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Information risk and underwriter switching in SEOs: Evidence from China

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Information Risk and Underwriter Switching in SEOs: Evidence from China

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Abstract: In this paper we examine whether information risk affects underwriter switching in a seasoned equity offering (SEO) process. Building on previous research, we hypothesize that SEO firms and underwriters associate with one another by mutual choice, and firms with a low degree of information risk tend to match up with prestigious underwriters. Using a sample of SEO firms in China and employing accruals quality as a proxy of information risk, we find evidence consistent with our hypothesis: the information risk and the initial public offering (IPO) underwriters' reputation at the time of the SEO jointly determine the probability that the firms will switch their underwriters. A mismatch between information risk and underwriter reputation increases the probability of an underwriter switching. Furthermore, if the firms decide to switch underwriters, then a lower degree of information risk is associated with a greater likelihood of changing to a more reputable underwriter. We also find that the relationship between information risk and the choice of underwriter reputation primarily exists in non-state-controlled companies.

Keywords: information risk, underwriter reputation, underwriter switching, state ownership, seasoned equity offerings

1. INTRODUCTION

Firms choose an underwriter for a seasoned equity offering (SEO) just as they do for an initial public offering (IPO). Although some firms remain with their IPO underwriter for an SEO, others switch to a new one. In this paper, we investigate how information risk affects Chinese firms' decision to switch underwriters during the SEO process.

The recent literature suggests that information asymmetry is a non-diversifiable risk factor that affects the cost of capital (Easley and O'Hara, 2004; Francis et al., 2005; and Gray et al., 2008). As a bridge between issuers and investors, underwriters provide a valuable service by lowering the degree of information asymmetry between

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them in SEOs, thereby reducing SEO underpricing.[1] For example, Chemmanur and Fulghieri (1994) develop a theoretic model and predict a negative relation between the reputation of the underwriter and the underpricing surrounding seasoned equity issuances. Empirical studies also find confirmatory evidence (for instance, Carter and Manaster, 1990; McLaughlin et al., 2000; and Cooney et al., 2003).

The information risk of SEO issuers influences the costs and benefits of an underwriter switching. If the degree of such risk is low, then the need for underwriter certification and monitoring declines and the cost of hiring an underwriter is reduced accordingly. Consequently, as signaling models suggest (Titman and Trueman, 1986; Allen and Faulhaber, 1989; and Welch, 1989), an issuer can hire a prestigious underwriter to signal its quality at a lower cost. Firms with a higher degree of information risk, in contrast, are more likely to require certification and monitoring by prestigious underwriters.

In the underwriter-SEO firm pairing, however, the choice is not only on one side. Underwriters also have choices about the clients they accept. For example, out of concern for their reputation and to avoid possible losses, prestigious underwriters tend to prefer SEO firms with fewer information risks. They may either decline to work for firms with a high level of information risk or charge them more to compensate for the risk of damage to their reputation. Complicating the decision is that an underwriter's reputation is not fixed. Beatty et al. (1998), for example, show that US Securities and Exchange Commission (SEC) investigations of underwriters result in serious damage to the reputation of these underwriters. As an underwriter's reputation fluctuates, so too does the value and cost of its services, which further affects a firm's decision to retain or change its IPO underwriter during an SEO.

This discussion is consistent with the findings of Fernando et al. (2005), who build up a mutual choice model and present evidence of quality matching in the SEO process. More specifically, these authors find that when an SEO firm's quality is high, it will combine itself with an underwriter with stronger capabilities; when its quality is low, it will combine itself with an inferior underwriter. If there is a mismatch between the quality of an SEO firm and the reputation of its IPO underwriter, then an underwriter switch will take place. In this paper, we investigate whether reputable underwriters are matched with SEO firms with lower levels of information risk.

Following Francis et al. (2005) and Aboody et al. (2005), we adopt accruals quality as a proxy for information risk. A high level of accruals quality indicates a low degree of information risk. Unlike IPO firms, SEO firms have been listed in the stock market for years, and investors have already received a substantial amount of public information about them. Financial statements are the primary source of firm-specific information for investors, and high-quality accounting information reduces the information risks for investors and mitigates the information asymmetry between issuer and investors. Analytical work by Easley and O'Hara (2004) demonstrates that the precision of such public information as accounting information influences uninformed investors' sensitivity to information risk, thereby influencing the stock price.

Employing a sample of publicly listed firms in China that underwent SEOs between 1997 and 2007, we find evidence to suggest that information risk has an important

1 SEO underpricing means that the offer price is lower than the closing price on the day prior to the offer date. Underpricing represents a substantial cost for firms raising equity capital. As Bowen et al. (2008) indicate, underpricing in the United States, on average, totals 2.82% of offer proceeds, aggregating to more than US$8 billion in the 1990s.

impact on underwriter choice in the SEO process, conditional on the reputation of the IPO underwriter. More specifically, we demonstrate that when an IPO underwriter's reputation is good at the time of the SEO, a firm with a high degree of information risk is more likely to switch underwriters. However, we find no consistent evidence to indicate that information risk affects underwriter switching when an IPO underwriter's reputation is bad at the time of the SEO.

We next consider a sub-sample of firms that changed their underwriters in order to investigate which type of underwriters they switched to. We identify three categories of underwriter change: change to an underwriter with an inferior reputation, change to an underwriter with equal reputation, and change to an underwriter with a better reputation. To mitigate the endogeneity between information risk and underwriter reputation (Jo et al., 2007), we employ a two-stage least squares (2SLS) method using two instrumental variables: a dummy for CEO turnover between the IPO and the SEO, and the standard deviation of operating cash flows between the IPO and the SEO. After controlling for this endogeneity problem, we find that firms with a lower (higher) degree of information risk are more likely to change to underwriters with a better (worse) reputation. Our results are consistent with the 'matching' behavior suggested by Fernando et al. (2005).

We also seek answers to the question of whether the state ownership of Chinese listed companies has any impact on the relation between information risk and underwriter switching. As China's stock market was originally designed to help state-controlled enterprises (SOEs) to raise capital and improve performance, the majority of the country's listed firms are SOEs (Gordon and Li, 2003). Even though their percentage has been declining since 1992, state-controlled listed companies still accounted for 57% of all listed companies at the end of 2008.[2]

There are several reasons for state-controlled listed companies to behave differently from privately owned listed firms in terms of underwriter switching. First, as Wang et al. (2008) suggest, preferential access to new capital and government endorsement for bailouts weaken the need for certification and reputable underwriters. In addition, CEOs of state-controlled firms are often current or former government officials, and their compensation is less directly related to firm performance. These executives have less motivation to fully utilize the value of underwriter services for their firms. Thus, state ownership reduces the efficiency of the information risk-underwriter reputation match. We find that state ownership has no significant impact on the interactive effect of information risk and IPO underwriter's reputation at the time of an SEO on the probability of switching underwriters. However, we do find that state ownership has a significant impact on the relationship between information risk and the choice of underwriter reputation. Compared to non-state-owned companies, there is a weaker link between information risk and underwriter reputation in state-owned firms.

Our study contributes to the existing literature in the following ways. First, by investigating the link between information risk and underwriter switching, we extend our understanding of the important role played by accounting information. Previous studies have found that higher quality accounting information leads to less information risk and reduces the cost of capital in the US (e.g., Francis et al., 2004 and 2005; and Bharath et al., 2008) and internationally (e.g., Bhattacharya et al., 2003; Biddle and Hilary, 2006; and Gelos and Wei, 2005). Our findings suggest that high-quality

2 The percentage is calculated on the basis of data from the WIND database.

accounting information plays a significant role in the SEO process. Because an SEO is an important channel by which to raise external capital, such high-quality information can attract reputable underwriters and potentially reduce the cost of raising capital.

Second, our study sheds light on the determinants of underwriter switching. Although previous studies have examined this issue (e.g., James, 1992; Krigman et al., 2001; and Fernando et al., 2005), none has focused on the role played by information risk. For instance, James (1992) adopts a relationship-building perspective and demonstrates that, as the elapsed time between offerings increases, the likelihood of changing underwriters in a subsequent offering increases due to the diminished value of relationship capital. In the same vein, Burch et al. (2005) find that SEO firms pay lower underwriting fees if they remain with their IPO underwriters. Krigman et al. (2001) document a graduation effect, i.e., firms move to more prestigious underwriters, and better research coverage is a key factor in their decision. Our paper is most closely related to Fernando et al. (2005) who examine how firm quality and underwriter reputation interactively affect the underwriter choice, but leave out the impact of information risk. The findings of our research, however, suggest that such risk is an important factor in determining underwriter selection during the SEO process. As we demonstrate here, the inclusion of information risk significantly increases the explanatory power of our results on underwriter switching.

Third, this paper examines accruals quality in the period from IPO to SEO, thus extending prior research that focuses only on earnings management before SEOs (e.g., Ranjan, 1998; Teoh et al., 1998; Chen and Yuan, 2004; Kim and Park, 2005; and Jo et al., 2007). The majority of this literature pays little attention to the impact of earnings management on underwriter choice, with the exception of Jo et al. (2007). We extend their research by demonstrating that accruals quality, our proxy for information risk, not only affects a firm's decision to switch its IPO underwriter, but also determines the type of underwriter it switches to.

Fourth, despite the abundant evidence on the determinants of underwriter change in developed countries, studies on the role of underwriters and their interactions with issuers in emerging markets such as China remain limited. In 2009, the market value of stocks in China became the second largest in the world, reaching US$3.21 trillion. The country's stock market can no longer be neglected, and is attracting increased attention from around the world. Moreover, due to the special development path that China's stock market has taken, Chinese firms change their underwriters much more frequently than do their peers in the US. Whereas the turnover rate of underwriters is around 30% in the US (Krigman et al., 2001), it is around 89% in China. By providing evidence on the determinants of underwriter switching, this study will help investors to better understand the Chinese stock market.

Finally, we contribute to the literature on comparisons between state- and non-state-owned firms. Prior studies have documented better performance and higher levels of productivity of non-state-owned firms (e.g., Shleifer, 1998; Megginson and Netter, 2001; and Sun and Tong, 2003). Our research provides evidence of the inefficiency of SOEs in the underwriter selection decision.

The remainder of this paper is organized as follows. The next section presents a discussion of the institutional background of China's stock market, the related literature, and our testable predictions, followed by a description of the data and the research design in Section 3. In Section 4, we present our empirical results on the relation between information risk and underwriter switching in SEO firms, as well

as the moderating impact of state ownership. We conclude the paper in the final section.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

(i) Institutional Background on Equity Offerings in China

The role of underwriters in equity offerings has gone through three stages in China. The first stage lasted from the establishment of the country's two stock exchanges, the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE), which were founded in 1990 and 1991, respectively, up to 2001. Prior to 2001, China implemented a quota system for equity offerings. In each year, the State Council Securities Policy Committee, the State Planning Commission and the Central Bank jointly determined the quota, which was then allocated among the different regions of the country. Based on the allocated quota, each regional security authority then chose which firms could issue equity. The task of selecting eligible firms primarily rested with local governments, which usually considered firm performance and regional development objectives. Underwriters had limited influence on the choice of issuers.

The second stage was from 2001 to January 2005, when the China Securities Regulatory Commission (CSRC), the main regulator of the stock market, shifted from the quota system to a channel system, in which the selection of issuers was decentralized to underwriters. The CSRC allocated channels to underwriters on the basis of size and performance, and considered issuance applications submitted by underwriters on a first-come, first-served basis. Then, after consideration of the overall situation of the stock market, the CSRC would decide whether to approve an issuance. Once the issuance had been approved, the issuer could then offer its stocks to the public. The channels constituted the number of applications an underwriter could have in the process from initial submission to final offering. For instance, if an underwriter had two channels, then it could have at most two issuances in the process. If it had used up its channels, then only after one issuance had been completed or vetoed could it start another application. In this channel system, prestigious and less prestigious underwriters were treated equally, and the system also applied to SEOs. It was in this stage that underwriters began to pay particular attention to project selection and to play a critical role in equity offerings.

In early 2005, when the third stage began, the regulation of equity offerings shifted toward a registration system similar to that in the US. The registration process, however, is still lengthy and subject to CSRC approval and control over the pace and volume of new issuances. There is now no limit on the number of applications an underwriter can have in the pipeline, but the new system emphasizes the role of sponsors in underwriter firms. Only underwriters with qualified sponsors can underwrite offerings, and competition among underwriters has become increasingly fierce.

The CSRC's discretion over applying a temporary brake to IPOs creates great uncertainty for underwriters in the IPO business. Since 1991, there have been six IPO blackouts: July-December 1994, January-June 1995, July 1995 to January 1996, August 2004 to January 2005, May 2005 to June 2006, and September 2008 to June 2009. The possibility of such IPO blackouts causes underwriters in China to compete intensely for SEOs, which are not subject to blackouts.

As China's stock market strides toward maturity, the interactions between issuers and underwriters are becoming increasingly complex. This paper provides evidence to explicate these interactions.

(ii) Information Risk and Underwriter Switching

As Fernando et al. (2005) suggest, underwriter choice constitutes a matching process between an issuer and an underwriter, and this matching continues in SEO situations. The issuer balances the value and cost of the underwriter's services, and the underwriter weighs up the possible reputation risk and engagement fees from providing the services and subsequent offerings.

Underwriters advise issuers on timing and pricing decisions, syndicate demand for their stocks, and ultimately distribute the shares to the public. The most valuable service is the certification provided by the underwriter's reputation (Booth and Smith, 1986). The extant literature provides a plethora of evidence on the value of underwriter reputation (e.g., Beatty and Ritter, 1986; Balvers et al., 1988; Carter and Manaster, 1990; Carter et al., 1998; and Fang, 2005). Chemmanur and Fulghieri's (1994) analytical model predicts a negative relation between the reputation of an underwriter and the negative stock price reaction around seasoned equity issuances. Empirical studies offer evidence to support this prediction; see, for instance, Chen and Mohan (2002), McLaughlin et al. (2000) and Cooney et al. (2003).

This certification service does not come without cost. Underwriters are concerned about their reputational capital, as they are regular players in the equity offering market. Without adequate due diligence, they may suffer in future offerings. The results presented in Beatty et al. (1998) indicate that underwriter reputation is not a constant. These authors find that a publicly disclosed SEC investigation decreases the share of the IPO market held by the targeted underwriter, and also reduces the equity value of its past clients. More prestigious investment banks are more selective about issuers, and are more likely to engage in less risky clients (Chemmanur and Fulghieri, 1994; and Bae et al., 1999). If they do engage in risky firms, then prestigious underwriters will charge them higher fees.

The dynamic nature of the matching process suggests that the information risk between IPO and SEO and the reputation of the IPO underwriter at the time of the SEO interactively influence the underwriter switching decision. A low degree of information risk implies less information asymmetry between the issuer and investors and higher quality of the issuing firm. Therefore, an issuer with less information risk will tend to match up with a more reputable underwriter. If the reputation of the IPO underwriter is poor, a mismatch occurs, and the issuer is thus more likely to switch to another underwriter. However, another type of mismatch, in which the information risk of the issuer is great and the IPO underwriter's reputation is good, may also lead to underwriter switching. Our first hypothesis can thus be summarized as follows.

H_1: The effect of information risk on the switching decision depends on the reputation of the IPO underwriter at the time of the SEO. If the IPO underwriter has a good (bad) reputation and the issuer has a high (low) degree of information risk, then the issuer is more likely to switch underwriters.

To further our understanding of how information risk affects firms' underwriter choice decisions, our next hypothesis examines which type of underwriter firms choose if they decide to make a switch. When a firm chooses to change its underwriter,

it has three choices: to change to an underwriter with a worse reputation, to change to an underwriter with an equal reputation, or to change to an underwriter with a better reputation. According to the matching theory, firms with less information risk find prestigious underwriters affordable, and therefore tend to hire them more often. At the same time, reputable underwriters also prefer firms with a lower degree of information risk and are thus more willing to underwrite them. Hence, firms with less information risk tend to switch to more prestigious underwriters. Similar reasoning suggests that firms with more such risk will switch to less reputable underwriters. Our second hypothesis is thus as follows.

H_2: If it decides to switch its underwriter, a firm with a lower (higher) degree of information risk is more likely to change to a more (less) prestigious underwriter.

(iii) State Ownership and Underwriter Choice

We also investigate how state ownership affects underwriter selection. There are three reasons for our belief that state ownership weakens the relationship between information risk and underwriter choice. First, 'soft budget constraints' afford SOEs preferential access to financing (e.g., Qian and Roland, 1998). Since its founding, China's stock market has given priority to the capital needs of state-owned companies (Gordon and Li, 2003). Although this priority has diminished lately, state-owned listed firms still dominate the country's stock market. In addition to greater access to equity offerings for capital needs, these firms also have better access to debt financing (Sapienza, 2004), either due to their residual government ownership or their political connections. Because of such preferential financing treatment, it is apparent that SOEs are likely to undervalue the services of underwriters in equity offerings.

Also notable is that the state is more likely to save large SOEs from bankruptcy. Wang et al. (2008) argue that the government is more likely to bail out these firms when they are in financial distress, and the evidence presented by Faccio et al. (2006) indirectly supports them. These authors find that politically connected firms are significantly more likely to be bailed out by the government than similar firms without such connections. A bailout provides a kind of government endorsement of firm quality, and SOEs thus have less need for a quality of underwriting service. Non-state-owned companies, in contrast, lack such bailout alternatives, and instead have to select their underwriters carefully to signal their quality (Akerlof, 1970).

Furthermore, weak governance structures and inappropriate incentives also result in inefficient underwriter choices in state-owned companies. China's Company Law formally conferred upon boards of directors the power to appoint or fire, as well as reward or penalize, executives. However, managerial promotion and compensation in key SOEs remain largely under the control of the Communist Party Committee at the central, provincial and municipal levels. As Chang and Wong (2004) suggest, such personnel control is inefficient. In addition, the literature documents the rarity of equity compensation in Chinese SOEs, in which the connection between executive pay and firm performance is weaker (e.g., Kato and Long, 2006; Firth et al., 2007; and Conyon and He, 2008). Hence, CEOs of state-owned listed firms lack incentives to fully utilize the value of underwriter services.

The foregoing explanation leads us to believe that state ownership mitigates the relation between information risk and underwriter choice, and leads us to our third hypothesis as follows.

H_{3a}: The effect of information risk on the likelihood of an underwriter switching is weaker when the issuing firm is state-owned.

H_{3b}: The relationship between a low degree of information risk and the likelihood of changing to a more prestigious underwriter is weaker when the issuing firm is state-owned.

3. DATA AND MEASUREMENT

(i) Sample Selection and Data

To generate our sample, which comprises Chinese listed firms with SEOs between 1997 and 2007, we combined the SINOFIN and CSMAR databases. There were a total of 434 SEOs during the sample period. We then took several steps to refine the sample, which reduces its size: (1) we excluded SEOs by five firms in the financial industry; (2) we included only the first SEO for each firm during the sample period, and thus lost 86 SEOs; (3) we excluded 46 firms whose IPO underwriters were commercial banks, insurance companies or trust investment companies;[3] and (4) we excluded 12 firms that lacked sufficient information to estimate accruals quality. Our final sample thus consists of 285 unique SEO firms whose distribution is described in Table 1. Only

Table 1

Distribution of Sample Firms

Year	*All SEOs*	*Sample*	*Firms Without Underwriter Change*
1997	1	1	0
1998	7	5	3
1999	11	10	0
2000	31	19	2
2001	25	19	1
2002	19	12	0
2003	11	8	1
2004	12	10	1
2005	12	7	2
2006	106	72	8
2007	199	122	13
Total	434	285	31

Notes:
This table reports our sample firms for each year from 1997 to 2007. We take several steps to finalize our sample size: (1) we exclude SEOs by five firms in financial industries; (2) if there is more than one SEO by the same firm, we only include the first SEO and thus reduce 86 SEOs; (3) we exclude 46 firms whose IPO underwriters were commercial banks, insurance companies and trust investment companies; (4) we exclude 12 firms with lack of information to estimate accruals quality.

32 of these firms did not change underwriters for their SEOs. The remaining firms account for about 89% of the total sample, which represents an underwriter turnover percentage much higher than the 30% documented in the US (Krigman et al., 2001).

We collected firm financial information from the SINOFIN database and stock return data from the CSMAR database. The former provides detailed information on

3 In the early years of China's stock market, commercial banks, insurance companies and trust investment companies participated in underwriting equity offerings. Since 1995, however, these entities have been prohibited from doing so.

IPOs and SEOs, such as offering size, name of the underwriter and so on. To measure underwriter reputation, we hand-collected data on underwriter size and underwriting revenues from the annals or the website of the Securities Association of China.

(ii) Measures of Underwriter Choice and Underwriter Reputation

In this study, we examine the decision to switch underwriters. Our first measure of this decision is SWITCH, a dummy variable that equals 1 if the firm changes its lead underwriter in an SEO, and zero otherwise. If a switch occurs, then the firm needs to decide whether to switch to a better underwriter, a worse underwriter, or an underwriter with an equal reputation to that of its former underwriter.

A popular measure of underwriter reputation is the tombstone ranking developed by Carter and Manaster (1990). However, we lack sufficient information to rank Chinese underwriters in this way. Following Megginson and Weiss (1991), we instead use market share as a proxy of underwriter reputation. We classify underwriters into two categories: Top-10 and small (the rest).[4] In 2007, among the 70 underwriters active in China, Top-10 underwriters held a 66% market share of equity offerings. IPO underwriters' reputation at the time of the SEO is measured as SREP, a dummy variable that equals 1 if an IPO underwriter is ranked among the Top-10 category at the time of an SEO, and zero otherwise.

We regard moving from a Top-10 to a small underwriter or vice versa as a change in reputation. Our measure of underwriter choice is CHANGE, an ordinal variable that equals −1 if the firm changes from a Top-10 to a small underwriter, 0 if it changes to an underwriter within the same category, and 1 if it changes from a small to a Top-10 underwriter.

Underwriter size not only suggests the underwriter's ability to serve large clients, but also the accumulated influence of its performance in equity offerings. Thus, we employ underwriter size as an alternative measure of reputation, classify underwriters into Big-10 and small underwriters, and define another variable for underwriter change, that is, CHANGE_TA, which equals −1 if the firm changes its underwriter from a Big-10 to a small underwriter, 0 if it changes within the same category, and 1 if it changes from a small to a Big-10 underwriter.

(iii) Measures of Information Risk

Our measures of information risk are based on accruals quality. We first compute an abnormal accrual metric using Dechow and Dichev's (2002) model. More specifically, we estimate equation (1) for each year and each industry. Industry is defined by the two-digit SIC codes enforced by the CSRC:

$$\frac{\mathrm{TA}_{i,t}}{Assets_{i,t}} = \phi_0 + \phi_1 \frac{\mathrm{CFO}_{i,t-1}}{Assets_{i,t}} + \phi_2 \frac{\mathrm{CFO}_{i,t}}{Assets_{i,t}} + \phi_3 \frac{\mathrm{CFO}_{i,t+1}}{Assets_{i,t}} + \nu_{i,t}. \tag{1}$$

4 The Securities Association of China has not provided information on all underwriters since 2002. Fang (2005) suggests several benefits of such classification, including a better description of the hierarchical structure of this industry, the avoidance of certain econometrical assumptions on the continuous measure, and the better inference on the differences between prestigious and small underwriters.

TA is the firm's total accruals, TA = EBIT − CFO, EBIT is earnings before extraordinary items and discontinued operations, CFO is operating cash flows and *Assets* is total assets.

Abnormal accruals are the firm- and year-specific residuals from equation (1). Our measure of information risk (IR1) is equal to the standard deviation of a firm's estimated residuals over the period from IPO to SEO. Greater variability of abnormal accruals indicates greater information risk. This measure of information risk is consistent with the extant research, for instance, Francis et al. (2004 and 2005), Bharath et al. (2008) and Gray et al. (2009). In a robustness test, we also construct another measure of information risk (IR2) using the variability of abnormal accruals estimated from the modified Jones model (Dechow et al., 1995).

(iv) Descriptive Statistics

Table 2 presents the descriptive statistics of the variables in the full sample of 285 SEOs. All of the continuous variables are winsorized at 1% and 99%. The mean of SWITCH indicates that 89.1% of the issuers changed underwriters for their SEOs, which is far higher than the 30% reported to have done so in the US (Krigman et al., 2001). The means of CHANGE and CHANGE_TA are −0.189 and −0.185, respectively, which suggests that if firms switch underwriters, on average, they are more likely to change to a less reputable underwriter. The results indicate that the 'graduation effect' documented in the US market is lacking in China. As a proxy for information risk, the mean (median) of IR1 is 0.035 (0.03), which is lower than the 0.0448 (0.0321)

Table 2
Summary Statistics of Variables

Variables	*Obs*	*Mean*	*Std. Dev.*	*Min.*	*25%*	*Median*	*75%*	*Max.*
SWITCH	285	0.891	0.312	0	1	1	1	1
CHANGE	254	−0.189	0.656	−1	−1	0	0	1
CHANGE_TA	254	−0.185	0.648	−1	−1	0	0	1
IR1	285	0.035	0.023	0.002	0.021	0.03	0.044	0.195
IR2	285	0.086	0.057	0.005	0.046	0.067	0.108	0.362
CFOSTD	285	0.075	0.052	0.008	0.042	0.061	0.094	0.363
CEOD	285	0.656	0.476	0	0	1	1	1
CMV	285	0.839	0.941	−1.047	0.199	0.708	1.357	4.237
MCROA	285	0.001	0.028	−0.07	−0.01	−0.003	0.007	0.181
ABRETURN	285	0.622	4.657	−25.455	−0.884	−0.087	0.726	28.985
SACC	285	0.009	0.134	−0.615	−0.047	0	0.058	0.718
FDRET	285	3.117	22.773	−0.733	0.667	1.097	1.778	383
TIME	285	2,520	1,161	579	1,566	2,261	3,538	5,985
STATE	285	0.512	0.501	0	0	1	1	1
BIG10	285	0.295	0.457	0	0	0	1	1
VOL	285	0.056	0.05	0.019	0.034	0.043	0.058	0.519
SREP	285	0.446	0.498	0	0	0	1	1
MKT	285	7.251	1.834	2.45	5.89	6.92	8.62	10.41
PROCEEDS (Millions of RMB)	285	1,550.66	6,313.727	38.584	362.405	616	1,069.82	99,939

Note:
Refer to Appendix A for definition of variables.

reported in Francis et al. (2005). Whereas Francis et al. (2005) estimate the standard deviation of residuals over five years, the length of our estimation varies depending on how long a firm waits for its first SEO after its IPO. The other measure of information risk, IR2, has a mean (median) of 0.086 (0.067). Discretionary accruals in the year before the SEO (SACC) has a mean of 0.009. CFOSTD, which measures the standard deviation of operating cash flows deflated by assets, has a mean of 0.075. CEOD is a dummy variable that is equal to 1 if there is a CEO turnover between the IPO and the SEO. Just over 65% of the firms experienced CEO turnover during the period.

Firms usually have very high first-day returns in their IPO, and thus underpricing is excessive. The mean (median) of FDRET is 311.7% (109.7%). Such excessive underpricing can be primarily attributed to the price cap set by the CSRC, which imposes a limit on the PE ratio when the IPO offering price is set. This practice distorts the efficiency of price setting by underwriters in IPOs. The change in market capitalization from IPO to SEO (CMV) has a mean of 0.839 and a median of 0.708. On average, the market value of firms increases prior to an SEO. These results are consistent with the argument that firms issue new equity when they are overvalued. Each firm waited, on average, 2,520 days, or 6.9 years, from the date of its IPO to return to the market for its first SEO. The median number of waiting days is 2,261 days, or 6.195 years. The elapsed period is much longer than the 749 days documented for US firms by Krigman et al. (2001). SEO proceeds (PROCEEDS) are, on average, RMB 1550.66 million. SREP, the IPO underwriter's reputation at the time of the SEO, has a mean of 0.446, which suggests that 44.6% of the IPO underwriters were in the Top-10 category at the time of the SEOs.

Just over half (51.2%) of our sample firms are ultimately controlled by the state (STATE), and 29.5% of them hired a Top-10 auditor prior to their SEO (BIG10). MCROA, the average change in ROA in each year between the IPO and the SEO, has a mean of 0.001, which indicates that, on average, firms increased their performance during the period from IPO to SEO. ABRETURN, cumulated abnormal returns during this period, as calculated by monthly stock returns, has a mean of 0.622. Firm risk (VOL) is measured by the standard deviation of stock returns between the IPO and the SEO. Its mean and median are 0.056 and 0.043, respectively. MKT is the index of marketization of China's provinces, which measures the institutional environment in different regions of the country.[5] A high value on this index implies an institutional environment with more free-market elements. Based on the location of incorporation, we identify the MKT for each firm. Its mean (median) is 7.251 (6.92). See Appendix A for variable definitions.

4. EMPIRICAL RESULTS

(i) Univariate Analysis

Panel A of Table 3 presents univariate comparisons of the switching and non-switching firms. Compared to the latter, the former, on average, waited significantly longer for their first SEOs, a finding consistent with James' (1992) argument that the longer the

5 Fan and Wang (2003) provide details on how to construct this index. The National Economic Research Institute (NERI) publishes these indices for 1998 to 2005. Due to a lack of data, we use the index for 2005 for 2006 and 2007.

Table 3

Univariate Analysis

Panel A: Comparisons Between Switching Firms and Non-switching Firms

Variables	*SWITCH* = 0 *Mean*	*SWITCH* = 1 *Mean*	*t value*
IR1	0.030	0.036	−1.33
IR2	0.090	0.085	0.42
CFOSTD	0.077	0.074	0.32
CEOD	0.452	0.681	−2.56**
CMV	0.651	0.862	−1.18
MCROA	0.010	0.000	1.82*
ABRETURN	0.713	0.611	0.11
SACC	0.013	0.008	0.20
FDRET	0.990	3.377	−0.55
TIME	1,598	2,632	−4.86***
STATE	0.323	0.535	−2.25**
BIG10	0.355	0.287	0.78
VOL	0.047	0.057	−1.06
SREP	0.516	0.437	0.83
MKT	7.798	7.184	1.77*
PROCEEDS (Millions of RMB)	2,171.996	1,474.828	0.56
Observations	31	254	

Panel B: Underwriter Choice by IR1 Quintiles

Quintile	*Obs*	*Percentage of Switching Firms*	*Percentage of State-Owned Firms*	*Obs*	*CHANGE*	*CHANGE_TA*
Lowest	57	84.2%	43.9%	50	0.080	0.040
2	57	91.2%	54.4%	51	−0.353	−0.353
3	57	89.5%	59.6%	51	−0.157	−0.098
4	57	86.0%	49.1%	51	−0.255	−0.275
Highest	57	94.7%	49.1%	51	−0.255	−0.235
Difference between (Lowest, Highest)		−10.5% (−1.84)*	−5.3% (−0.56)		0.335 (2.60)**	0.275 (2.20)**

Notes:
Panel A of Table 3 compares firm characteristics between firms switching underwriters and firms without switching. Panel B of Table 3 presents results on underwriter choice in each quintile of information risk (IR1). Refer to Appendix A for definition of variables. In Panel B, *t*-statistics are reported in parentheses. *, ** and *** indicate significance at 10%, 5% and 1% respectively.

elapsed period is, the less valuable the relationship capital is. The firms that switched underwriters had less performance increase between the IPO and the SEO. The mean of MCROA is 0 for switching firms, whereas that of the non-switching firms is 0.01. The switching firms are more likely to be controlled by the state, 53.5% versus 32.3% of non-switching firms. In addition, the switching firms are more likely to experience a CEO turnover between the IPO and the SEO, 68.1% versus 45.2% of non-switching firms. Furthermore, they are also more likely to come from regions that have achieved less progress in the institutional transition to marketization. Compared to 7.798 of MKT in non-switching firms, switching firms had 7.184 of MKT.

The switchers and non-switchers do not differ significantly in information risk, discretionary accruals right before the SEO, underpricing in the IPO, the amount of

SEO proceeds, firm risk or changes in market capitalization. In addition, both groups have IPO underwriters with similar reputations at the time of their SEOs.

In Panel B of Table 3, the 285 sample firms are classified into five groups based on the quintiles of information risk (IR1). The lowest (highest) group consists of firms with the lowest (highest) quintile of information risk. The other three groups form the middle groups. We perform t tests on the difference in underwriter choice between quintile 1 (the lowest) and quintile 5 (the highest) and find that a low degree of information risk is related to a lower probability of an underwriter switching: 84.2% in the lowest group versus 94.7% in the highest group. The percentage of state-owned companies is not significantly different conditional on information risk. There are significant differences in CHANGE and CHANGE_TA between the lowest and highest groups. These results are consistent with our second hypothesis, which posits that if firms switch underwriters, those with less information risk are more likely to change to a more reputable underwriter, whereas those with greater such risk are more likely to change to a less reputable underwriter.[6]

(ii) Information Risk, State Ownership and the Switching Decision

We test our first hypothesis by regressing SWITCH on information risk (IR1), the IPO underwriter's reputation at the time of the SEO (SREP), and the interaction between IR1 and SREP. Our main regression is as follows:

$$\textit{Probability}(\text{SWITCH}) = \beta_0 + \beta_1 \text{IR1} + \beta_2 \text{SREP} + \beta_3 \text{SREP} * \text{IR1} + \sum \beta_k \textit{Controls}_k + \varepsilon. \tag{2}$$

β_1 captures the effect of IR1 on the probability of an underwriter switching when the IPO underwriter's reputation is poor, and $\beta_1 + \beta_3$ captures the effect of IR1 on that probability when the IPO underwriter's reputation is good. Our first hypothesis predicts that β_1 will be negative and $\beta_1 + \beta_3$ positive.

Following the prior research, we add additional control variables to the model. Fernando et al. (2005) find firm quality, such as a change in operating performance and the daily volatility of stock returns, to have an impact on the choice of underwriter. Thus, we include the average annual change in return on assets between the IPO and the SEO (MCROA), cumulated abnormal returns during the period from the IPO to the SEO (ABRETURN), and the standard deviation of daily stock returns over that period (VOL) as control variables. We include the change in market capitalization (CMV) to capture the change in size from IPO to SEO (Fernando et al., 2005; and Fang, 2005). James (1992) and Krigman et al. (2001) suggest that the performance of a firm's underwriter in its IPO may affect its decision to switch. Accordingly, we control the first-day IPO return (FDRET) in our analysis. We also include the natural log of the number of elapsed days from IPO to SEO (TIME), consistent with James (1992), Krigman et al. (2001) and Fernando et al. (2005).

Following Jo et al. (2007), we also control the effect of audit quality in the underwriter switching, and, consistent with Defond et al. (1999) and Wang et al. (2008), we define a dummy variable of such quality (BIG10, set to equal 1 for a Top-10 auditor, and 0 otherwise). Wang et al. (2008) suggest that the institutional

6 However, we should be cautious about this inference because CHANGE (CHANGE_TA) is not monotonically decreasing in IR1, and the second quintile has a mean CHANGE (CHANGE_TA) that is lower than that of the highest quintile.

environment in different regions has a great impact on a firm's choice of auditor. Accordingly, we add MKT into this model to control for any systematic influence of institutional environment. We also control the amount of SEO proceeds (PROCEEDS) and discretionary accruals right before the SEO. To avoid the effects of outliers, we winsorize all of the continuous variables at the top and bottom 1%. See Appendix B for correlations among variables.

Table 4 presents the results of probit regressions on how information risk and the reputation of the IPO underwriter at the time of the SEO interactively affect the decision to switch underwriters. All Z-statistics are based on robust standard errors. Consistent with our conjecture, individually, neither information risk nor IPO underwriter reputation at the time of the SEO has any impact on the switching decision. In our base model (model 1), the coefficients for IR1 and SREP are insignificant. However, model 2 documents a significant interaction effect for information risk and IPO underwriter's reputation at the time of the SEO. More specifically, the interaction between IR1 and SREP has a positive coefficient of 49.394, significant at the 1% level. The test of $\beta_1 + \beta_3$ is significant, which suggests that if an IPO underwriter has a good reputation at the time of an SEO, then a firm with a higher degree of information risk is more likely to switch underwriters. The coefficient of IR1 (β_1) is negative but not significant, however, which indicates that if the reputation of the IPO underwriter is bad at the time of the SEO, then information risk has no effect on the underwriter switching decision. The pseudo R^2 improves to 34.3% in model 2 from 30.4% in model 1. These results partially support our first hypothesis that a mismatch between information risk and IPO underwriter reputation at the time of an SEO leads to an underwriter switch.

Notably, some of our control variables help to explain the underwriter switching decision. Consistent with the findings in James (1992), we document a positive association between TIME and the probability of switching underwriters. The greater the number of days that have elapsed between its IPO and its SEO, the more likely a firm is to switch to a new underwriter. There is a significantly negative relation between a change in operating performance during the IPO to SEO period (MCROA)[7] and the likelihood of an underwriter switching, which confirms the evidence presented in Fernando et al. (2005) that as firm quality declines, a re-matching process occurs and leads to an underwriter switching. MKT is found to be negatively related to the probability of an underwriter switching, but not significantly so, which implies that, in regions with a more developed market system, firms are less likely to make such a switch. We also find a negative association between SEO proceeds (PROCEEDS) and the probability of such a switch.

In model 3, we test hypothesis 3a, which posits that state ownership moderates the interaction effect of information risk and IPO underwriter reputation at the time of the SEO. We find the interaction with state ownership to have no significant coefficient, which suggests that the interaction effect of accruals quality and IPO underwriter reputation exists for both state- and non-state-owned firms. Hence, there is no evidence to support hypothesis 3a.

7 We also use the compounded growth of earnings (CEG) during the period from IPO to SEO as a measure of firm performance and the conclusions remain the same.

Table 4
Probit Estimates of SWITCH/NON-SWITCH Choice

	Model 1	*Model 2*	*Model 3*
IR1	3.385	−7.803	0.042
	(0.45)	(−1.01)	(0.00)
SREP	−0.234	−1.480***	−1.860***
	(−0.86)	(−3.16)	(−3.11)
STATE	0.339	0.523*	0.745
	(1.18)	(1.70)	(1.38)
SREP ∗ IR1		43.394***	48.853**
		(3.04)	(2.44)
STATE ∗ IR1			−14.329
			(−1.36)
STATE ∗ SREP			0.789
			(0.94)
STATE ∗ SREP ∗ IR1			−7.558
			(−0.31)
CMV	0.285	0.355*	0.318
	(1.51)	(1.81)	(1.60)
MCROA	−8.537**	−6.996*	−7.940**
	(−2.22)	(−1.80)	(−2.14)
ABRETURN	0.001	−0.015	0.001
	(0.03)	(−0.29)	(0.01)
SACC	0.669	1.298	1.275
	(0.77)	(1.59)	(1.53)
FDRET	0.002	0.001	0.003
	(0.56)	(0.28)	(0.72)
TIME	1.506***	1.634***	1.621***
	(4.19)	(4.21)	(4.29)
BIG10	−0.108	−0.203	−0.309
	(−0.40)	(−0.71)	(−1.10)
VOL	11.124**	10.900**	11.068**
	(2.12)	(2.49)	(2.42)
MKT	−0.124	−0.125	−0.119
	(−1.64)	(−1.60)	(−1.54)
PROCEEDS	−0.252*	−0.302**	−0.304**
	(−1.85)	(−2.03)	(−2.05)
Industry, Year	Controlled	Controlled	Controlled
Observations	285	285	285
Pseudo R^2	0.304	0.343	0.361
χ^2 for $\beta_1 + \beta_3 = 0$		7.25***	5.90**

Notes:
The dependent variable is SWITCH. Refer to Appendix A for definition of variables. Intercepts are included but not reported. *Z*-statistics calculated from robust standard errors are reported in parentheses. *, ** and *** indicate significance at 10%, 5% and 1% respectively.

(iii) Information Risk, State Ownership and Underwriter Choice in Switching Firms

Our second hypothesis examines the type of underwriter a firm chooses if it decides to switch from its IPO underwriter. We consider a sub-sample of 256 firms that actually changed underwriters for their SEO. We run an ordered probit regression with the dependent variable CHANGE, which equals −1 when the firm switches from a Top-10

underwriter to a small underwriter, 0 when it switches to an underwriter within the same category (Top-10 versus small), and 1 when it switches from a small underwriter to a Top-10 underwriter. CHANGE is based on the classification of underwriter reputation ranked by market share. We also use CHANGE_TA, a variable based on the classification of underwriter reputation ranked by size.

The prior research suggests that underwriter reputation and accruals quality are endogenous (see, for instance, Jo et al., 2007). Therefore, analysis that ignores the endogeneity problem may result in biased and inconsistent estimates. We apply a 2SLS estimation approach to mitigate the endogeneity between information risk and the choice of underwriter reputation (Maddala, 1983; Greene, 2000; and Wooldridge, 2001). In the first stage, we use instrumental variables and other control variables to estimate information risk. The first-stage regression is:

$$\text{IR1} = \beta_0 + \beta_1 \text{CFOSTD} + \beta_2 \text{CEOD} + \sum \beta_k \mathit{Controls}_k + \varepsilon. \quad (3)$$

In this first-stage regression, we use two instrumental variables: the standard deviation of operating cash flow (CFOSTD) and CEO turnover from IPO to SEO (CEOD). The existing literature shows that abnormal accruals are negatively related to operating cash flows (for instance, Dechow, 1994; and Jo et al., 2007). Therefore, the variability of abnormal accruals (our proxy for information risk) should be related to the variation in operating cash flows. Our second instrument is CEO turnover in the IPO to SEO period (CEOD). Different CEOs may consider accounting information differently. Some studies (e.g., Murphy and Zimmerman, 1993) suggest that CEO turnover has an impact on accruals quality. The correlation tests presented in Appendix B show that in the sub-sample, CFOSTD and CEOD are significantly correlated with IR1 (0.29 and 0.19, respectively), whereas unreported results suggest these two variables have no significant correlations with CHANGE and CHANGE_TA. The first-stage regression results in Appendix C confirm our conjectures about these instruments, two of which are positively associated with the variability of abnormal accruals (IR1), our proxy of information risk.

In the second-stage regression, we include the estimated value of information risk from the first-stage regression in the ordered probit model of CHANGE (or CHANGE_TA), as follows:

$$\text{CHANGE} = \gamma_0 + \gamma_1 \widehat{\text{IR1}} + \gamma_2 \text{STATE} + \gamma_3 \text{STATE} * \widehat{\text{IR1}} + \sum \gamma_k \mathit{Controls}_k + \varepsilon. \quad (4)$$

In this regression, $\widehat{\text{IR1}}$ is the estimated value of information risk from the first-stage regression. We include STATE and the interaction between STATE and $\widehat{\text{IR1}}$ to test hypotheses 2 and 3. γ_1 captures the effect of information risk on underwriter change when the issuing firm is non-state owned, and $\gamma_1 + \gamma_3$ captures this effect when the issuing firm is state-owned. Hypothesis 2 predicts that γ_1 will be significantly negative without the interaction between STATE and $\widehat{\text{IR1}}$, and hypothesis 3b suggests that γ_3 will be significantly positive.

Table 5 reports the results from the ordered probit model of CHANGE (CHANGE_TA) when the estimated value of information risk is employed. We find that in models 1 and 3, the choice of underwriter reputation is negatively associated with $\widehat{\text{IR1}}$, as predicted by our second hypothesis. The results indicate that firms with a low degree of information risk are more likely to change to a more reputable underwriter

Table 5

Ordered Probit Regressions on Underwriter Choice

Depvar	*Model 1* (*CHANGE*)	*Model 2* (*CHANGE*)	*Model 3* (*CHANGE_TA*)	*Model 4* (*CHANGE_TA*)
$\widehat{\text{IR1}}$	−23.853	−44.054***	−26.961*	−48.188***
	(−1.57)	(−2.71)	(−1.79)	(−2.98)
STATE	0.146	−1.219**	0.220	−1.200**
	(0.86)	(−2.33)	(1.30)	(−2.29)
STATE $*$ $\widehat{\text{IR1}}$		38.196***		39.777***
		(2.78)		(2.86)
CMV	−0.057	−0.066	−0.065	−0.074
	(−0.57)	(−0.67)	(−0.65)	(−0.75)
MCROA	11.165**	12.461***	12.427**	13.868***
	(2.31)	(2.66)	(2.56)	(2.94)
ABRETURN	0.006	0.002	0.008	0.003
	(0.30)	(0.11)	(0.38)	(0.17)
SACC	0.205	0.061	0.207	0.059
	(0.37)	(0.12)	(0.37)	(0.11)
FDRET	0.002	0.001	0.002	0.001
	(0.95)	(0.36)	(1.01)	(0.39)
BIG10	−0.091	−0.061	−0.185	−0.157
	(−0.50)	(−0.35)	(−1.03)	(−0.89)
VOL	4.413**	5.352***	6.055***	7.111***
	(2.30)	(2.75)	(2.93)	(3.37)
SREP	−1.038***	−1.105***	−0.962***	−1.029***
	(−6.20)	(−6.60)	(−5.69)	(−6.08)
MKT	0.031	0.020	0.032	0.020
	(0.66)	(0.41)	(0.65)	(0.40)
PROCEEDS	0.214**	0.234***	0.135	0.155*
	(2.50)	(2.65)	(1.48)	(1.68)
Industry, Year	Controlled	Controlled	Controlled	Controlled
Observations	254	254	254	254
Pseudo R^2	0.153	0.170	0.154	0.172
χ^2 for $\gamma_1 + \gamma_3 = 0$		0.13		0.27

Notes:
The dependent variables are CHANGE in model 1 and model 2, and CHANGE_TA in model 3 and model 4. Refer to Appendix A for definition of variables. Intercepts are included but not reported in the table. *Z*-statistics calculated from robust standard errors are reported in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% respectively.

during an SEO, whereas those with a higher degree of such risk match up with less reputable underwriters. However, the evidence is weak, as the coefficient is significant only at the 10% level when CHANGE_TA is used as the dependent variable.

In models (2) and (4), we interact information risk with state ownership to test hypothesis 3b, and find $\widehat{\text{IR1}}$ to be significantly negative in both regressions: γ_1 is −44.054 in model 2 and −48.188 in model 4, significant at the 1% level. These results indicate that among firms that are not owned by the state, a lower level of information risk is associated with a greater likelihood of changing to a more prestigious underwriter. The coefficients of interaction (γ_3) are positive and significant at the 1% level, which suggests that, relative to their non-state-owned counterparts,

state-owned listed firms exhibit a weaker link between less information risk and a greater likelihood of changing to a more prestigious underwriter. $\gamma_1 + \gamma_3$ is, in fact, not significant at all, which suggests that there is no relationship between information risk and underwriter change in state-owned firms. This evidence supports hypothesis 3b and also provides an explanation for the weak results from models 1 and 3: the relationship between information risk and the choice of underwriter reputation exists only in non-state-owned firms.

Several control variables are also significant in all of the models. Changes in operating performance from IPO to SEO (MCROA), firm risk (VOL) and SEO proceeds (PROCEEDS) are positively related to the likelihood of changing to a better underwriter, whereas IPO underwriter reputation at the time of the SEO (SREP), in contrast, has a negative impact on such likelihood.

(iv) Alternative Measure of Information Risk

We now turn to another measure of information risk, IR2, which is the standard deviation of abnormal accruals estimated from the modified Jones model (Dechow et al., 1995):

$$\frac{\mathrm{TA}_{i,t}}{Assets_{i,t-1}} = \phi_1 \frac{1}{Assets_{i,t-1}} + \phi_2 \frac{\Delta\mathrm{REV}_{i,t} - \Delta\mathrm{AR}_{i,t}}{Assets_{i,t-1}} + \phi_3 \frac{\mathrm{PPE}_{i,t}}{Assets_{i,t-1}} + v_{i,t}. \tag{5}$$

ΔREV is the change in revenue, ΔAR is the change in net receivables, and PPE is the gross value of property, plant and equipment.

The results for information risk (IR2) and the switching decision using this measure are similar to those presented in Table 4. Table 6 reports the results of the ordered probit regressions using the 2SLS method. All of the coefficients on $\widehat{\mathrm{IR2}}$ are significantly negative in models 1 to 4, and the interaction between $\widehat{\mathrm{IR2}}$ and STATE is significantly positive, which suggests that, for non-state-owned companies, a lower degree of information risk is related to a higher probability of changing to a better underwriter. The results indicate that state ownership moderates (that is, weakens) the impact of information risk on underwriter choice.

5. CONCLUSION

Underwriters play an important role in equity offerings. Firms purchase the services of underwriters, and, at the same time, underwriters choose which firms to serve due to reputation concerns. Fernando et al. (2005) suggest that in this mutual choice situation, a rematch between firm and underwriter takes place during SEOs based on firm quality and underwriter capability.

In this paper, we empirically examine how information risk affects this mutual choice between SEO firm and underwriter. More specifically, we investigate whether information risk and the reputation of the IPO underwriter at the time of the SEO interactively affect the switching decision, and whether state ownership moderates this interaction effect. Among firms that do switch to a new underwriter for their SEOs, we also consider the relationship between information risk and the type of underwriter the firm changes to, as well as the extent to which state ownership affects this relationship.

Table 6

Ordered Probit Regressions on Alternative Measure of Information Risk (IR2)

Depvar	*Model 1* (*CHANGE*)	*Model 2* (*CHANGE*)	*Model 3* (*CHANGE_TA*)	*Model 4* (*CHANGE_TA*)
$\widehat{\text{IR2}}$	−4.274**	−7.727***	−4.335**	−8.885***
	(−2.05)	(−2.74)	(−2.09)	(−3.24)
STATE	0.195	−0.302	0.277*	−0.371
	(1.17)	(−0.90)	(1.66)	(−1.13)
STATE ∗ $\widehat{\text{IR2}}$		5.775		7.550**
		(1.63)		(2.17)
CMV	−0.024	−0.052	−0.028	−0.064
	(−0.25)	(−0.53)	(−0.28)	(−0.65)
MCROA	5.573*	5.798*	5.985*	6.309**
	(1.73)	(1.88)	(1.83)	(2.03)
ABRETURN	0.020	0.020	0.024	0.023
	(1.17)	(1.12)	(1.38)	(1.32)
SACC	0.460	0.378	0.451	0.347
	(0.76)	(0.67)	(0.74)	(0.62)
FDRET	0.004***	0.005***	0.005***	0.005***
	(2.74)	(2.81)	(3.12)	(3.26)
BIG10	−0.049	−0.082	−0.139	−0.183
	(−0.27)	(−0.45)	(−0.77)	(−1.01)
VOL	2.634*	3.022**	4.034**	4.595***
	(1.89)	(2.09)	(2.55)	(2.72)
SREP	−1.112***	−1.136***	−1.042***	−1.077***
	(−6.65)	(−6.71)	(−6.20)	(−6.29)
MKT	0.071	0.065	0.075*	0.068
	(1.64)	(1.51)	(1.69)	(1.52)
PROCEEDS	0.181**	0.198**	0.095	0.115
	(2.37)	(2.50)	(1.12)	(1.33)
Industry, Year	Controlled	Controlled	Controlled	Controlled
Observations	254	254	254	254
Pseudo R^2	0.159	0.164	0.158	0.168
χ^2 for $\gamma_1 + \gamma_3 = 0$		0.63		0.30

Notes:
The dependent variables are CHANGE in model 1 and model 2, and CHANGE_TA in model 3 and model 4. Refer to Appendix A for definition of variables. Intercepts are included but not reported in the table. *Z*-statistics calculated from robust standard errors are reported in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% respectively.

Using 285 SEO firms in China from 1997 to 2007, we find that when a mismatch occurs, firms are more likely to switch underwriters. Our results show that when the reputation of a firm's IPO underwriter is good at the time of the SEO, and that firm's level of information risk is high, it has a greater probability of switching its underwriter. However, when the reputation of a firm's IPO underwriter is bad at the time of the SEO, information risk has no effect on the decision to switch its underwriter. Further, we find that firms with a low degree of information risk are more likely to switch to more prestigious underwriters, whereas those with a high degree of such risk tend to choose less prestigious underwriters, although this effect exists primarily in

non-state-owned firms. Compared to non-state-owned companies, state-owned firms exhibit a weaker link between information risk and underwriter reputation type.

This study is subject to several limitations. First, we use only one aspect of accruals quality, the variability of abnormal accruals in earnings, as a proxy of information risk. The prior literature offers several market-based measures of accruals quality, such as ERC and the R^2 of regressing stock returns on earnings. However, stock prices were far from efficient during the 1997 to 2007 period in the Chinese stock market, as the tradable shares of each listed company were so few that their prices were subject to manipulation. Second, our analysis leaves out the other valuable services provided by underwriters, such as analyst following and research coverage. These are worth further investigation in future studies. Third, it is possible that state ownership and information risk are endogenous, as this study does not control for such endogeneity. In spite of these limitations, we provide solid evidence to show how information risk affects underwriter switching in emerging markets, thus complementing the findings of studies carried out in developed countries.

APPENDIX A

Definition of Variables

SWITCH	Dummy variable, 1 if a firm changes its lead underwriter in SEO, otherwise 0
CHANGE	Ordered variable, −1 when the firm switches from a Top-10 underwriter to a small underwriter, 0 when the firm switches underwriter within the same category (Top-10 vs. small), and 1 when the firm switches from a small underwriter to a Top-10 underwriter. The classification of Top-10 or small is based on market share.
CHANGE_TA	Ordered variable, −1 when the firm switches from a Big-10 underwriter to a small underwriter, 0 when the firm switches underwriter within the same category (Big-10 vs. small), and 1 when the firm switches from a small underwriter to a Big-10 underwriter. The classification of Big-10 or small is based on underwriter size.
IR1	Information risk measure, standard deviation of abnormal accruals between IPO and SEO, estimated from Dechow and Dichev's (2002) model
IR2	Information risk measure, standard deviation of abnormal accruals between IPO and SEO, estimated from modified Jones model
CFOSTD	Standard deviation of operating cash flows between IPO and SEO
CEOD	Dummy variable, 1 if a firm changes its CEO between IPO and SEO, otherwise 0
CMV	Change in natural log of market capitalization from IPO to SEO
MCROA	Average change in return on assets of each year during the period from IPO to SEO
ABRETURN	Cumulated Abnormal Return between IPO and SEO, using monthly data
FDRET	First day return of IPO
TIME	Days from IPO to SEO, natural log is used in regressions
STATE	Dummy variable, 1 if the ultimate controlling shareholder is the state, otherwise 0
VOL	Volatility of daily stock returns between IPO and SEO
BIG10	Dummy variable, 1 if the auditor is ranked among top 10, otherwise 0. Top 10 is based on assets audited
SREP	Dummy variable, 1 if IPO underwriter is ranked among Top 10 at the time of SEO, otherwise 0; Top 10 is based on market share
MKT	Index of Marketization of China's provinces
PROCEEDS	The amount of Proceeds from SEO, natural log is used in regressions

APPENDIX B

Correlation Table

	IR1	IR2	CFOSTD	CEOD	CMV	MCROA	ABRETURN	SACC	FDRET	TIME	STATE	BIG10	VOL	SREP	MKT	PROCEEDS
IR1	1.00	0.22***	0.27***	0.21***	0.00	0.28***	−0.06	−0.03	−0.03	0.18***	0.00	0.02	0.10*	−0.03	−0.08	0.04
IR2	0.23***	1.00	0.74***	0.12**	0.10*	0.05	0.01	0.22***	0.01	0.06	−0.03	0.06	0.03	−0.02	0.13**	0.11*
CFOSTD	0.29***	0.75***	1.00	0.24***	0.10	0.11*	−0.04	0.02	0.02	0.18***	−0.03	0.07	0.13**	0.03	0.06	0.08
CEOD	0.19***	0.10	0.22***	1.00	0.19***	0.07	−0.01	0.01	0.06	0.48***	0.05	0.05	0.12**	0.02	−0.07	0.07
CMV	0.00	0.10	0.12*	0.20***	1.00	0.09	0.41***	0.12**	0.12**	0.27***	0.07	0.12**	0.15**	−0.06	0.07	0.30***
MCROA	0.28***	0.08	0.16***	0.11*	0.10	1.00	0.09	−0.05	0.00	−0.06	−0.07	0.07	−0.01	−0.11*	0.03	0.02
ABRETURN	−0.05	0.01	−0.04	0.01	0.41***	0.07	1.00	0.05	−0.31***	−0.02	0.13**	0.03	0.22***	−0.07	0.06	0.19***
SACC	0.00	0.21***	0.01	0.02	0.11*	−0.06	0.03	1.00	−0.03	−0.03	0.06	−0.01	−0.05	0.07	0.00	0.03
FDRET	−0.04	0.01	0.02	0.06	0.12*	0.00	−0.32***	−0.03	1.00	0.08	−0.05	0.09	0.12**	0.06	−0.02	0.05
TIME	0.16***	0.07	0.24***	0.49***	0.29***	−0.02	−0.01	0.01	0.07	1.00	0.07	0.05	0.10*	−0.05	0.09	0.12**
STATE	−0.04	0.00	0.01	0.04	0.07	−0.11*	0.12*	0.10	−0.06	0.03	1.00	0.09	0.03	0.07	−0.21***	0.19***
BIG10	0.01	0.07	0.06	0.10	0.13**	0.05	0.02	0.01	0.10*	0.07	0.09	1.00	0.07	0.09	0.10*	0.26***
VOL	0.11*	0.02	0.10	0.10	0.15**	0.01	0.24***	−0.06	0.12**	0.11*	0.03	0.08	1.00	−0.02	−0.02	0.00
SREP	0.01	−0.03	−0.01	0.06	−0.04	−0.11*	−0.06	0.09	0.06	−0.04	0.09	0.11*	−0.03	1.00	−0.14**	0.05
MKT	−0.06	0.13**	0.10	−0.05	0.08	0.03	0.07	−0.03	−0.02	0.13**	−0.15**	0.14**	0.00	−0.15**	1.00	0.12**
PROCEEDS	0.01	0.10	0.08	0.08	0.34***	0.00	0.22***	0.07	0.05	0.12*	0.16**	0.25***	0.02	0.04	0.14**	1.00

Notes:
The upper includes correlations for total sample, and the lower includes correlations for switching firms. Refer to Appendix A for variable definitions. *, ** and *** indicate significance at 10%, 5% and 1% respectively.

APPENDIX C

First Stage Regression on Information Risk

	MODEL	
	IR1	*T value*
CFOSTD	0.081*	1.68
CEOD	0.006**	2.32
STATE	−0.003	−0.97
CMV	−0.002	−0.80
MCROA	0.234***	3.18
ABRETURN	−0.0005	−1.21
SACC	0.006	0.66
FDRET	−0.0001**	−2.32
BIG10	−0.001	−0.47
VOL	0.066*	1.81
SREP	0.002	0.65
MKT	−0.001	−1.30
PROCEEDS	0.002	1.15
Constant	0.001	0.02
Industry	Controlled	
Year	Controlled	
Observations	254	
R^2	0.27	

Notes:
The dependent variable is IR1. Refer to Appendix A for definition of variables. T-statistics are calculated from robust standard errors. *, ** and *** indicate significance at the 10%, 5% and 1% respectively.

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