnover characteristics of shareholders or reputation and bargaining power of underwriters, and both fees (Panel A) and discount (Panel C), controlling for traditional determinants. We run different specification of the following regression:

$$Y_i = \alpha + \beta_1 Discount + \beta_2 Open\ offer + \beta_3 Take\ up + \beta_4 Size + \beta_5 Relative\ size + \beta_6 Annual\ abnormal\ return + \beta_7 Mkt\ volatility + \beta_8 Distress + \beta_9 Financials + \beta_{10} Demand + \beta_{11} Conflict\ of\ interest + \beta_{12} Ownership\ UK\ sh. + \beta_{13} Ownership\ large\ sh. + \beta_{14} Top\ UW + \beta_{15} Bargaining\ power + \beta_{16} Experience + \varepsilon, \quad (2)$$

where Y_i is *Gross underwriting fees* in Panel A and *discount* in Panel C (in these regressions discount is excluded as explanatory variable). *Discount*, *Open offer*, *Take up*, *Size*, *Relative size*, *Annual abnormal return*, *Market volatility*, *Distress*, *Financials*, *Demand* are as previously described in section 5.1 or data Appendix A. To build the *Conflicts of interest* variable we take for each issuer *i* the increase in stake by the institutional shareholders times their weighted turnover. Specifically, for each shareholder the weighted turnover is defined as the turnover times the ownership pre-offering; while the increase is calculated as the difference between post and pre ownership at the closest quarter before and post the announcement date, and is set to 0 in case of negative difference. *Ownership UK sh.* is the proportion of the issuer's shares held by domestic (UK) shareholders measured at the closest quarter before the announcement date; *Ownership large sh.* is the proportion of the issuer's shares held by shareholders with stake greater or equals 10% measured at the closest quarter before the announcement date; *Top UW* is a dummy variable set to one if at least one of the lead underwriter(s) of the issue is one of the top 5 underwriters ranked by market shares based on proceeds; *Bargaining power* is defined as the

ratio between the sum of proceeds of issuers handled by each underwriter, yearly based, over the proceeds of the deal of interest (we consider the mean of proceeds among all co-leads). Finally, *Experience* is the natural logarithm of gross proceeds adjusted for inflation times one if the issue has had at least two issues among the sample, zero otherwise.

The coefficients of the traditional variables are generally consistent with previous studies on the SEO fees and discount. In particular, the results already discussed previously in section 5.1 remain the same with two marginal exceptions. *Financials* dummy is now mostly not significant, and *Market volatility*, positive and significant with discount in Table 4, is now not significant in all regressions. Our results suggest that despite the increase in market volatility during the financial crisis, the country and the investment horizon of institutional shareholders and underwriters' reputation are important determinants for the setting on both underwriting fees and discount.

In Panel A, regression 1 relates gross underwriting fees with traditional determinants and variables motivated by our hypotheses. The coefficient on the *Conflicts of interest* is positive and strongly significant, meaning issuers with institutional shareholders who increase their stake in the issuer and with shorter investment horizon are charged higher fees (supporting H1, conflicts of interest hypothesis). Potential conflicting interests for institutional shareholders may rise due to their twin roles as both investors and sub-underwriters. A one standard deviation increase in conflicts of interest variable boosts the SEO fees by 16.2%. In contrast, we do not find support for the exposure to UK equity hypothesis (H2): the coefficient of the ownership held by domestic shareholders is indeed not significant with fees. In line with the monitoring services argument, we find weak support (the coefficient is significant at 10%) for the hypothesis that issuers with higher ownership held by large shareholders (stake greater or equals 10%) have lower fees (H3, large shareholders hypothesis).

Dealing with the investment bank perspective, the coefficient on the reputational capital of underwriters is negative and statistically significant (supporting H5A, underwriter reputation hypothesis), consistently with the certification hypothesis (Booth and Smith, 1986) and empirical studies (Kim et al., 2010; Lee and Masulis, 2009). Underwriters with a stronger bargaining position relative to the deal underwritten are able to charge significantly higher fees (supporting H5B, bargaining power hypothesis). In contrast, the coefficient for the experience of issuers is not statistically significant but it has the expected negative sign with fees, meaning that

companies with greater experience in raising equity capital are likely to negotiate better underwriting fees.

In regression 2, we aim to analyse the role of conflicts of interest for issues before and after 2007. We do this, by including two interaction terms between the conflicts of interest variable and two dummy variables: *Post2007* and *Pre2007* that take value 1 if the issue is after or before the end-year 2007, respectively. The results show that the coefficient of the interaction between *Conflicts of interest* and *Post2007* variables is positive and significant at 5%, while the interaction between *Conflicts of interest* and *Pre2007* (dummy variable that takes a value 1 if the issuer has undertaken the SEO over the years 2000-2007) is not significant, but still positive. Hence, the effect of potential opportunistic behaviours by institutional shareholders is concentrated after the financial crisis. With the same approach as in regression 2, regression 3 includes interaction terms for the top underwriters dummy to examine whether the SEO fees relate to reputable underwriters in a similar manner in both pre and post financial crisis. The coefficients of both interaction effects are negative but significant only over the years 2000-2007, suggesting that the effect that reputable underwriter lower fees is driven by the years up to 2007. Regression 4 employs the same approach for the variable *Bargaining power*. We find that stronger the bargaining position for investment banks relative to the deal handled, higher the fees despite the period considered. The coefficients on both interaction effects (pre and post financial crisis) with our proxy for the bargaining power are positive and significant with fees, with a stronger effect for the years after 2007 (at 1% and 10% level post and pre financial crisis, respectively).

In Panel C, regression 1 relates discount with traditional determinants and variables motivated by our hypotheses. From the issuer corporate governance perspective, the coefficient of *Conflicts of interest* is positively related with discount, statistically (at 1% level) and economically significant. A one standard deviation increase in *Conflicts of interest* boosts the SEO discount by 15.3%, supporting further H1 (conflicts of interest hypothesis). While we do not find support for the monitoring hypothesis (H3, large shareholders hypothesis), we document that higher ownership by domestic shareholders significantly lowers the discount. Hence, a higher exposure by UK shareholders reduces the discount and goes in the same direction as predicted by H2 (exposure to UK equities hypothesis), consistently with the IIC inquiry. From the underwriter perspective, the coefficient on the bargaining power is positive as expected.

Again, the coefficients on both reputable underwriters and experience variables are positive, but neither coefficient is significant. As in Panel A and previously described, we further investigate whether the significant effects found are attenuated or become stronger before or post crisis. Regression 2 shows that the effect of the conflicts of interest hypothesis is concentrated after the financial crisis; while regression 3 shows that the effect of the presence of domestic shareholders is significantly related with discount in both sub-periods.

Kim et al. (2010) have recently shown that fees and discount are endogenously determined in a sample of US SEOs. As per Table 4 we do not find significance in the relation between discount and fees in full regressions. However, to control for the endogeneity issue, we estimate a 3SLS regression of fees and discount (unreported results). In order to identify valid instruments we find in the first stage those variables that affect discount but not fees and vice versa. In our system of equations, we find the size of the issue to be related with both fees and discount as in Kim et al. (2010) but in contrast to Ljungqvist (2003). We find that the ownership held by large shareholders is negatively related with fees and not statistically related with discount rate. The same but with an opposite sign for the standard deviation of percentage returns on the share (monthly return over the previous five years). This allows us to include them as valid instruments for gross underwriting fees. Similarly, the take up ratio and the ratio of new primary shares over the shares post-offering are instead related with discount with a positive sign, and not with fees. This leads us to include them as valid instruments for discount. When comparing the results on the variables derived from our hypotheses for both the OLS (which assumes exogeneity) and the 3SLS regressions (which allows joint endogeneity), our results and considerations discussed in this section hold.

Another question related to the literature on SEO flotation costs is whether co-managers have any effect on fees or discounts. Two recent studies provide insights on this issue. Jeon and Ligon (2011) find a quadratic (first increasing then decreasing) relation between the number of co-managers and spreads and interpret this result as the presence of synergies among underwriters. They also document significant lower spreads and underpricing when highly reputable underwriters serve as co-managers, suggesting an increase in the quality of certification. Zhang and Huang (2011) document similar findings, showing a decrease in the incremental impact on the gross spread. Concerning the discount, they find a negative relation between co-managers and discount and interpret this result as the underwriters' marketing efforts

hypothesis that leads to shift up and flatten the demand curve of an SEO. First, we find at 1% level a higher number of co-lead underwriters post financial crisis (2.7 versus 1.5), similarly to the mean trending upward documented by Zhang and Huang (2011) for a US sample over the period 1995-2004. Second, we include the natural logarithm of the number of co-lead underwriters as additional variable in Panel A and Panel C of Table 5. In contrast to Zhang and Huang (2011) we find a not significant relation between fees and the natural logarithm of co-lead underwriters, while issuers with higher number of lead underwriters tend to have higher discount significant at 10%. This effect is mostly concentrated after the financial crisis (the interaction term between the natural logarithm of the number of co-leads and the dummy post2007 is positive and significant at 1%, while the interaction between the natural logarithm of the number of co-leads and the dummy pre2007 is not significant but still positive).

Finally, we re-run the regressions 1 of Panel A and Panel C in Table 5 using alternative model specifications. First, we include the concentration variable. Our results hold with both fees and discount. Second, we substitute market volatility with *Beta* and *Specific risk*, taken from Dimson and Marsh's Risk Measurement Service. We find both beta and specific risk positively related with fees but not with discount. Finally, we alternatively measure our proxy for conflicts of interest as the increase in stake by the institutional shareholders times their turnover. Our results on other variables are robust to these checks.

5.3 Top underwriters across the two sub-periods

To examine further the behaviour of reputable underwriters, we investigate the joint effect of the discount on fees across the two different sub-periods, pre and post financial crisis. In Panel B, regression 5 relates gross underwriting fees with traditional determinants and variables motivated by our hypotheses over the years 2000-2007, while the same regression (regression 6) is also run over the years 2008-2010. The fees determinants are the same as previously described as per regression 1 in Panel A (Table 5). We further include the interaction between *Top UW dummy* and *Discount*. The coefficient of this variable is positive and significant in regression 5, while becomes negative and still significant in regression 6. The motivation for this analysis relies on the puzzling evidence on the role of underwriters, particularly on their reputation.

To explore further this result, we graph in Figure 1 the predicted values of the discount of top underwriters over the period 2000-2007 versus the years 2008-2010. *Discount* × *Top UW*

dummy is the interaction between *Discount* and *Top UW dummy*, previously described. The Figure shows a downward sloping line for the years 2000-2007 and an upward slope for the years 2008-2010. Thus, while over the period 2000-2007 discount and fees of a top underwriter are negatively related, in the sub-period 2008-2010 they become positively correlated.

Insert Table 5 near here

Insert Figure 1 near here

6. Conclusions

In this paper, we investigate the surge in both SEO fees and discounts during the period 2008-2010, an increasingly debated issue among the financial press and regulators. Our main contribution to the existing literature relies on the analysis of potential conflicts of interest between issuers or institutional investors and underwriters that intensified during the financial crisis. Since 2008, changes both in the number of issuers raising capital and in the size of some transactions characterized the UK capital-raising industry. During the short period 2008-2010, 128 issuers raised an average of £1.14 billion in comparison to the equivalent average of £400 million by the 110 issuers during 2000-2007.

In terms of structural features, the financial crisis had an immediate and profound effect on fees and discount: the dummy variable for the post financial crisis period together with the demand for underwriter services are strongly correlated each other's and significantly increase both fees and discount. The degree of investment bank concentration appears not to be an issue as the OFT concludes. More specifically, we find that the degree of concentration is negatively related with both fees and discount (Table 4). The effect on concentration is lost when we include this variable together with demand, supported by the negative and significant correlation between these two variables. Our interpretation relies on the association of issuers and underwriters, in which (as modelled by Fernando et al., 2005) the level of market activity affects the market share of high ability underwriters. During such increase in demand, together with a limited availability of equity underwriting capacity (OFT, 2011, pp. 42), new entrants may join the market (a modified oligopolistic model, Carlton and Perloff, 2000). As a result, in markets that are more active, less reputable underwriters may have a higher probability of matching with an issuer. In Appendix C and Appendix D we list the top ten underwriters considering their market shares using both value (by proceeds) and equal-weighted (by number of SEOs) metrics.

As predicted, we do not find a strong concentrated market. The market share of the top three banks is under 40% considering both approaches.

In terms of important issues surrounding the role of institutional shareholders and the role of investment banks, our results can be summarized as follows. First, we find support for potential conflicting interests for institutional shareholders (H1). The positive coefficient between the increases in stake by institutional investors weighted for their turnover is positive and significant with both fees and discount. In other words, the presence of institutional investors with shorter investment horizon, who can act as potential sub-underwriters, pushes fees and discounts for higher gain in fees and less risk related to the offer. Second, while we find support for the monitoring hypothesis (H3, large shareholders hypothesis) on underwriting fees over the years 2000-2007, the domestic ownership coefficient is significant in both sub-periods on SEO discount and negative in sign. Hence, issues with a larger proportion of stake held by UK shareholders are likely to reduce discount (partially supporting H2, exposure to UK equities hypothesis). This finding is in line with the issue raised by the IIC inquiry that highlights a shift after the financial crisis towards higher foreign investors, who are less willing or less able to underwrite. Third, regarding underwriter characteristics, the positive and significant coefficient of our proxy for bargaining position of investment banks relative to the issuer underwritten with the SEO fees supports H5B (bargaining power hypothesis). Fourth, consistently with previous literature (Kim et al. 2010; Lee and Masulis, 2009), reputable underwriters charge lower fees. Interestingly, we find that after the financial crisis top underwriters are instead able to increase both fees and discount, in contrast to the prediction of the model developed by Fernando and Gatchev (2005) that reputable underwriters lower fees but earn higher revenues from their clients through larger and more frequent security issues.

A. Definition of the variables used in this study

Table A.1 includes the definition of the variables used in this study

Insert Table A.1 near here

B. Data construction

We apply various checks to data. With respect to flotation method, we correct of some anomalies. For example, Alexon group (05/03/2010), Hampson Industries (02/02/2010), Sportech (26/01/2010) and Vernalis (11/02/2010) are not present in LSE but included into the sample being defined as 'placing and open offer' according to the prospectus. HSBC Infrastructure has been eliminated resulting as a 'placing' in LSE but 'placing and offer for subscription' following the prospectus. Skyepharma (01/09/2008), Sportech (07/11/2007), UK Coal (16/09/2009) and Unite Group (17/09/2009) are defined as 'placing' in LSE but 'placing and open offer' according to the prospectus, and in this way included into our database as 'open offer'.

When corporate announcements (other than SEO) results in the first page of the prospectus, we categorize them into: (1) acquisition, (2) change of listing, (3) additional funds (placing/warrants/further issue/cash issue), (4) capital reorganization or share consolidation. We hand-collect from prospectuses the reason of issues as reported in the section 'Use of (net) proceeds' or 'background to and reason for [...]' or 'Notes about [...]'. We categorize the reasons into three groups: (1) Acquisition (e.g. 'Nestor intends to use the proceeds of the Rights Issue, amounting to £30.4 million (net of expenses primarily to fund its acquisition strategy'), (2) Balance sheet repair (e.g. Avis Europe, 'The Rights Issue will significantly strengthen the Group's balance sheet'), (3) Capital investment programme or growth opportunities (e.g. 'The funds raised [...] are expected to provide the Company with flexibility to take full advantage of such opportunities as they arise').

With respect to underwriters, we correct the names as follows.[8] First, we check for variations in spelling, punctuation marks, capital letters or abbreviation. For instance, Altium Capital Limited and Altium is the same bank. Second, we consider banks that are acquired as part of their new parent. For example, Bridgewell Securities was acquired in 2007 by Landsbanki Islands (now in moratorium) as a result of the acquisition of Bridgewell Group.

[8] Full details are available from the authors.

C. Top ten underwriters by proceeds

Sample contains 226 rights issues and open offers spanning the period 2000-2010 where gross underwriting fees are available. 5 issues are dropped from the original sample being not underwritten, while 7 issues do not report costs data. SEO proceeds are adjusted for inflation and expressed in 2010£m. This Table reports the top 10 underwriters ranked by proceeds for the all sample and by flotation methods. We consider rights issues (pure or combined with a placing) and open offers (pure or combined with a placing). We sum the total proceeds according to the underwriter(s), and calculate the market share over total proceeds. We include the deals transacted by underwriters that were acquired during the sample period into the total for the parent investment bank. The reported gross underwriting fees value is the simple (unweighted) average across all the issues conducted by each investment bank. See Appendix B for details on underwriter name.

Insert Table C.1 near here

D. Top ten underwriters by number of SEOs

See legend of Table C.1. This Table reports the top 10 underwriters ranked by number of issues for the all sample and by flotation methods. See Appendix B for details on underwriter name.

Insert Table D.1 near here

E. Correlations among explanatory variables

Correlation coefficients among the explanatory variables are reported for the two periods before (in Panel A) and after (in Panel B) the financial crisis; ***= $p<0.01$, **=$p<0.05$, *=$p<0.1$

Insert Table E.1 near here

Insert Table E.2 near here

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Table 1
Sample selection criteria.

Criterion	Number
SEOs on LSE from 2000-2010, less AIM-quoted companies, transaction not as pure or combined rights issues or open offers:	
Rights issues and open offers from 2000-2010	238
Issues not underwritten	5
No disclosure of underwriting fees in the prospectus	7
Final sample	226
Missing take up and annual abnormal return	2
Final reduced sample	224

Table 2
Sample characteristics. The sample contains 238 rights issues and open offers eventually combined with a placing. This table shows sample characteristics for the full period and across the two sub-periods (pre and post financial crisis). In addition to total figures, disaggregated figures for two flotation methods are reported: rights-issue and open offers, both eventually combined with a placing (in other word, whether any shares were placed firm before the announcement). Market capitalization, expenses and proceeds are adjusted for inflation and expressed in 2010£m. The variable is as follow, Market cap is the market capitalization of the issuer at the date of SEO. Proceeds is the total offer proceeds. Exp is the estimated expenses reflecting the total costs of the issue taken from the prospectus expressed in both £ million and as a percentage of the total proceeds. Financials is the proportion of financial issuers based on the Industry Classification Benchmark (1-digit code equals to 8). Other announcements is the proportion of issues which are accompanied by major corporate announcements, such as named acquisitions, a change of listing, additional funds, capital reorganization or share consolidations. Acquisition or Balance sheet or Investment is the proportion of issuers with respectively 'acquisition' or 'balance sheet repair' or 'investment program or growth opportunities' as the reason declared in the 'use of proceeds' section of the prospectus.

		Full period			2000-2007			2008-2010		
		All	RI	OO	All	RI	OO	All	RI	OO
No. of issues		238	139	99	110	72	38	128	67	61
Market cap (£m)	Mean	1,259.40	1,615.87	758.83	509.97	686.43	177.23	1,864.94	2,545.31	1,103.8
	Median	153.41	244.21	98.57	154.98	217.48	128.97	144.85	314.71	75.62
Proceeds (£m)	Mean	785.58	1,015.11	463.31	371.84	512.27	105.77	1,141.14	1,555.48	686.05
	Median	123.12	220.56	51.67	118.77	155.57	44.38	150.61	263.52	59.50
Exp (£m)	Mean	24.62	34.06	11.37	10.78	13.96	4.74	36.52	55.66	15.50
	Median	6.06	9.30	3.16	4.43	6.14	2.56	7.28	14.00	3.31
Exp (%)	Mean	5.74	5.08	6.67	5.38	4.82	6.45	6.05	5.36	6.80
	Median	5.00	5.00	6.00	5.00	4.00	6.00	5.00	5.00	6.00
Financials (%)		27.73	59.09	40.91	7.98	63.16	36.84	19.75	57.45	42.55
Other announcements (%)		36.55	58.62	41.38	23.11	67.27	32.73	13.45	43.75	56.25
Use of proceeds:										
Acquisition (%)		27.31	70.77	29.23	20.17	72.92	27.08	7.14	64.71	35.29
Balance sheet (%)		44.12	56.19	43.81	12.18	51.72	48.28	31.93	57.89	42.11
Investment (%)		35.71	52.94	47.06	18.07	65.12	34.88	17.65	40.48	59.52

Table 3

Univariate analysis. This table provides difference of means and medians tests between pre and post financial crisis periods. The variable is as follows, Annual abnormal return is the performance of the share over the past year. Bank and broker fees are fees paid to banks and brokers (additional fees, corporate finance fee, documentation fee, advisory fee or further placing commission). Bargaining power is the ratio between the sum of proceeds of issuers yearly handled by each underwriter over the proceeds of each deal. Concentration is the Herfindahl-Hirschman index defined as the sum of the squared annual lead banks market share, computed using proceeds of SEOs handled by each underwriter. Conflicts of interest refer to the increase in stake by institutional shareholders times their turnover weighted for their ownership pre-offering. Demand is the natural logarithm of the sum of gross proceeds yearly based. Discount is the offer price discount in relation to the market price as at the day before the announcement. Dummy variable Distress takes value 1 for issues with interest cover ratio less than one. Experience is the natural logarithm of gross proceeds times one if the issue has had at least two issues among the sample, zero otherwise. Dummy variable Financials takes the value 1 for all financial issuers, 1-digit ICB code (Industry Classification Benchmark). Gross underwriting fees is defined as fees paid to the banks, broker, investing institutions, existing shareholders and/or placees. Market volatility is the VFTSE index 30 days before the announcement date. Open offer is a dummy variable which takes the value 1 for open offer issues. Ownership large sh. is the proportion of the issuer's shares held by shareholders with a stake ≥10% measured at the closest quarter before the announcement date. Ownership UK sh. is the proportion of the issuer's shares held by domestic shareholders measured at the closest quarter before the announcement date. Proceeds is the 2010 inflation-adjusted (m£) value of the gross proceeds of the issue. Takeup is the existing shareholders percentage of valid acceptance after the issue. Dummy Top UW takes the value 1 for issues with at least one of the lead underwriter(s) among the top 5 underwriters ranked by market shares based on proceeds. Test statistics are t-test results for difference in means or z-test results of equal proportions as required, and Wilcoxon test statistics (ranksum) for the difference in median. ***= $p<0.01$, **=$p<0.05$, *=$p<0.1$

Table 3—*Continued*

		Full period	2000-2007	2008-2010	T/z-statistics Wilcoxon-statistics
Annual abnormal return	Mean	-0.03	0.12	-0.16	3.43***
	Median	-0.15	0.06	-0.24	5.51***
Bargaining power	Mean	11.53	2.50	18.82	-4.74***
	Median	2.56	1.20	6.14	-6.46***
Banks and brokers fees (%)	Mean	3.06	2.53	3.49	-5.21***
	Median	3.25	2.50	3.50	-4.71***
Concentration	Mean	0.13	0.16	0.10	14.13***
	Median	0.12	0.15	0.09	13.22***
Conflicts of interest (%)	Mean	1.02	0.59	1.38	-1.95*
	Median	0.24	0.27	0.21	0.053
Demand	Mean	9.68	8.16	10.91	-41.89***
	Median	10.09	8.04	11.10	-13.22***
Discount (%)	Mean	34.55	27.18	40.50	-4.50***
	Median	35.00	27.00	45.00	-4.43***
Distress dummy	Mean	41.15	41.58	40.80	0.12
	Median	1	0.00	0.00	0.12
Experience	Mean	1.03	0.74	1.26	-1.73*
	Median	0.00	0.00	0.00	-1.47
Financials dummy (%)	Mean	27.31	17.82	37.6	-3.33***
	Median	0.00	0.00	0.00	-3.26***
Gross underwriting fees (%)	Mean	3.62	3.21	3.96	-4.15***
	Median	3.75	3.00	4.00	-3.99***
Market volatility	Mean	0.24	0.18	0.29	-9.81***
	Median	0.22	0.15	0.26	-9.46***
Open offer dummy (%)	Mean	41.59	34.65	47.20	-1.90*
	Median	0.00	0.00	0.00	-1.90*
Ownership large sh. (%)	Mean	16.98	17.01	16.95	0.02
	Median	12.32	12.21	12.43	-0.09
Ownership UK sh. (%)	Mean	48.28	48.51	49.66	-0.36
	Median	48.45	48.11	49.71	-0.65
Proceeds (£m)	Mean	777.79	297.13	1,166.17	-2.71***
	Median	121.94	104.00	155.00	-2.20**
Take up (%)	Mean	79.42	82.00	77.32	1.38
	Median	91.00	92.00	90.00	1.17
Top UW dummy (%)	Mean	50.00	41.58	56.80	-2.27**
	Median	50.00	0.00	100.00	-2.27**

Table 4

Cross-sectional regression analysis of UK SEO fees and discount. The dependent variable, gross underwriting fees, is defined as fees paid to the banks, broker, investing institutions, existing shareholders and/or placees, discount, is the offer price discount in relation to the market price as at the day before the announcement. The independent variable is as follows, Open offer is a dummy variable, which takes the value 1 for open offer issues. Takeup is the existing shareholders percentage of valid acceptance after the issue. Size is the inverse of the natural logarithm of the gross proceeds of the issue. Relative size is the market capitalization at the date of the SEO divided by the gross proceeds. Annual abnormal return is the performance of the share over the past year. Market volatility is the VFTSE index 30 days before the announcement date. Dummy variable Distress takes value 1 for issues with interest cover ratio less than one. Dummy variable Financials takes the value 1 for all financial issuers, 1-digit ICB code (Industry Classification Benchmark). Dummy variable Post2007 takes the value 1 for issues whose announcement year is 2008, 2009 or 2010. Demand is the natural logarithm of the sum of gross proceeds yearly based. Concentration is the Herfindahl-Hirschman index defined as the sum of the squared annual lead banks market share, computed using proceeds of SEOs handled by each underwriter. T-statistics of robust standard errors are in parentheses. ***= p<0.01, **=p<0.05, *=p<0.1

	Gross underwriting fees				Discount			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	2.67***	0.01	4.05***	1.06	0.12*	-0.32***	0.26***	-0.43***
	(5.09)	(0.02)	(6.16)	(0.83)	(1.82)	(-3.01)	(3.08)	(-3.17)
Open offer dummy	-0.10	-0.04	-0.06	-0.05	-0.23***	-0.22***	-0.22***	-0.22***
	(-0.53)	(-0.21)	(-0.33)	(-0.28)	(-9.06)	(-8.75)	(-8.07)	(-8.55)
Take up	0.18	0.25	-0.02	0.17	0.20***	0.21***	0.18***	0.22***
	(0.41)	(0.58)	(-0.04)	(0.38)	(3.71)	(3.90)	(3.11)	(4.01)
Size	2.10***	2.22***	1.84***	2.15***	0.19**	0.21***	0.14*	0.21***
	(3.77)	(3.91)	(3.37)	(3.88)	(2.59)	(2.88)	(1.93)	(2.97)
Relative size	-0.03*	-0.03**	-0.04*	-0.03**	-0.01**	-0.01**	-0.01*	-0.01**
	(-1.97)	(-2.13)	(-1.78)	(-2.12)	(-2.10)	(-2.21)	(-1.86)	(-2.21)
Annual abnormal return	-0.45**	-0.41**	-0.45**	-0.40**	-0.04	-0.03	-0.04	-0.03
	(-2.60)	(-2.26)	(-2.32)	(-2.22)	(-1.62)	(-1.33)	(-1.62)	(-1.35)
Market volatility	-0.74	-0.83	0.34	-0.85	0.24*	0.22*	0.49***	0.22*
	(-0.83)	(-0.95)	(0.40)	(-0.94)	(1.91)	(1.76)	(3.67)	(1.77)
Distress dummy	0.42**	0.42**	0.37**	0.41**	0.02	0.03	0.02	0.03
	(2.37)	(2.39)	(2.02)	(2.26)	(1.04)	(1.06)	(0.74)	(1.13)
Financials	-0.33*	-0.31*	-0.29	-0.30	-0.05*	-0.05*	-0.05	-0.05*
	(-1.75)	(-1.68)	(-1.56)	(-1.60)	(-1.86)	(-1.74)	(-1.64)	(-1.78)
Post2007	0.89***				0.15***			
	(4.38)				(5.43)			
Demand		0.32***		0.26***		0.05***		0.06***
		(4.60)		(2.86)		(6.31)		(6.09)
Concentration			-7.25***	-2.89			-0.69**	0.32
			(-3.25)	(-1.03)			(-2.46)	(1.30)
No. of observations	224	224	224	224	224	224	224	224
Adjusted R^2	0.22	0.23	0.20	0.23	0.49	0.50	0.44	0.50

Table 5

The effect of the financial crisis on both UK SEO fees and the discount rate. This table reports various ordinary least squares regressions predicting fees using the full sample (Panel A) and splitting the sample before and post the financial crisis (Panel B); and predicting the discount rate (Panel C). The dependent variable, gross underwriting fees, is defined as fees paid to the banks, broker, investing institutions, existing shareholders and/or placees, discount, is the offer price discount in relation to the market price as at the day before the announcement. Variable definitions are provided in sections 5.1 and 5.2. Top UW dummy x Discount is the interaction between top UW dummy and discount variables. Proceeds are 2010 inflation-adjusted. T-statistics of robust standard errors are in parentheses. ***= p<0.01, **=p<0.05, *=p<0.1

Panel A. Gross underwriting fees	2000-2010							
	(1)		(2)		(3)		(4)	
Constant	0.99	(1.25)	0.86	(1.06)	1.80*	(1.97)	0.38	(0.47)
Discount	0.54	(0.91)	0.57	(0.96)	0.51	(0.85)	0.62	(1.05)
Open offer dummy	-0.01	(-0.03)	-0.01	(-0.04)	-0.04	(-0.17)	0.04	(0.17)
Take up	0.10	(0.21)	0.10	(0.21)	0.10	(0.22)	0.11	(0.23)
Size	1.72***	(3.42)	1.71***	(3.38)	1.65***	(3.10)	1.68***	(3.68)
Relative size	-0.03*	(-1.70)	-0.03*	(-1.67)	-0.03*	(-1.91)	-0.03*	(-1.81)
Annual abnormal return	-0.46***	(-3.29)	-0.45***	(-3.24)	-0.49***	(-3.63)	-0.44***	(-3.19)
Market volatility	-0.38	(-0.41)	-0.35	(-0.38)	-0.63	(-0.67)	-0.38	(-0.42)
Distress dummy	0.35*	(1.95)	0.34*	(1.91)	0.38**	(2.11)	0.36**	(2.03)
Financials	-0.25	(-1.36)	-0.26	(-1.39)	-0.27	(-1.43)	-0.22	(-1.18)
Demand	0.21***	(2.71)	0.22***	(2.86)	0.13	(1.53)	0.26***	(3.43)
Conflicts of interest	7.36***	(2.67)			7.79***	(2.84)	7.06***	(2.62)
—conflicts of interest*POST			6.97**	(2.55)				
—conflicts of interest*PRE			13.16	(1.45)				
Ownership UK sh.	0.42	(1.00)	0.43	(1.01)	0.47	(1.14)	0.36	(0.86)
Ownership large sh.	-1.08*	(-1.95)	-1.09*	(-1.96)	-1.16**	(-2.07)	-1.10**	(-2.04)
Top UW dummy	-0.37*	(-1.69)	-0.37*	(-1.69)			-0.41*	(-1.86)
—top UW dummy*POST					-0.09	(-0.34)		
—top UW dummy*PRE					-0.67**	(-2.44)		
Bargaining power	0.01***	(4.56)	0.01***	(4.54)	0.01***	(3.84)		
—bargaining power*POST							0.01***	(4.63)
—bargaining power*PRE							0.08*	(1.80)
Experience	-0.01	(-0.15)	-0.01	(-0.13)	-0.01	(-0.25)	-0.01	(-0.03)
No. of observations	224		224		224		224	
Adjusted R^2	0.27		0.27		0.28		0.28	

Table 5—*Continued*

Panel. B Gross underwriting fees	2008-2010		2000-2007	
	(5)		(6)	
Constant	-5.85	(-1.29)	4.48**	(2.44)
Discount	-0.25	(-0.27)	0.95	(0.86)
Open offer dummy	-0.29	(-0.99)	0.07	(0.21)
Take up	0.55	(0.92)	-1.38**	(-2.52)
Size	4.76***	(4.66)	0.83**	(2.05)
Relative size	-0.01	(-0.94)	-0.04	(-0.59)
Market volatility	-0.31*	(-1.73)	-0.60***	(-2.80)
Market volatility	0.07	(0.06)	-3.45*	(-1.95)
Distress dummy	0.44**	(2.06)	0.30	(1.00)
Financials	-0.42*	(-1.77)	0.13	(0.33)
Demand	0.76*	(1.78)	-0.01	(-0.05)
Conflicts of interest	5.73**	(2.26)	-0.73	(-0.07)
Ownership UK sh.	0.11	(0.23)	0.65	(0.93)
Ownership large sh.	-0.44	(-0.71)	-1.27	(-1.51)
Top UW dummy	-0.65*	(-1.77)	0.56	(0.87)
Bargaining power	0.01*	(1.75)	0.08*	(1.80)
Experience	-0.01	(-0.22)	0.07	(1.10)
Top UW dummy*Discount	1.68*	(1.89)	-3.54*	(-1.79)
No. of observations	123		101	
Adjusted R^2	0.35		0.28	

Table 5—*Continued*

Panel C. Discount	2000-2010					
	(1)		(2)		(3)	
Constant	-0.21**	(-2.05)	-0.17*	(-1.67)	-0.35**	(-2.35)
Open offer dummy	-0.21***	(-7.78)	-0.21***	(-7.70)	-0.20***	(-7.47)
Take up	0.25***	(4.97)	0.25***	(4.97)	0.25***	(5.01)
Size	0.19***	(2.81)	0.19***	(2.82)	0.19***	(2.97)
Relative size	-0.01**	(-2.55)	-0.01**	(-2.57)	-0.01**	(-2.60)
Market volatility	-0.05**	(-2.35)	-0.05**	(-2.45)	-0.05**	(-2.32)
Market volatility	0.11	(0.92)	0.10	(0.86)	0.11	(0.91)
Distress dummy	0.01	(0.23)	0.01	(0.28)	0.01	(0.27)
Financials	-0.03	(-1.30)	-0.03	(-1.15)	-0.03	(-1.29)
Demand	0.05***	(5.44)	0.05***	(4.91)	0.06***	(4.17)
Conflicts of interest	1.14***	(4.15)			1.10***	(3.88)
—conflicts of interest*POST			1.23***	(4.10)		
—conflicts of interest*PRE			-0.42	(-0.35)		
Ownership UK sh.	-0.20***	(-4.02)	-0.20***	(-4.05)		
—ownership UK sh.*POST					-0.24***	(-3.45)
—ownership UK sh.*PRE					-0.16***	(-3.22)
Ownership large sh.	-0.01	(-0.01)	0.01	(0.03)	0.01	(0.21)
Top UW dummy	0.02	(0.76)	0.02	(0.78)	0.02	(0.69)
Bargaining power	0.01	(0.57)	0.01	(0.57)	0.01	(0.59)
Experience	0.01	(0.50)	0.01	(0.45)	0.01	(0.56)
No. of observations	224		224		224	
Adjusted R^2	0.56		0.56		0.56	

Discount*Top underwriter dummy

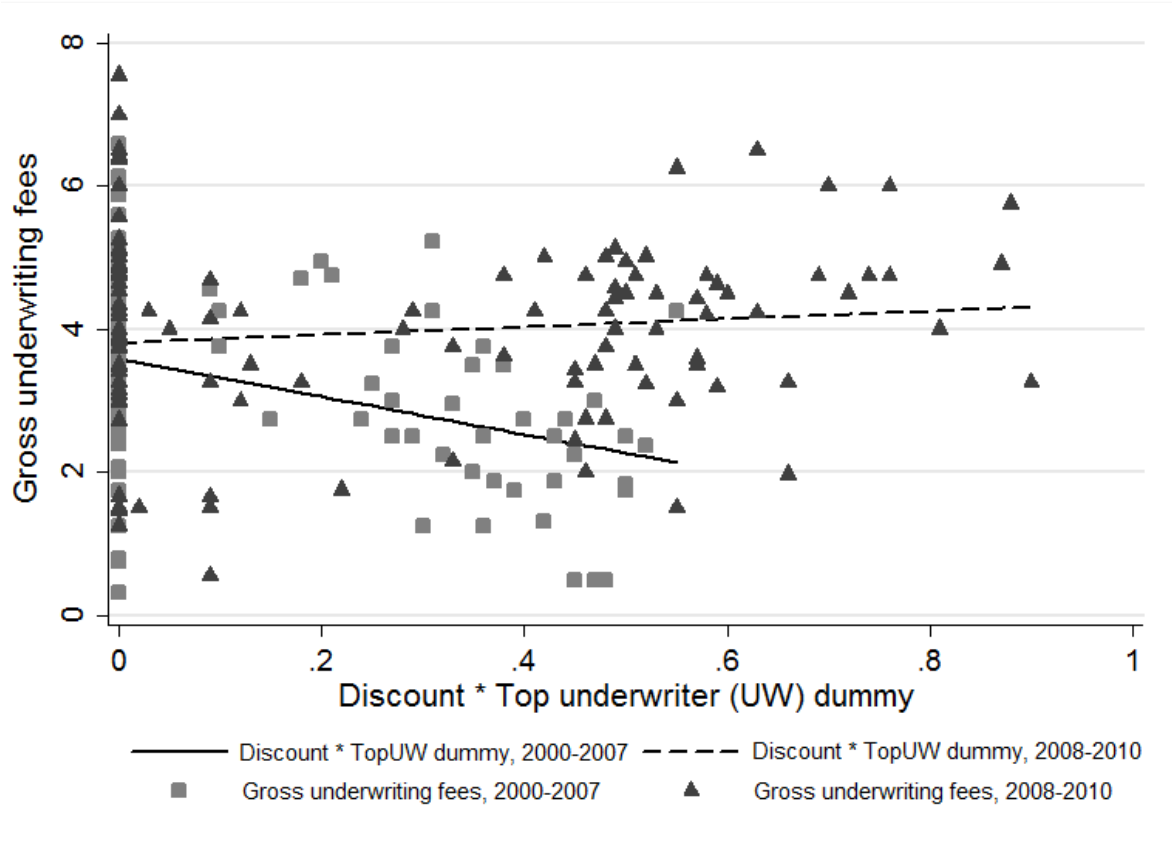

Figure 1 Predicted values of the discount of top underwriters over the period 2000-2007 *versus* the years 2008-2010. Top UW dummy*Discount is the interaction between top UW dummy and discount variables. The discount is the offer price discount in relation to the market price at the day before the announcement. Dummy Top UW takes the value 1 for issues with at least one of the lead underwriter(s) among the top 5 underwriters ranked by market shares based on proceeds. The dotted line shows the predicted values of Top UW dummy*Discount on Gross underwriting fees for the period 2000-2007. The continuous line shows the predicted values of Top UW dummy*Discount on Gross underwriting fees for the period 2008-2010.

Table A.1

Variables	Definitions
Annual abnormal return	Performance of the share over the past year relative to the market as a whole. It is measured as the difference between the actual return on the share (percentage capital appreciation plus dividend yield) and the percentage return available over the same period from an investment in a diversified portfolio with the same beta (Altinkilic and Hansen 2003; Suzuki 2010; Dimson and Marsh, 2009). Proxy for issuer-quality.
Banks brokers fees	Additional fees, corporate finance fee, documentation fee, advisory fee or further placing commission (Armitage, 2000).
Bargaining power	Sum of proceeds of issuers handled by each underwriter in each year over the proceeds of each deal. We consider the mean of proceeds in case of co-leads. It is a proxy for the underwriter bargaining position relative to the issuer.
Concentration	Herfindahl index, proxy for the investment bank concentration. It is defined as the sum of the squared annual lead banks market share, computed using proceeds of SEOs handled by each underwriter (Kim et al., 2010).Proceeds are equally split among co-leads.
Conflicts of interest	For each issuer *i* we take the increase in stake by the institutional shareholders times their weighted turnover. For each shareholder the weighted turnover is defined as the turnover times the ownership pre-offering; the increase is calculated as the difference between post and pre ownership at the closest quarter before and post the announcement date, and is set to 0 in case of negative difference. We take the average value over all shareholders for each issuer. Higher values are proxies for short-term horizon institutional investors.
Demand	Natural logarithm of the sum of gross proceeds adjusted for inflation, yearly based, proxy for the demand of underwriting services.
Discount	Offer price discount in relation to the market price as at the day before the announcement (Altinkilic and Hansen, 2003).
Distress	Dummy variable taking value of unity for issues with interest cover ratio (EBIT over the Interest Expense on Debt) less than one (Hoshi et al., 1990). Proxy for issuer-quality.
Experience	Natural logarithm of gross proceeds adjusted for inflation times one if the issue has had at least two issues among the sample, zero otherwise (Huang and Zhang, 2011). Proxy for the experience of companies.

Table A.1—*Continued*

Variables	Definitions
Financials	Dummy variable indicating financials (1-digit ICB industry equals 8)
Gross underwriting fees	Fees paid to the banks, broker, investing institutions, existing shareholders and/or placees. They include underwriting fees and sub-underwriting fees (Armitage, 2000).
Market volatility	UK implied volatility index (VFTSE) 30 days before the announcement date. VFTSE reflects the market expectations of the future monthly volatility of the UK benchmark equity index, FTSE100, which comprises the 100 largest companies on London Stock Exchanges and represents 80% of the UK market
Open offer	Dummy variable taking a value of unity for open offer issues (Armitage, 2000).
Ownership large sh.	Proportion of the issuer's shares held by shareholders with stake ≥10% measured at the closest quarter before the announcement date (Armitage, 2000).
Ownership UK sh.	Proportion of the issuer's shares held by shareholders whose country is equals "UK" or "Virgin Islands (UK)" measured at the closest quarter before the announcement date.
Post2007	Dummy variable taking value of one for issues whose announcement year is 2008, 2009 or 2010.
Relative size	Market capitalization of the issuer at the date of the SEO divided by the gross proceeds adjusted for inflation; (Altinkilic and Hansen, 2000)
Size	Inverse of the natural logarithm of the 2010 inflation-adjusted (m£) value of the gross proceeds of the issue (Altinkilic and Hansen, 2000; Kim et al., 2010).
Takeup	Existing shareholders percentage of valid acceptance after the issue (Armitage, 2002).
Top UW dummy	Set to one if at least one of the lead underwriter(s) of the issue is one of the top 5 underwriters ranked by market shares based on proceeds (Abrahamson et al., 2011).

Table C.1

	All sample			Rights Issues			Open Offers		
Rank	Underwriter	Proceeds (m£)	Fees (%)	Underwriter	Proceeds (m£)	Fees (%)	Underwriter	Proceeds (m£)	Fees (%)
1	JPMorgan Chase	14.89	3.62	JPMorgan Chase	16.72	3.56	UBS	22.61	1.90
2	UBS	12.51	3.17	Goldman Sachs	11.18	3.06	BoA Merrill Lynch	21.36	2.61
3	BoA Merrill Lynch	10.16	3.60	UBS	9.05	3.42	RBS Hoare Govett	17.34	3.27
4	Goldman Sachs	9.44	2.90	HSBC	8.64	4.14	JPMorgan Chase	9.56	3.77
5	RBS Hoare Govett	7.43	3.87	BoA Merrill Lynch	6.33	4.01	Goldman Sachs	4.33	2.25
6	HSBC	6.64	3.99	Deutsche Bank	6.25	2.83	Barclays	3.91	1.84
7	Deutsche Bank	4.86	2.93	Morgan Stanley	5.50	2.66	Credit Suisse	3.81	3.25
8	Credit Suisse	4.60	3.84	Citigroup	5.05	3.47	Citigroup	2.87	3.03
9	Citigroup	4.49	3.38	Credit Suisse	4.87	4.14	Numis Securities	2.30	3.37
10	Morgan Stanley	4.21	2.82	RBS Hoare Govett	4.04	3.97	HM Treasury	2.13	1.50

Table D.1

	All sample			Rights Issues			Open Offers		
Rank	Underwriter	SEOs (No.)	Fees (%)	Underwriter	SEOs (No.)	Fees (%)	Underwriter	SEOs (No.)	Fees (%)
1	JPMorgan Chase	11.56	3.62	RBS Hoare Govett	14.59	3.97	Numis Securities	11.08	3.37
2	RBS Hoare Govett	10.11	3.87	JPMorgan Chase	14.24	3.56	Investec	8.51	4.15
3	Numis Securities	7.26	3.33	UBS	7.64	3.42	JPMorgan Chase	7.80	3.77
4	UBS	5.16	3.17	Citigroup	4.71	3.47	KBC Peel Hunt	7.09	3.76
5	Investec	4.57	4.34	BoA Merrill Lynch	4.68	4.01	Singer Capital Markets	5.32	4.11
6	KBC Peel Hunt	3.92	4.19	Numis Securities	4.55	3.23	Piper Jaffray	4.79	3.72
7	BoA Merrill Lynch	3.73	3.60	Deutsche Bank	4.45	2.83	Altium Capital	4.26	3.72
8	Citigroup	3.52	3.38	HSBC	3.79	4.14	RBS Hoare Govett	3.81	3.27
9	Commerzbank	3.29	2.95	Commerzbank	3.74	3.00	Evolution Securities	3.46	4.64
10	Deutsche Bank	2.86	2.93	Credit Suisse	3.08	4.14	Cenkos Securities	3.19	3.99

Table E.1

Panel A. 2000-2007 (No. of observations 101)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Discount	1															
2	Open offer dummy	-0.57***	1														
3	Take up	0.29***	-0.43***	1													
4	Size	0.10	0.07	-0.27***	1												
5	Relative size	-0.21**	0.26***	-0.13	0.30***	1											
6	Annual abnormal return	-0.14	-0.06	-0.01	-0.18*	0.07	1										
7	Market volatility	0.06	0.06	-0.14	-0.03	-0.19*	0.02	1									
8	Distress dummy	0.03	0.06	-0.29***	0.26***	-0.06	-0.16	0.09	1								
9	Financials	-0.20**	0.04	-0.11	-0.17*	-0.27***	-0.05	0.25**	0.08	1							
10	Demand	0.15	-0.13	-0.07	-0.12	-0.09	-0.02	-0.01	0.01	0.02	1						
11	Concentration	0.08	-0.02	-0.14	-0.14	-0.17*	0.18*	0.17*	-0.14	0.13	0.04	1					
12	Conflicts of interest	-0.15	0.22**	-0.21**	0.10	0.03	-0.13	-0.04	0.22**	0.15	0.04	-0.08	1				
13	Ownership UK sh.	-0.10	-0.09	0.19*	-0.16	-0.04	0.04	-0.09	-0.21**	0.11	-0.02	-0.19*	-0.08	1			
14	Ownership large sh.	0.01	-0.01	-0.07	0.11	0.02	0.13	-0.06	0.08	-0.12	-0.08	-0.06	0.10	-0.01	1		
15	Top UW dummy	0.35***	-0.49***	0.34***	-0.34***	-0.26***	0.00	0.06	-0.10	0.08	0.22**	0.22**	-0.17*	0.08	-0.29***	1	
16	Bargaining power	-0.03	-0.13	0.08	0.03	0.15	-0.02	-0.09	-0.07	-0.16	-0.07	-0.11	0.09	0.19*	0.05	0.13	1
17	Experience	-0.04	0.01	0.04	-0.10	-0.04	0.05	0.19*	-0.16	0.09	-0.02	0.09	-0.05	-0.06	0.02	-0.02	-0.14

Table E.2

Panel B. 2008-2010 (No. of observations 123)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Discount	1															
2	Open offer dummy	-0.62***	1														
3	Take up	0.49***	-0.45***	1													
4	Size	-0.07	0.41***	-0.20**	1												
5	Relative size	-0.24***	0.10	-0.00	-0.04	1											
6	Annual abnormal return	0.01	-0.18**	0.14	-0.10	0.02	1										
7	Market volatility	0.11	-0.11	0.07	-0.12	-0.08	0.00	1									
8	Distress dummy	-0.10	0.26***	-0.16*	0.26***	0.04	-0.12	-0.05	1								
9	Financials	-0.06	-0.08	-0.09	-0.29***	0.13	-0.09	0.26***	0.15	1							
10	Demand	0.19**	-0.15	0.05	-0.16*	-0.03	-0.32***	0.32***	-0.11	0.05	1						
11	Concentration	-0.26***	0.13	-0.24***	0.13	0.00	0.23**	-0.28***	-0.01	-0.01	-0.79***	1					
12	Conflicts of interest	0.16*	-0.02	-0.15	0.19**	-0.03	0.41***	-0.07	0.11	-0.15*	-0.22**	0.21**	1				
13	Ownership UK sh.	-0.33***	0.08	0.08	-0.06	0.00	-0.04	-0.20**	-0.08	-0.03	0.00	-0.04	-0.25***	1			
14	Ownership large sh.	-0.21**	0.25***	-0.13	0.10	-0.11	0.02	-0.08	0.04	-0.07	-0.14	0.07	0.15*	0.40***	1		
15	Top UW dummy	0.21**	-0.36***	0.24***	-0.48***	0.07	0.14	0.25***	-0.20**	0.12	0.24***	-0.23**	-0.19**	-0.06	-0.18**	1	
16	Bargaining power	0.10	-0.03	0.12	0.12	-0.00	-0.09	-0.07	0.09	-0.10	0.18**	-0.11	-0.09	0.05	-0.02	0.24***	1
17	Experience	-0.10	0.08	-0.09	-0.18*	0.20**	-0.02	0.12	-0.08	0.29***	0.01	0.03	-0.07	0.04	0.15*	0.11	-0.18**