The role of internal and external certification mechanisms in seasoned equity offerings

Abstract

When conducting their seasoned equity offerings (SEOs), US firms have been increasingly relying on shelf offering or accelerated offering rather than non-shelf offering or traditional book building, the predominant issuance methods in the past. Previous studies find that the unpopularity of shelf or accelerated offering in the past is due to the under-certification problem. Therefore, the change in firms' preferred issuance methods suggests that firms must have obtained adequate certification through various ways. In this paper, we study several potential internal and external certification mechanisms that issuers can utilize and explore their roles in the SEO process. We find that the internal certification via sound corporate governance affects firms' choice of the issuance method between shelf (accelerated) and nonshelf (non-accelerated) offerings, while the external certification through acquiring high-quality auditing services impacts the issuance costs.

JEL classification: G14, G24, G32

Keywords: Shelf offering, accelerated offering, seasoned equity offering, flotation costs, corporate governance, due diligence

1. Introduction

Extant research supports the view that corporate financing policy is strongly influenced by agency problems and information asymmetry arising from the separation of ownership and operational control of a firm (Jensen and Meckling, 1976; Myers and Majluf, 1984). Mande, Park and Son (2012) investigate whether corporate governance quality affects a firm's choice between debt and equity financing. For a sample of more than 2,000 US debt and equity offers, they find that firms with more effective corporate governance are more likely to issue equity, suggesting that effective governance reduces the higher (compared with debt) agency cost of equity financing. Moreover, they find that the positive relation between governance and the probability of equity financing is more pronounced when there is higher information asymmetry between an issuer and outside investors. Echoing Mande et al. (2012), Dutordoir, Strong, and Ziegan (2014) find that corporate governance quality is a significant determinant of Western European issuers' financing choice among convertible debt, straight debt, and equity. In particular, issuers with weaker governance are more likely to issue convertible debt. In this paper, our first motivation is to examine whether corporate governance quality influences issuers' choice between shelf and non-shelf offering and between accelerated and non-accelerated offering. A shelf registration allows an eligible firm to issue its securities whenever it chooses to do so within two years of the registration without seeking further regulatory approval. An accelerated offering enables an issuer to complete an offering within one to two days. Given the much-shorter time frame for underwriters and investors to conduct their due diligence for shelf or accelerated offerings, we expect more severe agency problems and higher information asymmetry among an issuer, its underwriter(s), and investors for such offerings. Therefore, we posit that an issuer with better corporate governance quality may be more likely to conduct a

shelf or accelerated offering, because the benefit of good governance in reducing the costs of agency problems and information asymmetry is particularly higher (Mande et al., 2012; Dutordoir et al., 2014). Using a sample of US equity offerings over the period of 2001 through 2007, we find evidence supporting such an argument.

In the context of equity issuance, shelf registered offerings have lower issuance costs than traditionally registered offerings (Bhagat, Marr, and Thompson., 1985; Autore, Kumar, and Shome, 2008). Yet in the past the majority of issuers chose the traditional offerings over shelf registration when issuing equity (Denis, 1991; Autore et al., 2008). This preference for a relatively expensive method of equity issuance has been attributed to the problem of under-certification faced by shelf issuers. The under-certification problem arises due to the short time period between the announcement and the issuance of equity in shelf offers that precludes adequate due diligence by underwriters. Autore et al. (2008) suggest that issuers choose shelf registration only when they are partially certified by mechanisms other than underwriter due diligence. Autore et al. (2008) identify two of such mechanisms: conducting shelf offering after the issuer has made several SEOs before and hence the issuer has been certified during those SEOs prior to the shelf offering; conducting shelf offerings after smaller stock price runups to signal to investors that the issuer is not selling overvalued equity. Turning to the choice between accelerated and non-accelerated offerings, Gao and Ritter (2010) find that issuers with less elastic demand curve for their stocks tend to conduct a non-accelerated offering (that is, fully marketed offering with traditional book building and road show) in which underwriters are hired to create demand (that is, flatten the demand curve). Issuers with more elastic demand curve should therefore prefer to conduct an accelerated offering, which reduces the time taken to issue new securities and lowers the flotation costs. However, the accelerated offering method also

suffers from the same drawback of limited due diligence time for underwriters. Thus, given the risky nature of the accelerated offer method, it makes sense for underwriters to ensure that a certification device is in place before accepting a deal in order to protect their reputation and lower their litigation risk. The second motivation of our paper is to examine whether a firm's internal corporate governance arrangement could serve as a potential certification device for a shelf or an accelerated offering. We expect that firms with high quality internal governance mechanisms may require less external certification via underwriters. Given the lower issuance costs of shelf or accelerated offerings as compared to non-shelf or non-accelerated offerings, we posit that firms with better governance quality are more likely to choose shelf (accelerated) offerings over non-shelf (non-accelerated) offerings. Our empirical evidence is consistent with such a view.

In addition to the choice of issuance methods, the issuance cost is also an important aspect of the SEO process. Lee and Masulis (2009) conduct a thorough investigation of SEOs' flotation costs and link an issuer's flotation costs to the quality of the issuer's accounting information. They argue that poor accounting information increases the uncertainty in an issuer's financial condition, decreases the demand for the issuer's stocks, and hence increases its issuance costs. Using a sample of US SEOs over the period of 1990 to 2002, Lee and Masulis (2009) find that the gross spread of an SEO is significantly negatively related to the quality of the issuer's accounting information, which is measured by the reliability of the accruals component of the issuer's accounting earnings. The third motivation of this paper is to examine whether the costs that an issuer is willing to pay to purchase external auditing service serve as an external certification of the quality of its accounting information. Auditors are a vital player in the SEO process. Underwriters and investors entrust the completeness and the accuracy of the financial

information of an issuer to auditors. Therefore, to the extent that better quality auditing work incurs higher auditing fees, we expect that issuers paying higher audit fees to purchase more stringent auditing have lower issuance costs. Indeed, our empirical test indicates that the gross spread of an issuer is significantly negatively associated with its audit fees.

This paper makes several contributions to the literatures on securities issuance and corporate governance. First, the paper contributes to the burgeoning strand of literature on how corporate governance affects firms' financing choices by extending the influence of governance from the choice between debt and equity (Mande et al. 2012) and the choice between convertible debt, straight debt, and equity (Dutordoir et al. 2014) to the choice between shelf and non-shelf and between accelerated and non-accelerated offerings. Second, the paper complements Autore et al. (2008) and Gao and Ritter (2010) and contributes to the literature on shelf and accelerated offerings by identifying another alternative (to underwriter certification) certification mechanism. Finally, the paper complements Lee and Masulis (2009) and adds to the literature on flotation costs by highlighting the role of audit fees as an external certification device.

Although we study a sample of US SEOs, the findings have implications also for firms operating in other countries. Pandes (2010), for example, reports that accelerated offerings, called bought deals, dominate Canadian SEOs. Over its sample period of 1993 through 2005, 72% of the SEOs in its sample are bought deals and they account for about 57% of the total proceeds raised by all the SEOs. Echoing Pandes (2010), Gunay and Ursel (2015) report that approximately 64% of all the SEOs executed in Canada over 1993 to 2013 are accelerated SEOs. In addition, Bortolotti, Megginson, and Smart (2008) document a global convergence of SEO methods toward accelerated offerings. In their sample of 31,242 SEOs from almost 100 countries conducted over 1991 to 2004, around 16% involve accelerated offerings. Our findings suggest

that, in countries where accelerated offerings are allowed, establishing sound corporate governance practices or acquiring high-quality auditing services can be effective ways to certify the quality of equity offerings when firms raise capital through accelerated offerings.

The remainder of the paper is organized as follows. In the next section, we provide the theoretical underpinnings for our empirical tests and develop the hypotheses. In section 3, we describe the data sources, our sample selection procedures, and the characteristics of our sample. In section 4, we report the empirical results and discuss their implications. Our concluding comments are presented in section 5.

2. Theoretical underpinnings

2.1. Shelf registration, underwriter certification, and internal certification via corporate governance

Rule 415 adopted by the Securities and Exchange Commission (SEC), also known as shelf registration, allows large firms to register all the securities they wish to sell over the subsequent two-year period and sell the securities whenever they choose to. This rule became effective in November 1983. The SEC stipulates that companies that wish to register their offerings under Rule 415 must be of adequate size by meeting a certain threshold of market capitalization, be of sound financial condition by meeting their financial obligations, and be timely in disclosing relevant information.[1]

Some researchers (see Bhagat et al., 1985, Kadapakkam and Kon, 1989, Autore et al., 2008, among others) argue that shelf offerings hold several benefits to issuers. First, Bhagat et al. (1985) point out that shelf offerings enable an issuer to time an offering to take advantage of

[1] The requirements have been revised since the adoption of Rule 415. For the detailed requirements in 1982, see Footnote 2 of Bhagat et al. (1985). For the latest detailed requirements, see www.sec.gov.

favorable market conditions. By aligning the offer with demand for its shares, issuers would be able to sell their equity at better prices. Kadapakkam and Kon (1989) find that shelf registration provides valuable market timing flexibility to new debt issues. Second, Bhagat et al. (1985) state that shelf offerings may reduce firms' issuance costs by increasing the number of bidding underwriters competing to win an offer and by lowering the fixed costs associated with SEC registration and the costs of printing and distributing detailed prospectuses. Third, Autore et al. (2008) find that issuers are increasingly valuing and utilizing the option embedded in a shelf registration to defer or abandon an offering.

Many studies, on the other hand, identify a significant disadvantage of shelf offerings: the reduced certification from underwriters. Myers and Majluf (1984) point out that mangers have more information about their firm value than outside investors, and managers may choose to issue equity when it is overvalued if they act in the interest of the existing shareholders. Investors are aware of this and act rationally. Therefore, investors consider that announcements of equity issues convey negative news, and stock prices decline at the announcements. In the equity issue process, underwriters have the capability and the incentive to alleviate the information asymmetry between mangers and investors and certify the validity of the issue price. Underwriters are capable of certifying an issue because once hired they spend adequate time conducting due diligence by analyzing detailed information on the issuer, interviewing its management, and obtaining assessment from sophisticated investors such as institutions. Underwriters are also motivated to properly certify the issue because failure to do so may damage their reputation, adversely affect their chance of securing an offer in the future, and increase their litigation risk. However, the significant role of certification by underwriters is greatly reduced in shelf offerings (see, for example, Blackwell, Marr, and Spivey, 1990).

According to Denis (1991), underwriters are less capable of certifying a shelf issue because the underwriters are often selected by the issuer on the same day when the offering is completed and hence there is little or no time for adequate due diligence. The underwriters are also less motivated to certify a shelf issue, because they are less sure of whether they will be chosen by the issuer since typically an increased number of underwriters compete to win a shelf offer. Many studies attribute the infrequent use of shelf offerings in the past to the under-certification problem (see, for example, Sherman, 1999).

However, more recently, Autore et al. (2008) study US SEOs conducted during 1990 to 2003 and document a resurgence in shelf offerings since 1997. They acknowledge the difficulties faced by investment bankers in conducting due diligence for firms that use shelf registration. They suggest that firms that use shelf registration mitigate the under-certification problem by using shelf offerings during periods when there is less need for underwriter certification. These include periods following low abnormal stock price runups, and after prior certification in previous seasoned offerings.

We argue that a firm's internal corporate governance arrangement could serve as a potential certification device. Thus firms with high quality internal governance mechanisms may preclude the need for external certification via underwriters. Given the benefits of shelf offerings as compared to non-shelf offerings, good governance firms will choose shelf offerings over non-shelf offerings. We thus propose the following hypothesis:

H1: *Firms with better internal corporate governance quality are more likely to choose shelf offerings when conducting SEOs, other things being equal.*

Our selection of corporate governance mechanisms as the certification device is motivated by numerous studies that establish the role of corporate governance in improving corporate

information environment. Xie, Davidson III, and DaDalt (2003) find that a board of directors and its audit committee with more financially sophisticated members and a more active, in terms of the meeting frequency, board and audit committee can significantly reduce the likelihood of mangers engaging in earnings management. Ajinkya, Bhojraj, and Sengupta (2005) document that a firm with higher proportion of outside directors and institutional shareholders are more likely to issue earnings forecast and such forecasts are more accurate, specific and less optimistically biased. Leuz, Nanda, and Wysocki (2003) find that stronger investor protection reduces mangers' incentive to mask the true firm performance through earnings management and suggest that better corporate governance improves the quality of reported earnings. In addition, two studies are of particular relevance. First, Mande et al. (2012) find that better corporate governance reduces the agency cost of equity and increases the likelihood for a firm to issue equity rather than debt. Second, Dutordoir et al. (2014) show that the governance quality affects an issuer's choice among convertible debt, straight debt, and equity, and weaker governance is associated with a higher chance of issuing convertible debt. These studies provide justification for corporate governance arrangements to be considered as a certification device in equity issuance process.

2.2. Accelerated offers, heightened risks, and internal certification via governance

Bortolotti et al. (2008) document that the number of accelerated offerings has been dramatically increasing globally since 2000. Gao and Ritter (2010) comprehensively study accelerated offerings in the US SEO market. According to these studies, US SEOs can be further classified into accelerated or non-accelerated offerings. Accelerated offerings include bought deals and accelerated bookbuilt offerings. In a typical bought deal, an issuer auctions its shares. Underwriters bid for the shares and the winning underwriter then resells the shares to

institutional investors within 24 hours without any road show or book building. In an accelerated bookbuilt offering, there is again no road show, and underwriters complete the underwriting at an accelerated pace (typically within 48 hours) that is much faster than the non-accelerated traditional bookbuilt offerings (average number of days between filing and offer date is 31).

For an SEO issuer, accelerated offerings have obvious advantages. First, it is much faster for a firm to raise capital. Second, it is much safer in terms of the price risk that the issuer bears, because all the price risk is taken by the winning underwriter in a bought deal and the price risk is shared by the underwriter in an accelerated bookbuilt offer. Third, according to Bortolotti et al. (2008), accelerated offers have lower gross spread and underpricing and comparable price impact when compared with non-accelerated offers.

On the other hand, accelerated offering has its drawbacks. First, for accelerated offers, underwriters typically form a smaller syndicate. Bortolotti et al. (2008) point out that the pricing accuracy is positively related to the size of the syndicate. Therefore, accelerated offers may be less accurately priced. Second, the much shortened timeframe for the underwriter to complete the offer, the absence of road show, and the absence of, or much hastened, book building cause the same under-certification problem discussed in the previous subsection. Third, underwriters have higher price risk because they have to bear all the price risk in a bought deal and share it in an accelerated offer.

In addition to the above risks, underwriters may face another challenge. Autore, Hutton, and Kovacs (2011) find that accelerated offer issuers have higher pre-issue discretionary accruals and more negative market response to their earnings surprises following the issues. These are symptoms of earnings management prior to accelerated offerings. The fact that there is no or low

opportunity for an underwriter to conduct due diligence for accelerated offers further exacerbates the earnings management problem.

Therefore, given the heightened risks and the tendency for issuers to take advantage of the shortened underwriting period, rational underwriters may demand that an issuer have an internal certification mechanism in place before they are willing to underwrite the issuer's accelerated offering. In order to enjoy the benefits (faster process, lower risk, and lower costs) of an accelerated offer, a rational issuer will try to arrange for such certification devices. Based on the literature establishing the effectiveness of good corporate governance in reducing information asymmetry and constraining earnings management, we propose that firms' corporate governance arrangements may serve as a certification device in an accelerated offer. We hence formulate the following hypothesis:

H2: *Firms with better internal corporate governance quality are more likely to choose accelerated offerings than non-accelerated offerings when making SEOs, other things being equal.*

Firms with lower quality governance are less likely to find takers among the investment bankers if they wish to issue shares under the accelerated offers method. Thus they tend to end up with using fully marketed offers.

2.3. Flotation costs and external certification via audit fees

Equally important as the choice of issuance methods are the flotation costs. Examining the flotation costs for a large sample of US SEOs over 1990 to 2002, Lee and Masulis (2009) find that poorer accounting information quality increases the information asymmetry on an issuer's financial condition between insiders and investors, dampens demand for the issuer's equity, and increases underwriting risk and costs. This leads to a negative relation between the issuer's

flotation costs and the quality of its accounting information. To minimize flotation costs, rational issuers will try to credibly signal to underwriters and investors the sound quality of their accounting information. We propose that issuers can use the amount of their audit fees as an external certification device. Our proposition is based on the following. First, for a signal to be credible, it must be costly so that the signal cannot be easily imitated. Audit fees paid satisfy this requirement. Second, Ball, Jayaraman, and Shivakumar (2012) rely on audit fees as the measure of financial statement verification. Using a sample of 44,883 firm-year observations for 9,172 US firms over 2000 to 2007, Ball et al. (2012) find that, the higher the audit fees paid by a firm, the more frequent, specific, timely, accurate, and informative are the firm's management forecasts to outside investors. Such results suggest that audit fees can be used as a credible certification device by an issuer to reduce the information asymmetry about its SEO. Third, Blankley, Hurtt, and MacGregor (2012) find that higher abnormal audit fees are associated with lower likelihood that financial statements are subsequently restated. This provides further evidence validating the use of audit fees as a certification mechanism by an SEO issuer. We therefore put forward the third hypothesis:

H3: *Firms paying higher audit fees have lower gross spreads when conducting SEOs, other things being equal.*

3. Data, sample, and measures of governance quality

3.1. Data and sample

In this paper, we rely on four categories of data. Equity issuance data are downloaded from Thomson Reuter's SDC database, raw corporate governance data are obtained from RiskMetrics[2], accounting data are extracted from Osiris database maintained by Bureau van Dijk, and audit

[2] We compile composite corporate governance measures used in our regressions (G1, G2, G3, G4, and CGI4) from these raw data.

fees are sourced from Audit Analytics. The sample selection process is detailed as follows. We first merge all the equity issuances in the US market during 2001 through 2007 with annual corporate governance data from RiskMetrics.[3] Excluding all the equity issues made by firms without corporate governance data, we have 5,751 issues. After issuances by firms in the financial industry are further deleted, there are 5,225 issues.[4] We then match these issues with accounting data from Osiris. There are 3,933 issues by firms that have a record in Osiris. Among them[5], 1,338 issues can be classified as either shelf or non-shelf offering, have all the accounting data available to allow us to calculate the measures in Table 1, and constitute the final sample.

3.2. Firm level corporate governance quality

RiskMetrics provides its corporate governance ratings for the US and foreign firms. While the details of how the ratings are computed are proprietary, RiskMetrics provides detailed information on the raw data: more than 60 governance attributes for every firm covered. Corporate governance studies have taken advantage of these detailed data to compile their own governance ratings. For example, Aggarwal, Erel, Stulz, and Williamson (2008) select 44 governance attributes to create their firm-level GOV index in order to examine the differences in governance practices between the US and foreign firms. Aggarwal, Erel, Ferreira, and Matos (2011) use 41 attributes to compile a firm-level GOV_{41} index to investigate the impact of institutional investors on corporate governance. Their method of construction is as follows. For a

[3] It would help improve the currency of the empirical results to include also SEOs after 2007. However, the governance data provider started in 2007 to change the methodology for data collection and the new method does not collect all the data required to create our composite governance measures. Please see http://www.whartonwrds.com/archive-pages/our-datasets/riskmetrics-2/ for more details. These changes preclude us from including the years after 2007.

[4] Based on SDC definition of industry, the following industries are excluded: commercial bank, credit institution, insurance, investment bank, investment fund, other finance, and S&L/thrift.

[5] We require all the issues be secondary issues and delete IPOs and rights offers.

governance attribute, if a firm meets the set threshold standard, it scores one, and zero otherwise. The total score for a firm is then scaled by the total number of governance attributes (44 or 41) to arrive at the GOV index, which is expressed as a percentage with the maximum of 100%.

We follow Aggarwal, et al.'s method and use the raw data to create firm-level governance ratings. Different from Aggarwal et al., in addition to an overall rating for a firm, we create one separate rating for each of the 4 categories of governance attributes: board composition and effectiveness, anti-takeover arrangements, director and executive compensation and ownership, and audit practices. These 4 ratings, named G1, G2, G3, and G4, respectively, are compiled following Aggarwal et al.'s method. We then aggregate them to obtain the overall score for each firm, CGI4.[6] A list of governance variables and the standards used is presented in Appendix A.

In our study, we use G1, G2, G3, and G4 to pinpoint the specific governance mechanisms that are at work. In addition to answering the question whether the overall quality of governance matters in the choice of issuance methods, we are interested in detecting whether different aspects of governance are all equally effective. For instance, Xie et al. (2003) find that the financial sophistication of audit committee members affects how effectively mangers' propensity to manage earnings can be constrained. This aspect is included in G4. Weisbach (1988) finds that boards dominated by outside directors more effectively monitor the management. The composition of the board is covered in our measure G1.

In addition to the above five measures, we use an overall governance rating, industrycgq, compiled by RiskMetrics, as a robustness check. Industrycgq is a firm's percentile ranking within its GICS industry group. A value of 20, for instance, indicates the firm has better governance than about 20% of the firms within the same industry.

[6] To be consistent with Aggarwal et al., we scale G1, G2, G3, and G4 by dividing their raw scores by 4 so that CGI4 has a maximum of 1. G1, G2, G3, and G4 each has a maximum of 0.25.

3.3. Sample characteristics

Table 1 provides descriptive statistics of the key variables used in this study. Approximately 64% of the sample equity issues are shelf-registered offers, which is consistent with the finding in Autore et al. (2008) that there has been a significant revival in the use of shelf offering since 1997. A substantial portion, about 40%, of the sample issues are accelerated offers.[7] This confirms what Bortolotti et al. (2008) and Gao and Ritter (2010) point out: accelerated offers have gained increasing popularity during the last decade. The average issue cost for our sample is around 4.3% of the total proceeds, comparable to the 4.4 to 5.5% ballpark range for the US SEOs mentioned in Bortolotti et al. (2008). The 4 governance components ratings (G1 to G4) are all scaled to have a maximum possible rating of 0.25, and hence the highest possible value for the overall rating CGI4 is 1. Industrycgq, as discussed before, is a percentile rankings assigned by RiskMetrics, and therefore has the maximum value of 100. Table 1 indicates that both our 4 governance components ratings (G1 to G4) and the 2 overall governance ratings (CGI4 and industrycgq) show a fair amount of variation across the sample firms. Our sample issuers have an average CGI4 and industrycgq of about 58% and 54%, respectively, which are in line with the average GOV_{41} (between 50% and very low 60%s) for the US firms over 2004 to 2008 in Aggarwal et al. (2011). Firms in our sample pay, on average, audit fees of approximately 1.11 million US dollars, very similar to the annual average of 1.16 million presented in Ball et al. (2012) for US firms over 2000 to 2007.

In addition to the frequency of issue methods, issue costs, governance quality, and audit fee, we also describe in Table 1 the important firm and issue characteristics that may affect firms' choice of issue methods and their issue costs. In terms of firm characteristics, an average sample

[7] The portion of accelerated offers in our sample is comparable to that in Gao and Ritter (2010) (42%) and Autore et al. (2011) (43%).

firm has market capitalization (used as a proxy for firm size) of 2.16 billion US dollars, in line with the mean market capitalization of 2.19 billion in Gao and Ritter (2010). A median sample firm generates about 5% earnings before interest and taxes (EBIT) from its total assets, experiences around 18% growth in sales, and has a long-term debt to assets ratio of 0.28.[8] Regarding issue characteristics, an average sample equity issue raises 169 million US dollars. Approximately 75% of the shares issued are primary shares. In about 45% of the issues, stocks are listed on Nasdaq.

4. Empirical results

4.1. Preliminary results

As a first probe into the relation between the choice of issue methods and the quality of firm corporate governance, and the association between issue costs and the strength of the external certification from auditors (audit fees), we calculate the correlation coefficients between the shelf dummy, the accelerated dummy, gross spread, the 6 governance quality ratings, and audit fees. Table 2 presents the coefficients and the p-values for the test of significance. First, Table 2 shows that the likelihood of a shelf offer and the propensity of an accelerated offer are both positively correlated with all the governance quality ratings except for G2, and the issue costs are negatively correlated with the audit fees paid by issuers. All these correlations are highly statistically significant. These findings are consistent with our three hypotheses: firms with better governance quality are more likely to use shelf-registered or accelerated offers, and SEO issuers with stronger external certification by auditors incur lower financing costs. Second, gross spreads are significantly negatively correlated with shelf and accelerated offers. This is consistent with Bhagat et al. (1985), who find that stocks sold through shelf offerings incur lower issue costs

[8] We focus on the medians for accounting measures, because they are less affected by outliers.

than those sold through regular (non-shelf) offerings, and Bortolotti et al. (2008) and Gao and Ritter (2010), who report lower spreads for accelerated offering than those for non-accelerated offerings. Third, the correlations among the governance ratings (except for G2) are fairly high. To alleviate the concern of multicollinearity, in our regression analyses to follow, we avoid lumping all ratings together in the same regression. Fourth, although audit fees are also significantly positively associated with the likelihood of a shelf or accelerated offer and governance ratings (except for G2) are negatively associated with gross spread, we believe that they stand for different certification mechanisms (that is, internal and external certification). This view is supported by the finding in Table 2 that audit fees and governance ratings are significantly positively correlated, but the correlations are not high (the highest is 0.257), indicating they do not measure the same mechanism. Finally, the results for G2 are different from those for all the other governance scores. This suggests that not all governance arrangements work effectively in firms' SEO process. Board effectiveness, director and executive ownership and compensation, and auditing practices seem to be more relevant.

Next, we take a step further by sorting all sample issues into quintiles by our overall governance rating, CGI4. We examine the choice of issue methods, issue costs, and other important firm and issue characteristics for each of the 5 portfolios (quintiles) and report the results in Panel A of Table 3. First, as we move from Quintile 1 issues, which are made by firms with the lowest governance quality, to Quintile 5 issues, which are conducted by firms with the highest governance quality, there is a strict monotonicity in the frequency of shelf offers and accelerated offers. The frequency of shelf and accelerated offers increases monotonically with firm governance quality. The increase is economically significant. For instance, only 42% (24%) of the issuers in the weakest governance quintile use shelf (accelerated) offering, while 81%

(52%) of those in the strongest governance quintile use shelf (accelerated) offering. To formally test the statistical significance of the monotonicity, we follow the method proposed in Patton and Timmermann (2010). This test is nonparametric and implemented via bootstrap methods. The advantage of the test is that it does not require a specification of the functional form of the relation between the sorting variable (in Panel A, CGI4) and the variables examined (in Table 3, spread, shelf, accelerated, firm size, and issue size). It also does not impose any assumption on the distribution of these variables. Patton and Timmermann test indicates that the strict monotonic increase in the frequency of shelf or accelerated offering from weaker to stronger governance is statistically significant. Therefore, the findings strongly support our Hypothesis 1. Second, gross spread declines with the quality of governance. The relation is not strictly monotonic, though it is statistically significant. This suggests that the certification by strong internal governance might have some impact on an issuer's flotation costs. Third, there is no significant relation between firm size and governance quality, while issuers of better governance quality tend to conduct larger SEOs.

We then sort our sample SEOs into quintiles based on the measure of the strength of external certification, audit fees, and repeat the analyses in Panel A. The results, presented in Panel B, indicate a strict decreasing monotonicity in gross spread from issuers paying less audit fees to those paying more audit fees. The monotonicity is again economically and statistically significant. The average spread for Quintile 1 SEOs by issuers purchasing the least external certification from auditors is 5.08%, while the average spread for issuers seeking the strongest external certification is only 3.38%. These findings support our Hypothesis 2. Furthermore, Panel B shows that higher audit fees are significantly positively associated with the likelihood of a shelf or accelerated offer, firm size, and issue size.

4.2. Regression results

4.2.1. Choice of issuance methods and the strength of certification via governance

In this subsection, we investigate the relation between equity offer methods, issue costs, and the strength of certification mechanisms while controlling for firm and issue characteristics that may affect issue methods and costs. Specifically, we run the following panel regressions:

$$\begin{aligned} shelf_{i,t}\,(or\ accelerate d_{i,t}) &= \alpha + \beta_1\, firm\ size_{i,t} + \beta_2 ROA_{i,t} + \beta_3 growth_{i,t} + \beta_4 leverage_{i,t} \\ &+ \beta_5 issue\ size_{i,t} + \beta_6 primary_{i,t} + \beta_7 Nasdaq_{i,t} + \beta_8 below\ \ range_{i,t} + \beta_9 above\ \ range_{i,t} \\ &+ \beta_{10} certificat ion\ \ proxies_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

where shelf or accelerated is a dummy variable that takes the value of one if an issue is shelf registered or accelerated offer, respectively, and zero if otherwise. Firm size is measured as the natural logarithm of market capitalization in US dollars at the last financial year end before an offering. ROA, a proxy for firm profitability, is earnings before interest and taxes scaled by total assets at the last financial year end before an offering. Growth is the growth rate of net sales during the year of the equity offering. Leverage is total long-term debt divided by total assets at the last financial year end before an offering. Issue size is the natural logarithm of the total proceeds in US dollars. Primary is the proportion of primary shares in the total shares offered. Nasdaq is a dummy variable that equals one if a firm is listed on Nasdaq and zero otherwise. Below range and above range are dummies that equal one if the issue price is below or above the filing price range, respectively, and zero otherwise. The reason for their inclusion is because the difference between the final offer price and the initial price range reflects the deviation of the potential investors' assessment of the equity offering from the assessment made by the issuer and its underwriter. Therefore, the larger the difference is, the weaker is the certification by the underwriter. Our main variables of interest, the proxies for internal certification, include each of the four governance component ratings and the two overall governance quality rankings. We also

include audit fees to control for the strength of external certification. To ensure that our results are not distorted by outliers, we winsorize all variables (except for the dummies) at the 1st and the 99th percentiles. We also estimate the standard errors through bootstrapping using 200 replications.

Table 4 presents the panel logit regression results for the determinants of shelf-registered offerings. Our focus is on the relation between shelf offerings and firm governance quality. In Table 4, after controlling for relevant firm and issue features and other certification mechanisms, all the governance quality ratings, with the exception of G2, are significantly positively related to the likelihood of a shelf offering. This is consistent with the univariate results in Tables 2 and 3 and supports our Hypothesis 1, that is, firms with better internal governance quality are more likely to use shelf-registered offerings when conducting SEOs.

Table 4 shows that larger firms are more likely to conduct shelf offerings, which is consistent with the finding in Autore et al. (2008). Less profitable firms, firms with a higher financial leverage, or firms whose offering includes a higher proportion of primary shares are also more likely to use shelf registered offerings. These findings indicate that firms utilizing shelf offerings are those facing tight financial conditions and having a greater need for external financing (Heron and Lie, 2004). Larger issues, which are riskier and therefore require stronger certification, are less likely to be shelf offers. Below range and above range, which can be considered as proxies for weaker certification by underwriters, are significantly negatively associated with the propensity of shelf offerings, suggesting that weaker underwriter certification discourages issuers from using shelf offerings. Interestingly, audit fees, the measure of the strength of external certification, are significantly positively related to the likelihood of a shelf offer in four out of the six regressions. Such a positive, albeit not always statistically significant,

relation may suggest that, when strong internal governance is at play, external certification may have some impact, but its impact is dominated by that of governance on the choice of issue methods.

Results from panel logit regression analyses of the determinants of accelerated offerings are reported in Table 5. The probability of conducting an accelerated offer increases with a firm's governance quality, which is evidenced by the positive and significant coefficient estimates for all governance ratings but G2. This result supports our Hypothesis 2. We find that larger firms are more likely to use accelerated offering, which is consistent with the finding in Gao and Ritter (2010) that smaller firms prefer to rely on traditional fully-marketed offerings. The negative coefficient estimate for ROA and the positive coefficient estimate for leverage suggest that a firm's preference for an accelerated offering may be driven by its tight financial situation. We also find that firms raising a larger amount of capital or listed on Nasdaq are less likely to use accelerated offering. This result is consistent with the finding in Gao and Ritter (2010) that the offer size is an important determinant of the choice between accelerated offering and traditional fully marketed offering, and echoes their argument that the issuer in a fully marketed offer pays underwriters to create demand for its shares. As the marketing service provided by underwriters in a traditional bookbuilt offer is more valuable for such firms, they tend to use accelerated offering less often. Below range and above range, proxies for the divergence of opinions between investors and underwrites and hence weaker underwriter certification, are associated with a lower propensity for an accelerated offer.

4.2.2. Issue costs and the strength of certification via auditors

In this subsection, we investigate the association between issue costs and the strength of external certification developed in Section 2.2. In a comprehensive review of the application of

self-selection models, Li and Prabhala (2005) point out that self-selection is a pervasive feature of many corporate finance decisions. In their study on how firms' SEC registration choice affects their issuance costs, Bethel and Krigman (2008) explicitly control for self-selection bias. Therefore, in examining the relation between gross spread and the amount of audit fees, the proxy for external certification, we follow Bethel and Krigman (2008) to use the Heckman two-stage selection model to control for the potential selection bias in the type of firms that choose a shelf offering. The first-stage estimation uses specification 6 in Table 4. The second-stage estimation is specified as follows.

$$\begin{aligned} gross\ spread_{i,t} &= \alpha + \beta_1 firm\ size_{i,t} + \beta_2 issue\ size_{i,t} + \beta_3 Nasdaq_{i,t} + \beta_4 below\ range_{i,t} \\ &+ \beta_5 above\ range_{i,t} + \beta_6 certification\ proxies_{i,t} + \beta_7 lambda_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

where gross spread is as a percentage of the principal amount offered. Lambda is the inverse mills ratio obtained from the first-stage regression and measures the predicted probability that an issuer chooses a shelf offer.

Table 6 reports the regression results. First and foremost, gross spread is significantly negatively related to the amount of audit fees paid by an issuer in all the regressions, while the internal governance ratings are not significant. This supports our Hypothesis 3 and suggests that an SEO issuer can use the amount of fees paid to purchase auditing services to certify the quality of its information disclosure, and the reduced information asymmetry translates into a lower underwriter spread. The lack of significance for governance ratings may be either because internal certification does not affect the determination of issuance costs or because the possible impact of internal governance quality is dominated by that of the external certification by auditors. Table 6 also shows that larger firms enjoy lower issue costs, consistent with Lee and Masulis (2009). Larger issues and issuers listed on the Nasdaq incur higher gross spread, which

may be because such offers require more marketing efforts from the underwriters due to their size or increased risk. Below range and above range dummies, which proxy for the strength of underwriter certification, are both significantly positively associated with gross spread. This finding indicates that weaker certification by underwriters results in higher issue costs. Finally, gross spread is significantly negatively related to lambda, which suggests that, after controlling for the self-selection bias, shelf offerings have lower gross spread. This negative relation is consistent with the findings in Autore et al. (2008) and Bethel and Krigman (2008).

4.3. Further discussions on certification mechanisms

In this paper, our main argument is that firms' internal corporate governance mechanisms and external auditors can serve as an alternative certification device in shelf registered or accelerated offerings, equity offering methods characterized by under-certification from underwriters. One may argue, however, that there may be other alternative certification mechanisms that are also important. We believe that the certification of an issuer's quality should be made by players in the equity issue process, that is, by the issuing firm (self-certification), or traditionally its underwriters, or auditors. Based on this reasoning, we use auditor fee incurred by the issue firm as a proxy for the certification from its auditors: higher auditor fee indicates more efforts and work done by the auditors and hence stronger certification.[9] To proxy for the certification by underwriters, we compare the final offer price with the initial offer price range and use two dummy variables, below range and above range, to capture the situations where the final offer price is below or above the initial range, respectively. Because the difference between the final offer price and the initial price range reflects the

[9] Another proxy is the identity of the auditor, e.g., whether the auditor is one of the Big 5 accounting firms. However, only less than 8% of our observations do not have a Big-5 auditor. We therefore do not include it in the regressions.

deviation of the potential investors' assessment of the equity offering from the underwriters' assessment, we argue that the larger the difference is, the weaker is the certification from underwriters. While it is not possible to examine all the potential alternative certification mechanisms, in all our regressions presented in Section 4.2 above, we include proxies for all the above certification channels to ensure a particular certification device does not pick up the role played by other certification mechanisms.

5. Conclusions

SEC began to introduce shelf registration in 1982. Although shelf registration allows issuers much more flexibility in their securities issue process and seems to have lower issue costs, few firms used shelf registration during the 1980s. Yet the 1990s sees a dramatic revival of the use of shelf registration. Another offering method, accelerated offering has also been gaining popularity since 2000. The main obstacle that discouraged issuers from utilizing shelf or accelerated offerings in the past is the under-certification by underwriters resulting from inadequate due diligence. The significant increase in the use of shelf registration and accelerated offering suggests that issuers must have found a way to overcome the under-certification problem. Giving the fact that firms have been paying increasing attention to corporate governance over the last two decades and given the effectiveness of sound governance in reducing agency costs and information asymmetry, we hypothesize that internal corporate governance may serve as an alternative certification device and allow issuers with strong governance to overcome the under-certification problem and take advantage of shelf and accelerated offerings. Using a panel dataset of US SEOs, we find evidence that supports our conjecture. In particular, firms with better internal governance quality are more likely to use shelf registration or accelerated offering.

Motivated by the finding in Lee and Masulis (2009) that issuance costs are negatively related to the quality of accounting information for an issuer and the extensive evidence that the magnitude of audit fees may measure the strength of financial statement verification, we postulate that SEO issuers may use the amount of audit fees paid to credibly signal the quality of their financial disclosure to underwriters and investors and in return enjoy lower issuance costs. Our empirical tests find that gross spreads are indeed significantly negatively associated with audit fees, and hence support the argument that the external certification via auditors affects issue costs.

In sum, our paper contributes to the securities issuance, the corporate governance, and the auditing literature by proposing a linkage between governance quality and the choice of securities issue techniques and between the amount of resources spent by an issuer on acquiring auditing services and its issue costs and providing empirical evidence that supports the existence of the linkages.

Appendix A. Governance rating variables summary

Acceptable Governance Standards
Board Composition and Effectiveness (G1)
1. All directors attended 75% of board meetings or had a valid excuse
2. CEO serves on the boards of two or fewer public companies
3. Board is controlled by more than 50% independent outside directors
4. Board size is greater than 5 but less than 16
5. CEO is not listed as having a related-party transaction
6. No former CEO on the board
7. Compensation committee composed solely of independent outsiders
8. Chairman and CEO are separated or there is a lead director
9. Nominating committee composed solely of independent outsiders
10. Governance committee exists and met in the past year
11. Shareholders vote on directors selected to fill vacancies
12. Governance guidelines are publicly disclosed
13. Annually elected board (no staggered board)
14. Policy exists on outside directorships (four or fewer boards is the limit)
15. Shareholders have cumulative voting rights
16. Shareholder approval is required to increase/decrease board size
17. Majority vote requirement to amend charter/bylaws (not supermajority)
18. Board has the express authority to hire its own advisors
19. Performance of the board is reviewed regularly
20. Board-approved succession plan in place for the CEO
21. Directors are required to submit resignation upon a change in job
22. Board cannot amend bylaws without shareholder approval or can do so only under limited circumstances
23. Does not ignore shareholder proposal.
24. Company has policy on mandatory retirement age or term limits for directors
25. All board members participate in accredited director education programs.
Anti-takeover (G2)
1. Single class, common
2. Majority vote requirement to approve mergers (not supermajority)
3. Shareholders may call special meetings
4. Shareholder may act by written consent
5. Company either has no poison pill or a pill that was shareholder approved
6. Company is not authorized to issue blank check preferred
Compensation and Ownership (G3)
1. Directors are subject to stock ownership requirements
2. Executives are subject to stock ownership guidelines
3. No interlocks among compensation committee members
4. Directors receive all or a portion of their fees in stock
5. All stock-incentive plans adopted with shareholder approval
6. Options grants align with company performance and reasonable burn rate
7. Company expenses stock options
8. All directors with more than one year of service own stock
9. Officers' and directors' stock ownership is at least 1% but not over 30% of total shares outstanding
10. Repricing is prohibited
11. An option pricing model is used to measure the cost of all stock-based incentive plans.
12. Non-employee directors should not participate in pension plans
13. Corporate loans should not be given to participants of stock option plans.
Audit Practices (G4)
1. Consulting fees should be less than audit fees.
2. Shareholders should be permitted to ratify management's selection of auditors each year.
3. The entire audit committee is composed of independent directors.
4. The entire audit committee should be composed of financial experts.

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Table 1
Summary statistics.

Variable	Mean	Std. Dev.	Minimum	1st Quartile	Median	3rd Quartile	Maximum
Shelf	0.635	0.482	0.000	0.000	1.000	1.000	1.000
Accelerated	0.401	0.490	0.000	0.000	0.000	1.000	1.000
Spread	4.260	1.665	0.106	3.500	4.829	5.486	10.693
G1	0.148	0.049	0.000	0.113	0.150	0.188	0.250
G2	0.143	0.036	0.026	0.121	0.145	0.169	0.226
G3	0.144	0.037	0.023	0.114	0.136	0.159	0.250
G4	0.142	0.056	0.028	0.083	0.139	0.194	0.250
CGI4	0.576	0.121	0.261	0.482	0.579	0.666	0.853
Industry CGQ	54.448	26.361	0.500	33.525	54.950	75.775	100.000
Audit fees ($)	1,106,332	2,416,327	25,000	239,000	528,000	1,063,490	55,300,000
Firm size ($1000)	2,158,493	10,534,057	1,398	288,545	622,015	1,509,161	311,755,458
ROA	-0.015	0.246	-1.891	-0.004	0.054	0.089	0.684
Growth	0.442	2.481	-1.000	0.053	0.183	0.401	74.581
Leverage	0.293	0.246	0.000	0.044	0.282	0.458	1.680
Payout	0.011	0.050	0.000	0.000	0.000	0.014	1.659
Issue size ($1000)	168,904	273,023	730	57,638	99,040	177,786	4,176,983
Primary	0.750	0.397	0.000	0.540	1.000	1.000	1.000
Nasdaq	0.454	0.498	0.000	0.000	0.000	1.000	1.000

This table presents the summary statistics for our sample firms over 2001 to 2007. Shelf is a dummy variable that equals one if an equity offer is a shelf-registered offering and zero otherwise. Accelerated is a dummy variable that equals one if an equity offer is an accelerated offer and zero otherwise. Spread is the gross spread as a percentage of the principal amount offered. G1, G2, G3, and G4 are ratings of governance quality concerning board of directors, anti-takeover provisions, executive and director ownership and compensation, and audit practices and other progressive practices, respectively. CGI4 is the sum of G1, G2, G3, and G4. These ratings are compiled by ourselves using raw data provided by RiskMetrics. Industrycgq which is compiled by RiskMetrics, is the percentile ranking of the governance quality for a firm vis-à-vis its industry group. Higher governance rankings indicate better governance quality. Audit fees, obtained from Audit Analytics, are the total audit fees at the last financial year end before an equity offering in US dollars. Firm size is measured by market capitalization at the last financial year end before an equity offering in thousands of US dollars. ROA is earnings before interest and taxes scaled by total assets at the last financial year end before an equity offering. Growth is the growth rate of net sales during the year of the equity offering. Leverage is total long-term debt divided by total assets at the last financial year end before an equity offering. Payout is dividend payment scaled by total assets at the last financial year end before an offering. Issue size is the offering proceeds in thousands of US dollars. Primary is the proportion of primary shares in the total shares offered. Nasdaq is a dummy variable that equals one if a firm is listed on Nasdaq and zero otherwise.

Table 2

Correlations between key equity offering characteristics and measures of certification mechanisms.

	Shelf	Accelerated	Spread	Issue size	G1	G2	G3	G4	CGI4	Industry CGQ	Audit fees
Shelf	1.000										
Accelerated	0.484	1.000									
	(0.000)										
Spread	-0.312	-0.493	1.000								
	(0.000)	(0.000)									
Issue size	0.073	0.040	-0.260	1.000							
	(0.008)	(0.146)	(0.000)								
G1	0.235	0.163	-0.115	0.040	1.000						
	(0.000)	(0.000)	(0.000)	(0.141)							
G2	-0.075	-0.069	0.069	0.008	0.020	1.000					
	(0.006)	(0.011)	(0.015)	(0.763)	(0.467)						
G3	0.277	0.206	-0.237	0.099	0.396	-0.102	1.000				
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
G4	0.306	0.223	-0.241	0.158	0.451	0.102	0.544	1.000			
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
CGI4	0.299	0.211	-0.211	0.122	0.742	0.325	0.690	0.842	1.000		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
Industry CGQ	0.152	0.142	-0.142	0.089	0.531	0.097	0.550	0.343	0.573	1.000	
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Audit fees	0.117	0.101	-0.223	0.546	0.118	0.045	0.168	0.257	0.233	0.138	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.109)	(0.000)	(0.000)	(0.000)	(0.000)	

This table shows the pairwise correlation coefficients between key equity offering characteristics and measures of certification mechanisms. Numbers in the parentheses indicate the p-values for the test that a correlation coefficient is zero. All variables are as defined in Table 1.

Table 3

Tests on the relation between issue methods, governance quality, gross spread, and audit fees.

Panel A. Sorted on CGI4

	Spread	Shelf	Accelerated	Firm Size (million)	Issue Size (million)
Q1	4.6683	0.4232	0.2472	1,337	130.656
Q2	4.4819	0.5281	0.3109	1,200	131.289
Q3	4.4878	0.6404	0.4045	1,441	131.881
Q4	3.8787	0.7640	0.5131	2,031	190.695
Q5	3.7259	0.8127	0.5206	2,333	199.938
p-value	0.017**	0.000***	0.002***	0.152	0.009***
N	1,250	1,335	1,335	1,315	1,335

Panel B. Sorted on audit fees

	Spread	Shelf	Accelerated	Firm Size (million)	Issue Size (million)
Q1	5.0799	0.4517	0.2780	461	71.208
Q2	4.5506	0.6139	0.3822	699	101.279
Q3	4.2373	0.6409	0.3938	1,048	123.348
Q4	3.9896	0.7606	0.4788	1,669	182.895
Q5	3.3764	0.7722	0.5019	4,512	313.181
p-value	0.000***	0.000***	0.000***	0.000***	0.000***
N	1,210	1,295	1,295	1,270	1,295

We formally test the significance of the monotonic relations between CGI4 (or Audit Fees) and Shelf, Accelerated, Spread, Firm Size and Issue Size by employing a monotonicity test suggested by Patton and Timmermann (Patton and Timmermann, 2010). The Patton and Timmermann test is nonparametric and is implemented via bootstrap methods. The advantage of this test is that it does not require specifying the functional form of the relation between the sorting variables and the variables examined or impose distributional assumption on such variables.

The hypotheses to test a monotonic increasing relation between CGI4 (or Audit Fees) and Shelf, Accelerated, Firm Size and Issue Size are:

H_0: $\Delta \leq 0$

H_1: $\Delta > 0$

where Δ_i is $X_{i,t} - X_{i-1,t}$

The hypotheses to test a monotonic decreasing relation between CGI (or Audit Fees) and Spread variable are:

H_0: $\Delta \geq 0$

H_1: $\Delta < 0$

Table 4

Shelf-registered offerings: Internal and external certification.

	1	2	3	4	5	6
Constant	-2.600	-2.790	-3.318	-1.718	-2.835	-2.810
	(0.149)	(0.158)	(0.106)	(0.429)	(0.140)	(0.148)
Firm Size	0.578***	0.593***	0.562***	0.595***	0.608***	0.569***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-1.024**	-1.156**	-1.140***	-1.174***	-1.078***	-1.168***
	(0.026)	(0.011)	(0.009)	(0.003)	(0.004)	(0.003)
Growth	0.131	0.149	0.132	0.077	0.081	0.143
	(0.244)	(0.224)	(0.212)	(0.532)	(0.492)	(0.224)
Leverage	1.721***	1.627***	1.653***	1.761***	1.834***	1.627***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Issue Size	-0.430***	-0.463***	-0.421***	-0.433**	-0.431***	0.459***
	(0.003)	(0.001)	(0.005)	(0.014)	(0.004)	(0.001)
Primary	0.921***	1.040***	0.923***	1.025***	1.004***	1.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Nasdaq	-0.406**	-0.402**	-0.312	-0.293	-0.368*	-0.383**
	(0.032)	(0.030)	(0.100)	(0.131)	(0.051)	(0.035)
Below Range	-1.864***	-1.907***	-1.848***	-1.815***	-1.777***	-1.883***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Above Range	-1.856***	-1.963***	-1.900***	-1.798***	-1.748***	-1.946***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Audit Fee	0.238**	0.351***	0.265**	0.117	0.095	0.349***
	(0.019)	(0.000)	(0.013)	(0.295)	(0.310)	(0.001)
G1	6.774***					
	(0.000)					
G2		0.615				
		(0.807)				
G3			9.733***			
			(0.000)			
G4				9.699***		
				(0.000)		
CGI4					4.461***	
					(0.000)	
Industry CGQ						0.007**
						(0.022)
Log likelihood	-638	-647	-638	-628	-628	-644
No. of Obs.	1234	1234	1234	1234	1234	1234

The sample period is 2001 to 2007. The dependent variable is shelf. Firm size is the natural logarithm of market capitalization in US dollars at the last financial year end before an offering. Issue size is the natural logarithm of total proceeds in US dollars. Below range and above range are dummy variables that equal one if the issue price is below or above the filing price range, respectively, and zero otherwise. Audit fee is the natural logarithm of a firm's total audit fee in US dollars as of the financial year end before an offering. All the other variables are as defined in Table 1. All except for the dummy variables are winsorized at the 1st and the 99th percentiles. Numbers in the brackets are the p-values. Standard errors are based on the bootstrapping method using 200 replications. One, two, and three asterisks indicate significance at the 10%, 5%, and 1% level, respectively.

Table 5

Accelerated offerings: Internal and external certification.

	1	2	3	4	5	6
Constant	5.790***	5.901***	5.607***	6.306***	5.721***	5.799***
	(0.001)	(0.002)	(0.001)	(0.000)	(0.005)	(0.001)
Firm Size	0.844***	0.827***	0.824***	0.847***	0.861***	0.825***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-0.967**	-1.032***	-1.030***	-1.054***	-1.025***	-1.050***
	(0.012)	(0.004)	(0.006)	(0.005)	(0.009)	(0.004)
Growth	0.173	0.186*	0.168	0.144	0.144	0.176
	(0.132)	(0.061)	(0.158)	(0.187)	(0.227)	(0.121)
Leverage	1.752***	1.658***	1.656***	1.697***	1.746***	1.659***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Issue Size	-0.903***	-0.910***	-0.904***	-0.907***	-0.913***	-0.920***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Primary	0.088	0.160	0.106	0.176	0.155	0.163
	(0.674)	(0.471)	(0.626)	(0.383)	(0.483)	(0.428)
Nasdaq	-0.594***	-0.564***	-0.520***	-0.523***	-0.569***	-0.571***
	(0.001)	(0.002)	(0.006)	(0.004)	(0.005)	(0.001)
Below Range	-3.063***	-3.050***	-3.014***	-3.025***	-3.014***	-3.034***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Above Range	-2.416***	-2.478***	-2.414***	-2.365***	-2.346***	-2.452***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Audit Fee	0.017	0.109	0.051	-0.027	-0.046	0.095
	(0.848)	(0.242)	(0.593)	(0.800)	(0.611)	(0.263)
G1	5.657***					
	(0.002)					
G2		-1.121				
		(0.638)				
G3			5.754**			
			(0.016)			
G4				5.746***		
				(0.001)		
CGI4					2.770***	
					(0.000)	
Industry CGQ						0.006*
						(0.065)
Log likelihood	-600	-605	-602	-598	-598	-603
No. of Obs.	1234	1234	1234	1234	1234	1234

The sample period is 2001 to 2007. The dependent variable is accelerated. Firm size is the natural logarithm of market capitalization in US dollars at the last financial year end before an offering. Issue size is the natural logarithm of total proceeds in US dollars. Below range and above range are dummy variables that equal one if the issue price is below or above the filing price range, respectively, and zero otherwise. Audit fee is the natural logarithm of a firm's total audit fee in US dollars as of the financial year end before an offering. All the other variables are as defined in Table 1. All variables except for the dummy variables are winsorized at the 1st and the 99th percentiles. Numbers in the brackets are the p-values. Standard errors are based on the bootstrapping method using 200 replications. One, two, and three asterisks indicate significance at the 10%, 5%, and 1% level, respectively.

Table 6

Gross spread and external certification: Heckman two-stage model estimations.

	1	2	3	4	5	6
Constant	9.892***	9.905***	10.054***	9.927***	9.917***	9.908***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size	-0.872***	-0.872***	-0.875***	-0.873***	-0.873***	-0.873***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Issue Size	0.334***	0.334***	0.337***	0.334***	0.335***	0.334***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Nasdaq	0.733***	0.732***	0.727***	0.740***	0.737***	0.737***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Below Range	2.003***	2.016***	2.015***	2.007***	2.007***	2.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Above Range	1.917***	1.928***	1.921***	1.922***	1.918***	1.916***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Audit Fee	-0.123**	-0.125**	-0.116*	-0.125**	-0.121**	-0.121**
	(0.038)	(0.038)	(0.052)	(0.039)	(0.047)	(0.040)
G1	0.283					
	(0.790)					
G2		0.442				
		(0.741)				
G3			-1.351			
			(0.330)			
G4				0.261		
				(0.781)		
CGI4					0.012	
					(0.978)	
Industry CGQ						0.000
						(0.913)
Lambda	-1.004***	-1.033***	-1.068***	-1.011***	-1.017***	-1.011***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
No. of Obs.	1172	1172	1172	1172	1172	1172

The sample period is 2001 to 2007. The dependent variable is gross spread. Firm size is the natural logarithm of market capitalization in US dollars at the last financial year end before an offering. Issue size is the natural logarithm of total proceeds in US dollars. Below range and above range are dummy variables that equal one if the issue price is below or above the filing price range, respectively, and zero otherwise. Audit fee is the natural logarithm of a firm's total audit fee in US dollars as of the financial year end before an offering. All the other variables are as defined in Table 1. All variables except for the dummy variables are winsorized at the 1st and the 99th percentiles. The first stage regression is based on Regression 6 in Table 4. Numbers in the brackets are the p-values. One, two, and three asterisks indicate significance at the 10%, 5%, and 1% level, respectively.