



Do Shareholder Rights Influence The Direct Costs Of Issuing Seasoned Equity?

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Abstract

We test the hypothesis that underwriters set higher gross spreads and deeper offer price discounts in seasoned equity offers of firms exhibiting weak shareholder rights as compensation for increased reputational risk and legal liability. Alternatively, if market participants are fully aware of the risks related to weak shareholder rights and efficiently price them, then underwriters arguably do not need to adjust issuance costs for firms with weak governance. Our results indicate that, on average, shareholder rights and direct issue costs are unrelated, supporting an efficient pricing view. However, upon closer examination, we find that underwriters charge higher gross spreads when the issuing firm has either an extremely low level of shareholder rights or a substantially lower level than expected, which are likely the cases in which the underwriter's reputational risk is highest.

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1 Introduction

Prior studies report that the strength of shareholder rights affects the direct costs of debt financing.¹ Klock et al. (2005) find that strong antitakeover provisions (i.e. weak shareholder rights) are associated with a lower cost of debt financing than are weak antitakeover provisions (i.e. strong shareholder rights). They conclude that bondholders view antitakeover provisions as a mechanism to protect their interests. Chava et al. (2009) find that firms more vulnerable to takeovers (i.e. stronger shareholder rights) pay higher spreads on their bank loans than firms with weaker shareholder rights. They argue that the higher loan spreads are caused by the increased financial risk that would stem from a potential takeover. Relative to the link between shareholder rights and the direct costs of debt issuance, the link between shareholder rights and the direct costs of raising equity is theoretically less clear, and the empirical evidence on the latter is sparse.² We motivate an empirical investigation of the following question: do weaker shareholder rights increase the direct cost of seasoned equity offers (SEOs)? Our goal is to answer this question by studying the link between the strength of shareholder rights and SEO gross spreads and offer price discounts set by the investment bank that underwrites the issuance.³

In the context of equity offers, investment banks certify the validity of the issuing firm's stock price. The possibility that an investment bank will bring an overvalued issuer to the market creates the potential for reputational damage and legal liability.⁴ To the extent that weak shareholder rights insulate managers and increase the potential for agency conflicts, it seems plausible that investment banks are more cautious in dealing with equity issuing firms that have weaker shareholder rights. This would seem especially so in light of the fact that seasoned equity offers generate a substantial cash flow, adding to the potential for agency problems. As we elaborate below, a particular bank might choose to protect itself by charging higher gross spreads or setting the offer price at a considerable discount from current market value for issuers that have weaker shareholder rights.

Our primary hypothesis is motivated by the vast literature that examines the linkage of corporate governance mechanisms with information asymmetry between managers and investors. For example, Becker-Blease and Irani (2008), Cai et al. (2006), Hillier and McColgan (2006), Kanagaretnam et al. (2007) and Holm and Schøler (2010) document that board independence helps reduce asymmetric information. Peasnell et al. (2005) finds that board independence improves the integrity of financial statements. Wruck (1993) and Kang et al. (2006) examine the importance of the form of executive compensation in reducing asymmetric information. Similarly, Shleifer and Vishny (1997), Perotti and

¹ Shareholder rights are typically measured using the governance index of Gompers et al. (2003), in which firms with more anti-takeover provisions are associated with weaker shareholder rights.

² Some exceptions include Cheng et al. (2006).

³ A separate stream of research examines whether shareholder rights influence stock returns/firm valuation. Some studies find that strong shareholder rights are associated with abnormally high returns/higher valuation (e.g., Gompers et al. 2003; Cremers and Nair, 2005; Luo and Hachiya 2005; Bebhuk et al. 2009; Lee and Lee 2009). Other studies argue that differences in shareholder rights do not result in abnormal stock returns (e.g., Core et al. 2006; Johnson et al. 2009).

⁴ Overvalued issuers are those for which insiders' private valuation is lower than the consensus valuation of outside investors, the latter of which is reflected in the current stock price.

Thadden (2003), Pawlina and Renneboog (2005) and Florackis and Ozkan (2009) find that large shareholders can reduce asymmetric information and help improve long-term performance. To the extent that shareholders' rights are an alternative external governance tool, we expect the presence of weak shareholder rights to exacerbate the problem of asymmetric information and increase the risk of underwriters bringing an overvalued issuer to the market.

More specifically, Booth and Smith's (1986) certification hypothesis asserts that underwriters stake their reputational capital to certify that the offer price reflects potentially adverse inside information. If weaker shareholder rights increase the effort needed for underwriters to provide adequate certification, it seems reasonable that an underwriter would charge higher spreads to compensate for the extra effort. Similarly, Tinic's (1988) implicit insurance hypothesis states that underpricing is an implicit insurance premium that protects underwriters against legal liability and damage to reputational capital. Essentially, if there is a significant possibility that the issuer's stock price is overvalued, pricing a seasoned offer at a deeper discount from current market value helps to ensure that the newly issued shares are not overpriced. If weaker shareholder rights increase the potential for overvaluation, then underwriters might set offer prices at deeper discounts for these firms. These arguments form the basis for the hypothesis that weaker shareholder rights are associated with higher gross spreads or deeper offer price discounts.

Alternatively, it is possible that investment banks believe that investors efficiently price the impact of shareholder rights on firm valuation. If prices accurately reflect shareholder rights, then the bank's risk of experiencing reputational and legal troubles due to underwriting offers of overvalued firms are not associated with the strength of shareholder rights. These arguments lead to the alternative hypothesis that the strength of shareholder rights is not associated with gross spreads or offer price discounts. Consistent with this alternative view, a number of studies find that firms characterized by weaker shareholder rights are associated with lower market valuations (e.g., Gompers et al. 2003; Chi 2005; Chua et al. 2007; Bebchuk et al. 2009), although there is evidence that low valuations cause firms to adopt more anti-takeover provisions, not vice versa (Lehn et al. 2007). In the specific context of seasoned equity offers, Kim and Purnanandam (2014) find that weak corporate governance is the primary reason why investors react negatively to SEO announcements. In effect, weak governance lowers the stock price of poorly governed firms before the underwriter prices the actual issue. Viewing this finding in the context of our study, it is possible that the stock price penalty for SEO issuers with weak governance is severe enough that underwriters of such deals do not face additional risk of issuing overvalued shares. If so, we would expect that the strength of shareholder rights is unrelated to gross spreads and offer price discounts.

Gross underwriter spreads and offer price discounts are relatively large and easily measured. Gross spreads are measured as a percentage of total offer proceeds. They average roughly 5% and—unlike the spreads paid in initial public offers—vary considerably across offers. Offer price discounts reflect the percentage reduction in the offer price in relation to the closing secondary market price on the prior day. Discounts average 2–3% and also display considerable cross-sectional variation.

Our empirical tests use a sample of 702 SEOs (by 495 firms) during 1992–2014. We conduct OLS estimations in which we regress the direct cost measures against the strength of shareholder rights and several control variables. Our measures of shareholder rights include the G-index of Gompers et al. (2003), the entrenchment index (E-index) of Bebchuk et al. (2009), and the alternative governance index (ATI) of Cremers and Nair (2005). Using the G-index and E-index, we find that gross spreads are significantly influenced by

the strength of shareholder rights, but only when the firm has an extreme level of weak shareholder rights, defined as having 14 or more provisions in the G-index (out of 24) and having all six provisions in the E-index. We find no such effect, however, for SEO discounts. The ATI has only three levels and extreme levels do not influence discounts or the gross spreads, perhaps because three antitakeover provisions are not enough to detect extremely weak shareholder rights.

The strength of shareholder rights could be endogenous with the need for governance (Demsetz and Lehn 1985). For example, prior studies find that stronger shareholder rights are associated with smaller firms, greater idiosyncratic risk, and lower institutional holdings (Gompers et al. (2003); Ferreira and Laux 2007; Cremers and Nair 2005). To account for this, we decompose the strength of shareholder rights into the portion associated with firm traits (“predicted shareholder rights”) and the portion that is orthogonal to firm traits (“residual shareholder rights”). The estimations reveal that underwriters charge firms with excess positive residual G-index higher gross spreads, but we find no evidence of the predicted or residual E-index or ATI influencing spreads or discounts.

We provide additional tests that include board characteristics because it is possible that shareholder rights interact with other governance mechanisms. We include variables that capture board size, board independence and the presence of insiders on the board. Of particular note, we find some evidence that larger boards are associated with lower issue costs. This finding is difficult to interpret, however, because board size could reflect tradeoffs between firm-specific costs and benefits of monitoring (e.g., Boone et al. 2007). The inclusion of board variables, however, does not alter our findings that extremely weak shareholder rights are associated with higher gross spreads.

In sum, our main result is that shareholder rights do not have a significant impact on the direct costs of raising equity capital, except for firms with very weak shareholder rights (i.e. high antitakeover protection). This suggests that underwriters believe stock prices of seasoned issuers already reflect the strength of shareholder rights in general, and thus they do not adjust spreads or discounts on that basis. However, they charge higher spreads for certifying firms with extremely weak shareholder rights, arguably in cases when their reputational capital is most vulnerable. The non-significant result for the average SEO firm is consistent with the result of Johnson et al. (2009) that sorting by shareholder rights does not generate abnormal returns, implying efficient pricing with respect to this measure. This view is also in line with recent evidence reported by Kim and Purnanandam (2014) that weak governance is priced at the SEO announcement. Our results suggest that underwriters believe that they incur additional risks only in SEOs of firms with very weak shareholder rights and therefore require additional compensation to bring these issues to the market.⁵

The rest of the paper is organized as follows. Section 2 presents the data and descriptive evidence. Section 3 provides the main results of the paper. Section 4 concludes.

⁵ A related study by Lin and Ulupinar (2013) reports that SEO underwriting spreads are positively related to shareholder rights. Our paper differs in the sense that we account for the fact that the strength of governance is endogenous with the need for governance (e.g., Demsetz and Lehn 1985). For example, stronger shareholder rights are associated with smaller firms, greater residual volatility, and lower institutional holdings (Gompers et al. 2003; Cremers and Nair 2005; Ferreira and Laux 2007). This part of our analysis leads to the key result that underwriters charge more when shareholder rights deviate from expected levels. See our Sect. 3.3. Compared to Lin and Ulupinar (2013), we also focus our analysis on primary share issues and exclude firms from regulated industries (financials and utilities) and use a longer time horizon for the sample.

2 Sample, variables, and descriptive statistics

2.1 Sample and variables

The dataset consists of seasoned equity offerings (SEOs) of common stocks from 1992 to 2014 conducted by firms for which current shareholder rights data are available. We exclude unit and rights offers. We also exclude offers made by financial firms and utilities, since the costs of raising equity and the level of shareholder rights of these companies are likely to differ from those of industrial firms due to regulation. We also require that the firm sells at least some primary shares and the offer price is higher than \$1. Seasoned offering data are collected from SDC's New Issues Database.

Shareholder rights data are obtained from RiskMetrics. The legacy dataset, available until 2005, includes 24 antitakeover provisions that comprise the G-index. These provisions relate to voting rights, delaying hostile bidders, director/officer protection, other takeover defenses and state laws. We form the G-index following Gompers et al. (2003) by adding one point for each anti-takeover provision that a firm has in place. Thus higher values correspond to weaker shareholder rights. The G-index is available starting in 1990 and is updated every 2 or 3 years (1990, 1993, 1995, 1998, 2000, 2002, and 2004). The data collection methodology was substantially changed starting 2006. While data is available more frequently, annually, the number of provisions collected is much fewer and the G-index is no longer calculated. However, the six key provisions that constitute Bebchuk et al. (2009) entrenchment index (E-index) and the three key antitakeover provisions that constitute Cremers and Nair's (2005) alternative governance index (ATI) are available for the full time period.

We examine SEO gross underwriter spreads and offer price discounts. The gross spread consists of the management fee, underwriter fee, and selling concession and is quoted as a percentage of total offer proceeds. Following prior studies, we define the offer price discount as the return from the previous day's closing transaction price to the offer price (close-to-offer return), multiplied by negative one. This definition is intuitive because seasoned issuers have observable secondary market prices prior to the offer and underwriters can price offerings with reference to this point. Control variables are constructed using data from CRSP, Compustat, IBES, Thomson Financial, and RiskMetrics. These variables represent factors that are known to be associated with the direct costs of issuing equity or shareholder rights. Variable definitions are presented in the [Appendix](#).

2.2 Descriptive statistics

Table 1 provides the annual frequency of all firms for which antitakeover data are available along with the cross-sectional means of antitakeover measures. The average number of antitakeover provisions has increased over time, particularly in the case of the E-index in the last 8 years. Throughout our analysis we control for time effects to alleviate the concern that this increase influences our findings.

Table 2 provides descriptive statistics for firm and issue characteristics. The median level of the ATI is 2, which is high given that this measure incorporates only three key provisions. The median level for the E-Index is 3 and for the G-Index is 9. By the nature of variable construction, the more antitakeover provisions included in a particular index, the larger is that index's variation. The mean (median) gross spread and discount are 4.21% (4.50%) and 2.75% (1.87%). The average firm has a leverage of 31%, market-to-book ratio

Table 1 Annual frequency of SEOs and the level of external governance

| Issue year | # of SEOs | ATI | E-index | G-index |
|------------|-----------|------|---------|---------|
| 1992 | 35 | 1.89 | 2.71 | 10.03 |
| 1993 | 36 | 1.81 | 2.22 | 9.58 |
| 1994 | 27 | 1.74 | 2.19 | 8.26 |
| 1996 | 20 | 2.15 | 2.70 | 9.70 |
| 1997 | 17 | 2.00 | 2.18 | 8.71 |
| 1998 | 21 | 1.76 | 2.19 | 8.00 |
| 1999 | 33 | 1.97 | 2.24 | 8.42 |
| 2000 | 35 | 2.06 | 2.23 | 8.34 |
| 2001 | 17 | 2.41 | 3.00 | 10.47 |
| 2002 | 55 | 1.96 | 2.69 | 9.00 |
| 2003 | 50 | 1.96 | 2.64 | 9.14 |
| 2004 | 60 | 2.30 | 3.03 | 9.50 |
| 2005 | 31 | 1.97 | 2.65 | 9.03 |
| 2006 | 24 | 2.21 | 4.21 | – |
| 2007 | 33 | 2.06 | 3.79 | – |
| 2008 | 24 | 2.38 | 4.33 | – |
| 2009 | 71 | 2.04 | 4.73 | – |
| 2010 | 24 | 2.13 | 5.42 | – |
| 2011 | 21 | 2.29 | 5.43 | – |
| 2012 | 21 | 2.29 | 5.19 | – |
| 2013 | 30 | 1.87 | 4.93 | – |
| 2014 | 17 | 2.24 | 5.06 | – |
| | 702 | 2.07 | 3.44 | 9.09 |

This table displays the annual number of SEOs during 1992–2014 for which antitakeover measures are available along with the average ATI, E-index and G-index values per year. The ATI is the alternative governance index of Cremers and Nair (2005), which focuses on three key provisions (staggered boards, poison pills, and restrictions on shareholder voting). The E-index is the entrenchment index of Bebchuk, Cohen, and Ferrell (2009), which focuses on six provisions within the G-index. The G-index is formed following Gompers et al. (2003) by adding one point for each anti-takeover provision (of the 24 provisions in IRRC) that a firm has in place

of 1.79, and institutional holdings of 54%. The average firm is followed by 9.67 analysts, which is high but not surprising given that antitakeover provisions are collected for large well-known companies. The average issue size is 14% relative to total shares outstanding, and is preceded by 13% market-adjusted abnormal 60-day returns.

3 Results

In this section we provide empirical tests of the association between the strength of shareholder rights and two direct costs of issuing equity: gross spreads and offer price discounts. The motivation for why these cost variables might be associated with shareholder rights relates to Booth and Smith's (1986) certification hypothesis and Tinic's (1988) implicit insurance hypothesis. Booth and Smith (1986) assert that underwriters stake their

Table 2 Descriptive statistics

| Variable | N | 25th Pctl | Mean | Median | 75th Pctl | SD |
|-----------------------------------|-----|-----------|-----------|-----------|-----------|------------|
| ATI | 702 | 2.00 | 2.05 | 2.00 | 3.00 | 0.81 |
| E-index | 702 | 2.00 | 3.38 | 3.00 | 5.00 | 1.53 |
| G-Index | 437 | 7.00 | 9.11 | 9.00 | 11.00 | 2.78 |
| Gross spread (%) | 702 | 3.51 | 4.21 | 4.50 | 5.00 | 1.32 |
| Discount (%) | 702 | 0.52 | 2.75 | 1.87 | 3.69 | 3.48 |
| Market capitalization (thousands) | 702 | 573,629 | 4,506,863 | 1,125,537 | 2,761,102 | 17,067,662 |
| Leverage | 702 | 0.17 | 0.31 | 0.30 | 0.43 | 0.20 |
| Overnight offer | 702 | 0.00 | 0.37 | 0.00 | 1.00 | 0.48 |
| Relative offer size | 702 | 0.07 | 0.14 | 0.12 | 0.18 | 0.09 |
| Market-to-book | 702 | 0.59 | 1.79 | 1.01 | 2.21 | 1.95 |
| Residual volatility | 702 | 0.02 | 0.03 | 0.02 | 0.03 | 0.01 |
| Turnover | 702 | 6.52 | 33.43 | 11.86 | 25.08 | 75.01 |
| Proceeds | 702 | 77.00 | 252.62 | 131.60 | 261.00 | 349.47 |
| Runup | 702 | -0.04 | 0.13 | 0.08 | 0.23 | 0.28 |
| Offer price | 702 | 16.00 | 31.03 | 26.15 | 40.00 | 21.63 |
| Nasdaq | 702 | 0.00 | 0.35 | 0.00 | 1.00 | 0.48 |
| Analyst following | 702 | 5.00 | 9.67 | 8.00 | 13.00 | 6.87 |
| Institutional holdings | 702 | 0.08 | 0.54 | 0.65 | 0.83 | 0.36 |
| Bond rating | 702 | 0.00 | 3.06 | 0.00 | 6.00 | 4.06 |

This table presents firm and offer characteristics for the sample SEOs. The gross underwriting spread consists of the management fee, underwriter fee, and selling concession and is expressed as a percentage of total offer proceeds. The offer price discount is measured as the return from the previous day's closing transaction price to the offer price (close-to-offer return), multiplied by negative one. All variables are defined in the [Appendix](#)

reputational capital to certify that the offer price reflects potentially adverse inside information. Booth and Smith argue that this information is firm-specific, and therefore the amount of compensation charged by underwriters (either through spreads or discounts) should be an increasing function of firm-specific risk. Tinic (1988) suggests that underpricing is an implicit insurance premium that protects underwriters against legal liability and damage to reputational capital. Following these arguments, we posit that weaker shareholder rights should be reflected in higher gross spreads or deeper offer price discounts. Alternatively, it is possible that underwriters believe that shareholder rights are already reflected in stocks prices. In this case, an underwriter's risk is not related to shareholder rights and thus the underwriter does not adjust the gross spread or offer price discount based on the degree of shareholder rights.

3.1 Spreads, discounts, and shareholder rights

Table 3 displays gross spreads and offer price discounts within different levels of antitakeover measures. For the ATI and E-Index, we report these issue cost variables for firms at each level, i.e., 0–3 for the ATI and 0–6 for the E-index. For the G-Index we report the issue cost variables within Democracy firms with five or fewer antitakeover provisions, Dictatorship firms with 14 or more provisions, and the remainder of firms with between 6

Table 3 Gross spreads and offer price discounts for different levels of shareholder rights

| | N | Mean gross spread | Median gross spread | Mean discount | Median discount spread |
|------------------------------|-----|-------------------|---------------------|---------------|------------------------|
| <i>ATI</i> | | | | | |
| 0 | 24 | 4.75 | 5.00 | 3.33 | 3.35 |
| 1 | 141 | 4.30 | 4.55 | 2.63 | 1.62 |
| 2 | 313 | 4.19 | 4.50 | 3.04 | 2.03 |
| 3 | 224 | 4.12 | 4.50 | 2.37 | 1.75 |
| <i>E-Index</i> | | | | | |
| 0 | 10 | 4.88 | 5.29 | 2.33 | 0.64 |
| 1 | 71 | 4.46 | 4.50 | 2.43 | 1.44 |
| 2 | 146 | 4.24 | 4.73 | 2.46 | 1.64 |
| 3 | 140 | 4.10 | 4.50 | 2.75 | 2.00 |
| 4 | 157 | 4.06 | 4.26 | 2.36 | 1.78 |
| 5 | 108 | 4.05 | 4.31 | 3.32 | 2.46 |
| 6 | 70 | 4.60 | 4.75 | 3.74 | 2.06 |
| <i>G-Index</i> | | | | | |
| Democracy ($G \leq 5$) | 47 | 4.75 | 5.00 | 2.80 | 1.80 |
| $5 < G < 14$ | 361 | 4.17 | 4.50 | 2.80 | 1.92 |
| Dictatorship ($G \geq 14$) | 29 | 4.29 | 4.50 | 1.66 | 0.80 |

This table displays gross underwriter spreads (%) and offer price discounts (%) within different levels of antitakeover indices. Lowest index levels represent firms with the fewest antitakeover provisions (i.e., strongest shareholder rights) and highest index levels represent firms with the most antitakeover provisions (i.e., weakest shareholder rights). The G-index is separated into Democracies ($G \leq 5$), medium levels of the index, and Dictatorships ($G \geq 14$), following Gompers et al. (2003). The gross underwriter spread consists of the management fee, underwriter fee, and selling concession and is expressed as a percentage of total offer proceeds. The offer price discount is the return from the previous day's closing transaction price to the offer price (close-to-offer return), multiplied by negative one

and 13 provisions. This classification follows Gompers et al. (2003). The univariate relation between Gross spread (Discount) and shareholder rights seems inconsistent across the different index measures, possibly because different antitakeover provisions counted or ignored by the different indexes can have differing effect on the cost of equity issues. Moreover, these statistics can be misleading because firm characteristics that are known to be associated with the adopted level of shareholder rights are also known to influence the gross spread and offer price discount. For example, greater idiosyncratic volatility is associated with stronger shareholder rights, larger gross spreads, and deeper offer price discounts (Ferreira and Laux 2007). Subsequent tests control for firm and offer characteristics.

3.2 Simultaneous estimations using Seemingly Unrelated Regressions

We conduct simultaneous regression estimations that examine the influence of antitakeover indexes on the gross underwriter spread and offer price discount in a multivariate setting. In particular, we model the Gross Spread and Discount simultaneously using the Seemingly Unrelated Regressions (SUR) technique to account for the possibility that they are jointly determined. The estimations are as follows:

$$GrossSpread = \alpha_0 + \alpha_1 * GovIndex + \alpha_2 * Discount + \alpha_3 * X + \alpha_4 * YearEffects + \alpha_5 * IndEffects + \epsilon \quad (a)$$

$$Discount = \beta_0 + \beta_1 * GovIndex + \beta_2 * GrossSpread + \beta_3 * Y + \beta_4 * YearEffects + \beta_5 * IndEffects + \epsilon \quad (b)$$

We conduct three separate SUR estimations based on Eqs. (a) and (b), one for each governance index, where the key variables of interest are ATI, E-Index, and G-index. The terms X and Y represent vectors of control variables and the regression employs year and industry fixed effects. The variable Discount is missing for 11 of the 702 sample observations, and thus the joint estimation uses the remaining 691 observations. Control variables in the Gross Spread models include factors that have been shown to influence gross spreads (e.g., Butler et al. 2005) and include market capitalization, residual volatility, relative offer size, a Nasdaq indicator, share abnormal returns in the 60 days prior to the issue, market returns in the 60 days prior to the issue, market-to-book, share turnover, the number of lead managers, underwriter ranking, and the firm's bond rating (and an indicator reflecting no available bond rating). Institutional holdings can be associated with issue costs because marketing shares is easier if the firm already has a wide shareholder base and high liquidity. Moreover, high institutional ownership represents an implicit control mechanism as institutions can "vote with their feet", i.e. sell their shares if they are not satisfied with the managements' policies. Analyst following can reduce issue costs by reducing information asymmetry and increasing transparency. Having a previous relationship with the lead underwriter can result in lower issue costs if the underwriter faces less severe due diligence problems due to familiarity with the issuer, or alternatively, can lead to higher issue costs if switching results in more competitive pricing. We also include an indicator for overnight offers because these are conducted on an accelerated basis (within two trading days of the announcement) with limited marketing and therefore typically with lower underwriter compensation and higher discounts. Models of the offer price discount control for each of these factors and also control for abnormal returns in the prior 5 days (AR5pos; AR5neg) and integer pricing because these additional variables are shown to influence offer price discounts (e.g., Altinkilic and Hansen 2003; Corwin 2003; Kim and Shin 2004; Mola and Loughran 2004).

Table 4 reports the results of the three SUR estimations. In each case, the estimates indicate that there is no significant association between antitakeover indexes and either the gross spread or offer price discount, on average. Moreover, neither issue cost variable significantly influences the other, thus there is no evidence that Gross Spread and Discount are jointly determined. The control variables show that the gross spread is inversely related to the market capitalization of the issuer, analyst following, offer price, and overnight offers, and is positively associated with residual volatility, the number of lead underwriters, and having no bond rating. Moreover, the offer price discount is inversely related to offer proceeds, offer price, and institutional holdings, and positively associated with overnight offers, relative offer size, market capitalization, residual volatility, and no bond rating.

The results of these estimations indicate that a firm's direct cost of raising equity is not affected by its level of shareholder rights, on average. It seems that any incremental effort in certification (or additional reputational or legal risks) resulting from weak shareholder rights is not sufficient for the underwriter to require further compensation from the issuing firm. A likely explanation is that *on average* investors efficiently price the value of shareholder rights prior to the issue such that the bank's risk of issuing overvalued shares is no

Table 4 Simultaneous regression estimations of issue costs

| Explanatory variables | SUR estimation (1) | | SUR estimation (2) | | SUR estimation (3) | |
|-------------------------------|-------------------------|------------------------|-------------------------|-------------------------|-------------------------|-----------------------|
| | Gross spread | Discount | Gross spread | Discount | Gross spread | Discount |
| | (1a) | (1b) | (2a) | (2b) | (3a) | (3b) |
| ATI | 0.0101 (0.0439) | - 0.0516 (0.1559) | - | - | - | - |
| E-Index | - | - | 0.0405 (0.0339) | 0.1310 (0.1204) | - | - |
| G-Index | - | - | - | - | - 0.0004 (0.0173) | - 0.0462 (0.0530) |
| Discount | 0.0061 (0.0114) | - | 0.0055 (0.0114) | - | - 0.0082 (0.0171) | - |
| Gross spread | - | 0.0613 (0.1448) | - | 0.0536 (0.1448) | - | - 0.1187 (0.1595) |
| Overnight offer | - 0.7688*** (0.0941) | 1.1641*** (0.3479) | - 0.7739*** (0.0941) | 1.1343*** (0.3483) | - 0.8496*** (0.1271) | 0.8151** (0.4068) |
| Relative offer size | - 1.0121 (0.8662) | 8.5293*** (3.0718) | - 0.9680 (0.8650) | 8.7857*** (3.0665) | - 0.8224 (1.0405) | 2.4221 (3.1490) |
| Ln(Market capitalization) | - 0.6090*** (0.1019) | 0.8303** (0.3732) | - 0.6010*** (0.1020) | 0.8511** (0.3734) | - 0.5772*** (0.1200) | - 0.0854 (0.3745) |
| Market-to-book | 0.0296 (0.0266) | - 0.1121 (0.0946) | 0.0316 (0.0266) | - 0.1029 (0.0947) | 0.0622* (0.0334) | - 0.0262 (0.1016) |
| Residual volatility | 11.6325** (4.6580) | 42.0887** (17.0846) | 11.8638*** (4.6568) | 43.1173*** (17.0890) | 5.4606 (6.4285) | 35.3238* (20.3568) |
| Turnover | - 0.0002 (0.0004) | 0.0002 (0.0017) | - 0.0002 (0.0004) | 0.0004 (0.0017) | - 0.0002 (0.0005) | 0.0000 (0.0015) |
| Underwriter previous relation | 0.1492* (0.0780) | - 0.1564 (0.2768) | 0.1510* (0.0778) | - 0.1536 (0.2764) | 0.0937 (0.1010) | - 0.3487 (0.3075) |
| Ln(Proceeds) | 0.0346 (0.1148) | - 0.9649** (0.4080) | 0.0267 (0.1149) | - 0.9979** (0.4083) | - 0.0139 (0.1352) | - 0.4368 (0.4092) |

Table 4 (continued)

| Explanatory variables | SUR estimation (1) | | SUR estimation (2) | | SUR estimation (3) | |
|---------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | Gross spread | Discount | Gross spread | Discount | Gross spread | Discount |
| | (1a) | (1b) | (2a) | (2b) | (3a) | (3b) |
| Runup | -0.2416 (0.1594) | -0.2126 (0.5747) | -0.2382 (0.1592) | -0.2077 (0.5742) | -0.2238 (0.2023) | 0.1096 (0.6352) |
| Market runup | 0.9797* (0.5972) | 0.9979 (2.1220) | 1.0257* (0.5978) | 1.1663 (2.1253) | -0.0300 (0.8155) | 3.6159 (2.4636) |
| Ln(Offer price) | -0.1312* (0.0769) | -0.8605*** (0.2757) | -0.1361* (0.0769) | -0.8788*** (0.2758) | -0.2054** (0.1014) | -1.1021*** (0.3053) |
| Ln(#Lead Mgrs) | 0.7663*** (0.0905) | -0.1206 (0.3402) | 0.7625*** (0.0904) | -0.1266 (0.3399) | 0.9554*** (0.1329) | 0.0670 (0.4301) |
| Nasdaq | 0.0562 (0.0999) | 0.4346 (0.3559) | 0.0561 (0.0997) | 0.4270 (0.3554) | 0.0988 (0.1304) | 0.1885 (0.3979) |
| Ln(1 + Analyst following) | -0.2492*** (0.0627) | -0.1110 (0.2261) | -0.2507*** (0.0624) | -0.1069 (0.2251) | -0.2145*** (0.0781) | 0.0367 (0.2408) |
| Institutional holdings | 0.1842 (0.2045) | -1.1814* (0.7228) | 0.1867 (0.2042) | -1.1803* (0.7219) | 0.2720 (0.2502) | -1.4931** (0.7545) |
| Bond rating | 0.0187 (0.0218) | 0.1013 (0.0771) | 0.0191 (0.0217) | 0.1024 (0.0770) | 0.0321 (0.0296) | 0.1794** (0.0895) |
| Not rated | 0.3853** (0.1719) | 1.0390* (0.6099) | 0.3930** (0.1718) | 1.0613* (0.6097) | 0.6607*** (0.2408) | 1.8929*** (0.7304) |
| AR5neg | - | -0.5347 (3.8642) | - | -0.8075 (3.8631) | - | -6.7100 (4.3773) |
| AR5pos | - | 5.2058* (2.6806) | - | 5.3137** (2.6764) | - | 5.2715* (2.8068) |
| Integer | - | 0.7612*** (0.2731) | - | 0.7532*** (0.2724) | - | 0.7171** (0.3002) |

Table 4 (continued)

| Explanatory variables | SUR estimation (1) | | SUR estimation (2) | | SUR estimation (3) | |
|---------------------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|
| | Gross spread (1a) | Discount (1b) | Gross spread (2a) | Discount (2b) | Gross spread (3a) | Discount (3b) |
| Year and industry fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted R-squared | 0.58 | 0.23 | 0.59 | 0.23 | 0.61 | 0.32 |
| N | 691 | 691 | 691 | 691 | 437 | 437 |

This table provides coefficient estimates from regressing gross underwriter spreads and offer price discounts on antitakeover indexes and other firm and offer characteristics modeled as a system of equations. The estimation method uses the Seemingly Unrelated Regressions (SUR) technique. There are three separate sets of SUR estimations: Models (1a) and (1b); Models (2a) and (2b); Models (3a) and (3b). All variables are defined in the [Appendix](#). Firm and industry fixed effects are included. Standard errors are in parentheses

*, **, and ***: Significance at the 10, 5, and 1% level, respectively

greater for firms with weak shareholder rights than it is for firms with strong shareholder rights.

In Table 5, we focus on firms with extremely weak shareholder rights instead of focusing on averages. Specifically, we replace the governance index variables with indicators for firms that have the highest level of ATI (three provisions; 224 such firms), E-Index (six provisions; 70 firms), or are Dictatorships ($G \geq 14$; 29 firms). In the latter case, we control for whether the firm is a Democracy ($G \leq 5$; 47 firms). Estimations are conducted as in Table 4 with SUR estimations using the same jointly determined system of equations and employing the same control variables. In the first SUR estimation, reported in Models (1a) and (1b) of Table 5, we find no evidence that firms with $ATI = 3$ pay significantly different gross spreads compared to other firms. This result is not surprising (given that Table 4 shows no relation, on average) because close to one-third of firms fall in this category. The next two SUR estimations [Models (2a) and (2b); and Models (3a) and (3b)], however, provide evidence that firms with the weakest shareholder rights (most antitakeover provisions) pay higher gross underwriting spreads. Firms with six E-Index provisions pay 0.43% higher underwriting spreads compared to firms with fewer provisions and Dictatorships pay 0.46% higher spreads compared to other firms. The results are statistically significant at the 1% level. These estimates can be interpreted as evidence that underwriters charge a higher gross spread for firms with extremely weak shareholder rights due to increased reputational or legal risk. Interestingly, there is some weak evidence (10% level) that underwriters charge more from Democracy firms compared to firms with less extreme levels. With respect to the Discount, the estimations provide no evidence that this measure of issuance costs is impacted by shareholder rights even in the extreme cases of weak shareholder rights.

The estimates in Tables 4 and 5 indicate that the Gross Spread and Discount are not jointly determined. Thus the remainder of the paper presents results by modeling the two variables separately. We note that the results in Tables 4 and 5 are similar if we model the Gross Spread and Discount with separate estimations.

3.3 Estimations of the expected level of governance

The strength of governance might be endogenous with the need for governance (e.g., Demsetz and Lehn 1985). The literature identifies several factors that are associated with the level of shareholder rights. Stronger rights are associated with smaller firms, greater residual volatility, and lower institutional holdings (Gompers et al. 2003; Cremers and Nair 2005; Ferreira and Laux 2007). The absolute level of shareholder rights might therefore not be as informative as the relative deviations from a firm-specific optimum. Assuming that firms, on average, adopt a level of shareholder rights that is warranted based on firm characteristics, we can estimate the optimal level for each firm. Deviations from this optimal level can be considered too strong or too weak, potentially increasing the underwriter's certification effort and thus the cost of issuing equity.⁶ As noted throughout the paper, we

⁶ This approach of examining deviations from predicted levels of shareholder rights follows Autore et al. (2009), who examine whether shareholder rights are reflected in analyst recommendations and find that analysts give more favorable recommendations to firms with stronger shareholder rights, but only when strong shareholder rights are expected. Their findings indicate that shareholder rights might not always be priced efficiently. In the context of our study, it is possible that there is an association between shareholder rights and gross spreads/discounts when shareholder rights are unexpectedly weak if investors do not efficiently price unexpectedly weak shareholder rights before an equity offer takes place.

Table 5 Simultaneous estimations of issue costs with extreme shareholder rights indicators

| Explanatory variables | SUR estimation (1) | | SUR estimation (2) | | SUR estimation (3) | |
|-------------------------------|-------------------------|------------------------|-------------------------|------------------------|-------------------------|-----------------------|
| | Gross spread | Discount | Gross spread | Discount | Gross spread | Discount |
| | (1a) | (1b) | (2a) | (2b) | (3a) | (3b) |
| Max(ATI) | 0.0894 (0.0762) | - 0.1695 (0.2704) | - | - | - | - |
| Max(E-Index) | - | - | 0.4301*** (0.1436) | 0.3511 (0.5161) | - | - |
| Dictatorship | - | - | - | - | 0.4589*** (0.1787) | - 0.1867 (0.5548) |
| Democracy | - | - | - | - | 0.2453* (0.1488) | 0.1060 (0.4598) |
| Discount | 0.0065 (0.0114) | - | 0.0052 (0.0113) | - | - 0.0070 (0.0169) | - |
| Gross spread | - | 0.0652 (0.1449) | - | 0.0488 (0.1459) | - | - 0.1139 (0.1618) |
| Overnight offer | - 0.7693*** (0.0940) | 1.1651*** (0.3477) | - 0.7768*** (0.0934) | 1.1431*** (0.3486) | - 0.8442*** (0.1258) | 0.8148*** (0.4082) |
| Relative offer size | - 0.9656 (0.8651) | 8.4750*** (3.0702) | - 0.9513 (0.8586) | 8.6301*** (3.0639) | - 0.8091 (1.0262) | 2.6462 (3.1431) |
| Ln(Market capitalization) | - 0.6108*** (0.1018) | 0.8337** (0.3732) | - 0.5832*** (0.1015) | 0.8415** (0.3735) | - 0.5766*** (0.1190) | - 0.0838 (0.3761) |
| Market-to-book | 0.0332 (0.0267) | - 0.1176 (0.0952) | 0.0324 (0.0264) | - 0.1072 (0.0946) | 0.0643* (0.0329) | - 0.0191 (0.1014) |
| Residual volatility | 11.3965** (4.6570) | 42.4698** (17.0848) | 12.3146*** (4.6293) | 42.6679** (17.0927) | 4.9946 (6.3537) | 34.3850* (20.3945) |
| Turnover | - 0.0002 (0.0004) | 0.0002 (0.0017) | - 0.0002 (0.0004) | 0.0003 (0.0017) | - 0.0002 (0.0005) | 0.0001 (0.0015) |
| Underwriter previous relation | 0.1492* (0.0778) | - 0.1591 (0.2766) | 0.1647** (0.0775) | - 0.1458 (0.2773) | 0.1022 (0.0999) | - 0.3629 (0.3082) |

Table 5 (continued)

| Explanatory variables | SUR estimation (1) | | SUR estimation (2) | | SUR estimation (3) | |
|---------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | Gross spread | Discount | Gross spread | Discount | Gross spread | Discount |
| | (1a) | (1b) | (2a) | (2b) | (3a) | (3b) |
| Ln(Proceeds) | 0.0328 (0.1147) | -0.9624** (0.4078) | 0.0226 (0.1140) | -0.9773** (0.4079) | 0.0016 (0.1340) | -0.4478 (0.4105) |
| Runup | -0.2368 (0.1593) | -0.2178 (0.5747) | -0.2380 (0.1582) | -0.2100 (0.5746) | -0.2284 (0.2011) | 0.0985 (0.6391) |
| Market runup | 0.9530 (0.5969) | 1.0451 (2.1225) | 0.9155 (0.5931) | 0.9616 (2.1222) | -0.2160 (0.8115) | 3.5908 (2.4824) |
| Ln(Offer price) | -0.1330* (0.0768) | -0.8567*** (0.2757) | -0.1333* (0.0763) | -0.8656*** (0.2756) | -0.2266** (0.1004) | -1.1144*** (0.3069) |
| Ln(#Lead Mgrs) | 0.7690*** (0.0904) | -0.1281 (0.3403) | 0.7582*** (0.0899) | -0.1161 (0.3401) | 0.9801*** (0.1318) | 0.0698 (0.4342) |
| Nasdaq | 0.0592 (0.0998) | 0.4271 (0.3557) | 0.0237 (0.0997) | 0.4067 (0.3575) | 0.1108 (0.1283) | 0.2210 (0.3966) |
| Ln(1 + Analyst following) | -0.2460*** (0.0625) | -0.1120 (0.2255) | -0.2644*** (0.0622) | -0.1199 (0.2263) | -0.2347*** (0.0774) | 0.0538 (0.2424) |
| Institutional holdings | 0.1734 (0.2045) | -1.1644* (0.7233) | 0.1709 (0.2030) | -1.1958* (0.7224) | 0.3066 (0.2489) | -1.4787* (0.7606) |
| Bond rating | 0.0184 (0.0217) | 0.1019 (0.0771) | 0.0196 (0.0216) | 0.1023 (0.0771) | 0.0320 (0.0291) | 0.1716* (0.0892) |
| Not rated | 0.3815** (0.1717) | 1.0436* (0.6098) | 0.4193** (0.1710) | 1.0684* (0.6114) | 0.6480*** (0.2373) | 1.8432*** (0.7295) |
| AR5neg | - | -0.4990 (3.8627) | - | -0.4534 (3.8649) | - | -6.6525 (4.4081) |
| AR5pos | - | 5.1982* (2.6784) | - | 5.2731** (2.6775) | - | 5.4218* (2.8158) |
| Integer | - | 0.7578*** (0.2726) | - | 0.7619*** (0.2727) | - | 0.6964** (0.2999) |

Table 5 (continued)

| Explanatory variables | SUR estimation (1) | | SUR estimation (2) | | SUR estimation (3) | |
|---------------------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|
| | Gross spread (1a) | Discount (1b) | Gross spread (2a) | Discount (2b) | Gross spread (3a) | Discount (3b) |
| Year and industry fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted R-squared | 0.59 | 0.23 | 0.59 | 0.23 | 0.62 | 0.32 |
| N | 691 | 691 | 691 | 691 | 437 | 437 |

This table provides coefficient estimates from regressing gross underwriter spreads and offer price discounts on binary variables indicating extreme antitakeover indexes and other firm and offer characteristics modeled as a system of equations. The estimation method uses the Seemingly Unrelated Regressions (SUR) technique. There are three separate sets of SUR estimations: Models (1a) and (1b); Models (2a) and (2b); Models (3a) and (3b). All variables are defined in the [Appendix](#). Firm and industry fixed effects are included. Standard errors are in parentheses

*, **, and ***Significance at the 10, 5, and 1% level, respectively

believe that a deviation indicating weaker than expected shareholder rights is of primary concern for investment banks whose risk is in underwriting offers of overvalued issuers.

To test for these effects, we decompose the strength of shareholder rights into predicted and residual components and include these components in tests of the relation between equity issue costs and shareholder rights. We decompose shareholder rights by conducting an OLS estimation of each antitakeover index regressed on the natural logarithm of market capitalization, a Nasdaq indicator, turnover, residual volatility, market-to-book, institutional holdings, and leverage. We include leverage to control for debtholder monitoring. From this estimation we obtain the part of the index associated with firm characteristics and the part orthogonal to firm traits.

Next, we re-estimate the models in Table 4 after replacing the level of shareholder rights with the predicted shareholder rights and residual shareholder rights. The residual index is the actual index minus the predicted index, and represents the deviation of the actual index level from that predicted by firm traits. We split this residual index into positive and negative components. The positive residual index captures deviations that reflect poorer governance than predicted, since a higher index reflects poorer governance. The negative residual index picks up deviations that reflect better governance than predicted.

Table 6 provides OLS estimates of the SEO issue costs regressed against the predicted indexes, the positive and negative components of the residual indexes, and other factors that are known to be associated with issue costs. The estimates reveal that the residual, or unexpected, part of firms' shareholder rights has significant impact on Gross spreads for the G-Index. Perhaps we don't find the same significance in deviations from other predicted indices because those indices have a narrower scope and therefore less overall variations in the deviations, even though the coefficient signs are consistent. Based on the G-Index, underwriters charge firms with poorer than warranted shareholder rights a higher gross spread and firms with better than expected shareholder rights a lower gross spread. This finding does not extend to offer price discounts.

3.4 Pairwise estimations that examine changes across a firm's offers

Our models of the SEO gross spread and discount control for several variables: relative offer size, overnight offering, market capitalization, market-to-book, residual volatility, turnover, proceeds, stock price run-up, market returns, offer price, number of lead managers, Nasdaq listing, analyst following, institutional holdings, and bond ratings. Nevertheless, as with any empirical study, it is hard to rule out the possibility that our estimations suffer from an omitted variable bias. To alleviate this concern, we devise a pairwise test by exploiting the fact that several sample firms conduct multiple SEOs within our sample period. Specifically, we have 130 firms with two or more offers in our sample; the largest number of offers by a firm is ten. We create a sample in which we pair each offer with each of the previous offers of the same firm. This results in 349 pairs of offers conducted by the same firm. Next, we calculate the difference in issuance costs and firm characteristics between the later and earlier offer in each pair. The change in the particular variable equals the value of the variable at the time of the later offer minus the value at the time of the earlier offer. Finally, we estimate a regression in which we use paired differences to explain the change in a firm's issue costs with changes in firm and offer traits. This estimation method helps to alleviate concerns about omitted firm-specific factors.

Table 7 provides the results. The explanatory variable of interest is the measure of extreme shareholder rights, reflected by the change in either Max(ATI), Max(E-Index), or

Table 6 Explaining issue costs with the predicted and residual shareholder rights

| Explanatory variables | Dependent variable | | | | | |
|---------------------------|------------------------------|------------------------|------------------------|--------------------------|-----------------------|-----------------------|
| | Models (1)–(3): Gross spread | | | Models (4)–(6): Discount | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Predicted (ATI) | 0.8365 (5.9872) | – | – | –8.763 (37.8062) | – | – |
| Residual (ATI) pos | 0.164 (0.1150) | – | – | –0.3135 (0.3291) | – | – |
| Residual (ATI) neg | –0.1265 (0.0826) | – | – | 0.1686 (0.2820) | – | – |
| Predicted (E-Index) | – | 0.0263 (0.1655) | – | – | 0.3691 (1.0678) | – |
| Residual (E-Index) pos | – | 0.0832 (0.0795) | – | – | 0.0042 (0.2911) | – |
| Residual (E-Index) neg | – | –0.0198 (0.0497) | – | – | 0.2414* (0.1271) | – |
| Predicted (G-Index) | – | – | 0.0551 (0.2692) | – | – | –0.3352 (0.9049) |
| Residual (G-Index) pos | – | – | 0.0579** (0.0236) | – | – | –0.1109 (0.0945) |
| Residual (G-Index) neg | – | – | –0.0625*** (0.0301) | – | – | 0.0255 (0.1031) |
| Overnight offer | –0.7467*** (0.1197) | –0.7509*** (0.1166) | –0.8543*** (0.1515) | 1.1086*** (0.3437) | 1.0808*** (0.3509) | 0.9211*** (0.3336) |
| Relative offer size | –0.7272 (0.6574) | –0.7055 (0.6377) | –0.8565 (0.8101) | 8.4555 (7.8781) | 8.7655 (7.9609) | 2.6237 (4.4366) |
| Ln(Market capitalization) | –0.6607 (0.4604) | –0.5889*** (0.1094) | –0.5863*** (0.1207) | 1.4917 (3.2036) | 0.8028 (0.6734) | 0.0698 (0.5118) |
| Market-to-book | 0.0576 (0.1151) | 0.0379 (0.0246) | 0.0666* (0.0391) | –0.2909 (0.7236) | –0.0835 (0.1532) | –0.0646 (0.1683) |

Table 6 (continued)

| Explanatory variables | Dependent variable | | | | | |
|-------------------------------|------------------------------|------------------------|-----------------------|--------------------------|------------------------|------------------------|
| | Models (1)–(3): Gross spread | | | Models (4)–(6): Discount | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Residual volatility | 11.206 (13.9281) | 10.3228* (5.6954) | 4.9113 (7.6365) | 24.4562 (78.3256) | 44.409*** (16.1893) | 33.5275* (19.0034) |
| Turnover | 0.0007 (0.0064) | -0.0002 (0.0003) | 0 (0.0010) | -0.0091 (0.0402) | 0.0008 (0.0014) | -0.0008 (0.0028) |
| Underwriter previous relation | 0.1599* (0.0853) | 0.1638* (0.0876) | 0.0989 (0.0843) | -0.1588 (0.2696) | -0.1625 (0.2926) | -0.3634 (0.2530) |
| Ln(Proceeds) | 0.0012 (0.1082) | 0.0028 (0.1071) | -0.0031 (0.1503) | -0.9494 (0.6937) | -0.9981 (0.7036) | -0.439 (0.3968) |
| Runup | -0.2257 (0.1978) | -0.2353 (0.1884) | -0.2379 (0.2147) | -0.238 (0.5638) | -0.2003 (0.5709) | 0.1775 (0.8763) |
| Market runup | 0.8691 (0.6295) | 0.9602 (0.6363) | -0.0947 (0.7641) | 1.1726 (3.6982) | 1.2109 (3.6780) | 3.665 (3.3122) |
| Ln(Offer price) | -0.1174 (0.0748) | -0.1115 (0.0743) | -0.2098** (0.0920) | -0.8727*** (0.2986) | -0.9056*** (0.2915) | -1.0723*** (0.2628) |
| Ln(#Lead Mgrs) | 0.7539*** (0.1324) | 0.7393*** (0.1320) | 0.977*** (0.2060) | -0.0814 (0.3089) | -0.0714 (0.3042) | -0.0693 (0.3233) |
| Nasdaq | 0.0634 (0.1780) | 0.0619 (0.0709) | 0.1936 (0.3112) | 0.6227 (1.1572) | 0.411 (0.5732) | -0.2069 (1.3328) |
| Ln(1 + Analyst following) | -0.247*** (0.0744) | -0.2513*** (0.0806) | -0.2282** (0.1151) | -0.1223 (0.1432) | -0.1067 (0.1424) | 0.0767 (0.2563) |
| Institutional holdings | -0.0466 (1.3888) | 0.1416 (0.2583) | 0.2647 (0.3139) | 0.7699 (7.9880) | -1.498 (1.8848) | -1.4585* (0.7805) |
| Bond rating | 0.0159 (0.0252) | 0.0168 (0.0250) | 0.028 (0.0331) | 0.1* (0.0561) | 0.0989* (0.0545) | 0.1746* (0.0900) |

Table 6 (continued)

| Explanatory variables | Dependent variable | | | | | |
|---------------------------------|------------------------------|-------------------|----------------------|--------------------------|----------------------|----------------------|
| | Models (1)–(3): Gross spread | | | Models (4)–(6): Discount | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Not rated | 0.3338 (0.2205) | 0.338 (0.2174) | 0.6403** (0.2788) | 1.0235* (0.5910) | 1.0365* (0.5783) | 1.7767** (0.7506) |
| AR5neg | – | – | – | –0.5644 (5.4295) | –0.948 (5.4518) | –6.751 (5.6539) |
| AR5pos | – | – | – | 5.1772 (5.0012) | 5.2493 (5.0308) | 5.0127 (6.0048) |
| Integer | – | – | – | 0.7541** (0.3342) | 0.7467** (0.3287) | 0.7139** (0.3494) |
| Year and industry fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| R-square | 0.62 | 0.62 | 0.67 | 0.33 | 0.33 | 0.44 |
| N | 702 | 702 | 437 | 691 | 691 | 437 |

This table presents coefficient estimates from regressing issue costs on the predicted and residual components of antitakeover indexes and other firm and offer characteristics. Estimations (1) through (3) model the gross underwriter spread. Estimations (4) through (6) model the offer price discount. The antitakeover indexes are decomposed by regressing them to the natural logarithm of market capitalization, a Nasdaq indicator, turnover, residual volatility, market-to-book, institutional holdings, and leverage. All variables are defined in the [Appendix](#). Standard errors clustered by industry are in parentheses

*, **, and ***Significance at the 10, 5, and 1% level, respectively

Table 7 Estimations of firm-pairwise differences

| Explanatory variables | Dependent variable | | | | | |
|--|------------------------------|-------------------------|-------------------------|--------------------------|-----------------------|----------------------|
| | Models (1)–(3): Gross spread | | | Models (4)–(6): Discount | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Δ Max(ATI) | 0.332** (0.1460) | – | – | – 0.7131 (1.6485) | – | – |
| Δ Max(E-Index) | – | 0.5852* (0.3589) | – | – | – 0.1947 (1.3450) | – |
| Δ Dictatorship | – | – | 0.9141** (0.3705) | – | – | 5.7734** (2.3709) |
| Δ Overnight offer | – 0.7302*** (0.1482) | – 0.7481*** (0.1297) | – 0.7585*** (0.2853) | 0.2438 (0.5939) | 0.2938 (0.6148) | 0.3029 (0.5884) |
| Δ Relative offer size | – 3.9667*** (1.4143) | – 3.2168*** (1.3646) | – 0.6623 (2.3272) | 12.4594 (14.2625) | 11.5626 (13.2984) | – 1.1071 (3.3580) |
| Δ Ln(Market capitalization) | – 0.8664*** (0.2556) | – 0.8162*** (0.2563) | – 0.4765 (0.4044) | 2.6091 (1.9792) | 2.5075 (1.8104) | 0.69* (0.3615) |
| Δ Market-to-book | – 0.172* (0.1022) | – 0.1818* (0.1000) | – 0.0372 (0.0834) | 0.3822 (0.6168) | 0.4155 (0.6526) | 0.8005* (0.4137) |
| Δ Residual volatility | 15.1666** (6.4573) | 15.7752*** (5.8813) | 1.0888 (8.9627) | 77.7589* (43.7816) | 79.1486* (47.7562) | 30.9712 (30.4206) |
| Δ Turnover | – 0.001 (0.0011) | – 0.0009 (0.0012) | – 0.0003 (0.0015) | 0.0109** (0.0054) | 0.0109** (0.0053) | 0.0092** (0.0044) |
| Δ Underwriter previous relation | 0.4184*** (0.1152) | 0.4008*** (0.1119) | – 0.0585 (0.1825) | 0.1364 (0.6535) | 0.1417 (0.6237) | – 0.3053 (0.5629) |
| Δ Ln(Proceeds) | 0.6565*** (0.2269) | 0.5598*** (0.2104) | 0.4535 (0.3655) | – 0.9874 (1.4537) | – 0.8624 (1.2762) | – 0.3379 (0.2404) |
| Δ Runup | – 0.3628* (0.2231) | – 0.3189 (0.2376) | 0.0486 (0.2068) | – 0.2077 (0.7197) | – 0.3077 (0.7512) | – 1.1224 (0.7704) |
| Δ Market runup | 0.0558 (1.1651) | – 0.0686 (1.0929) | – 1.743 (1.1306) | 0.1189 (2.6756) | 0.004 (2.4277) | 1.2974 (2.7612) |

Table 7 (continued)

| Explanatory variables | Dependent variable | | | | | |
|--|------------------------------|-------------------------|-----------------------|--------------------------|------------------------|-------------------------|
| | Models (1)–(3): Gross spread | | | Models (4)–(6): Discount | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| $\Delta \text{Ln}(\text{Offer price})$ | - 0.1786 (0.2092) | - 0.0495 (0.1649) | - 0.1006 (0.2389) | - 3.3603** (1.4028) | - 3.5105** (1.5236) | - 1.9488*** (0.7191) |
| $\Delta \text{Ln}(\#\text{Lead Mgrs})$ | 0.9679*** (0.1854) | 0.9361*** (0.1864) | 1.3375*** (0.3613) | - 1.1598 (0.9948) | - 1.1153 (0.9509) | 0.3607 (0.4660) |
| $\Delta \text{Ln}(1 + \text{Analyst following})$ | - 0.2928*** (0.1034) | - 0.2711*** (0.1029) | - 0.072 (0.0697) | 0.2133 (0.3945) | 0.2321 (0.3576) | 0.4805 (0.3876) |
| $\Delta \text{Institutional holdings}$ | - 0.3514 (0.2943) | - 0.3417 (0.2755) | - 0.6441* (0.3320) | - 0.2589 (1.0563) | - 0.3854 (1.2990) | 0.9658 (0.9304) |
| ΔAR5neg | - | - | - | - 13.1156 (8.4298) | - 13.8376 (8.7840) | - 2.1411 (12.7667) |
| ΔAR5pos | - | - | - | 1.8834 (6.5318) | 1.7366 (7.0004) | 11.6364 (8.8362) |
| $\Delta \text{Integer}$ | - | - | - | 0.4037 (0.5885) | 0.4175 (0.6000) | 0.3074 (0.7037) |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| R-square | 0.44 | 0.44 | 0.45 | 0.33 | 0.33 | 0.31 |
| N | 349 | 349 | 154 | 343 | 343 | 154 |

The sample consists of pairwise differences between the same firm's current and previous SEO. All variables are differenced, where the change in the particular variable equals the value of the variable at the time of the later offer minus the value at the time of the earlier offer. Estimations (1) through (3) model the differenced gross underwriter spread. Estimations (4) through (6) model the differenced offer price discount. All variables are defined in the [Appendix](#). Standard errors are in parentheses
*, **, and ***Significance at the 10, 5, and 1% level, respectively

Dictatorship. For example, Δ Dictatorship takes the value of one if the firm was not a dictatorship in its prior offer but is a dictatorship (more anti-takeover measures) in its latter offer, 0 if it did not change its dictatorship status across offers, and -1 if it was a dictatorship in its earlier offer but not in its latter offer. The estimates indicate, for each of the three measures, that a particular firm pays a higher gross spread after it adopts anti-takeover measures that weaken its shareholder rights to an extreme level, *ceteris paribus*.

3.5 Controlling for board characteristics

The analysis so far concentrates exclusively on external shareholder rights. However, there are other facets of corporate governance, and the literature provides evidence that various governance mechanisms (e.g., analyst following, institutional holdings, board characteristics) interact with each other (Smith and Watts 1992; Demsetz and Villalonga 2001; Himmelberg et al. 1999; Hermalin and Weisbach 2003; Lehn et al. 2009; Boone et al. 2007; Cornett et al. 2007; Jiraporn et al. 2006; Knyazeva 2008). The inclusion of these governance mechanisms in our analysis can sharpen our inferences regarding the effect of shareholder rights on issue costs, as well as provide insight about how underwriters view these mechanisms.⁷ The results presented in the previous sections control for analyst following and institutional holdings, and provide evidence that underwriters charge a lower gross spread in offers by firms with greater analyst following. A potential reason is that underwriters have less reputational and legal pressure when investors have more information intermediaries that provide information about the firm.

Table 8 provides correlations between governance indexes, control variables, and board variables. Shareholder rights tend to be weaker when the board has a large percentage of independent directors and is relatively large, whereas rights tend to be stronger when the percentage of insiders on the board is high. The potential substitution effect of external and internal governance motivates us to control for board characteristics in our estimations.

Panel A of Table 9 includes a variable representing the percentage of independent board members, the number of board members minus its median, 9, and a variable constructed by taking the squared difference of board size minus the median number of directors [i.e., the square of (board size minus 9)]. The latter variable is designed to control for non-linearities in the relationship between board size and board productivity. Panel B of Table 9 replaces board independence with a variable indicating the percentage of insider board members. These two variables have a high correlation (-69%) and including them in the same regression introduces the potential for multicollinearity. Note that board variables are available only for about 60% of our sample.

Similar to our baseline tests, the estimates indicate that after controlling for internal governance based on several board measures, firms with extremely weak shareholder rights pay higher gross spreads, but shareholder rights do not affect offer price discounts. With respect to board variables, in one Gross Spread estimation we find that firms with a larger board size pay lower gross spreads, and in two Discount models we find that greater

⁷ In unreported, results we model Gross Spread and Discount while adding a proxy for debtholder monitoring. Specifically, each year we assign each firm into one of two groups based on whether its leverage is above or below the median leverage of all Compustat firms and indicate this assignment by a binary variable. To separate the effect of bank monitoring, we construct another variable, defined as a binary variable that takes the value of 1 if the firm has high leverage and no bond rating. The results indicate that debtholder monitoring and bank monitoring have no significant impact on the direct issuance costs and they do not alter our finding that firms with weak shareholder rights pay higher gross spreads in SEOs.

Table 8 Correlations between board characteristics, shareholder rights, and firm characteristics

| | ATI | E-index | G-index | Board size | Board size ² | Board Indep. | Insider | Ln (Mktcap) | Rel. offersize | Inst.hold. | Analyst following | Res. volat. |
|----------------------------|--------|---------|---------|------------|-------------------------|--------------|---------|-------------|----------------|------------|-------------------|-------------|
| ATI | 1 | 0.469 | 0.61 | 0.19 | -0.024 | 0.05 | -0.067 | 0.142 | -0.123 | 0.141 | 0.052 | -0.078 |
| E-index | 0.469 | 1 | 0.709 | 0.114 | -0.187 | 0.397 | -0.295 | 0.095 | -0.005 | 0.41 | 0.013 | -0.073 |
| G-index | 0.61 | 0.709 | 1 | 0.427 | -0.007 | 0.274 | -0.221 | 0.171 | -0.162 | 0.053 | 0.155 | -0.198 |
| Board size | 0.19 | 0.114 | 0.427 | 1 | 0.258 | 0.127 | -0.225 | 0.458 | -0.181 | -0.025 | 0.274 | -0.196 |
| Board size ² | -0.024 | -0.187 | -0.007 | 0.258 | 1 | -0.073 | 0.135 | 0.202 | -0.14 | -0.137 | 0.118 | -0.004 |
| Board Indep. | 0.05 | 0.397 | 0.274 | 0.127 | -0.073 | 1 | -0.69 | 0.07 | -0.073 | 0.428 | 0.05 | -0.036 |
| Insiders | -0.067 | -0.295 | -0.221 | -0.225 | 0.135 | -0.69 | 1 | -0.065 | -0.016 | -0.269 | -0.028 | 0.082 |
| Ln(Mktcap) | 0.142 | 0.095 | 0.171 | 0.458 | 0.202 | 0.07 | -0.065 | 1 | -0.583 | 0.189 | 0.648 | -0.258 |
| Rel.offersize | -0.123 | -0.005 | -0.162 | -0.181 | -0.14 | -0.073 | -0.016 | -0.583 | 1 | -0.022 | -0.431 | 0.159 |
| Institutional hold- ing | 0.141 | 0.41 | 0.053 | -0.025 | -0.137 | 0.428 | -0.269 | 0.189 | -0.022 | 1 | -0.026 | -0.017 |
| Analyst following | 0.052 | 0.013 | 0.155 | 0.274 | 0.118 | 0.05 | -0.028 | 0.648 | -0.431 | -0.026 | 1 | -0.158 |
| Residual volatility | -0.078 | -0.073 | -0.198 | -0.196 | -0.004 | -0.036 | 0.082 | -0.258 | 0.159 | -0.017 | -0.158 | 1 |

This table provides correlation coefficients between board variables, antitakeover indexes, and firm characteristics. Board variables are the following: Board independence defined as the percentage of independent board members; Insiders defined as the percentage of insiders on the board; and Board size equals the total number of board members. All variables are defined in the [Appendix](#)

Table 9 Explaining issue costs with the inclusion of board characteristics

| Explanatory variables | Panel A: Including board size and board independence | | | | | |
|---------------------------|--|------------------------|------------------------|--------------------------|-----------------------|---------------------|
| | Models (1)–(3): Gross spread | | | Models (4)–(6): Discount | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Max(ATI) | 0.0333 (0.1121) | - | - | -0.1491 (0.2755) | - | - |
| Max(E-Index) | - | 0.3375** (0.1569) | - | - | 0.8721 (1.0197) | - |
| Democracy | - | - | 0.043 (0.1621) | - | - | -0.3098 (0.5540) |
| Dictatorship | - | - | 0.6161*** (0.2093) | - | - | -0.2155 (0.6379) |
| Board size | -0.0311 (0.0343) | -0.0319 (0.0320) | -0.0812*** (0.0299) | 0.062 (0.0912) | 0.0423 (0.0838) | -0.0421 (0.1095) |
| Board size ² | -0.0021 (0.0067) | -0.0011 (0.0063) | 0.0025 (0.0069) | -0.0232 (0.0230) | -0.0188 (0.0216) | 0.0261 (0.0319) |
| Board independence | 0.2347 (0.2303) | 0.2223 (0.2296) | 0.4329 (0.3126) | 2.1106*** (0.9000) | 2.1474** (0.8934) | 1.9845 (1.2725) |
| Overnight offer | -0.607*** (0.1250) | -0.615*** (0.1230) | -0.8019*** (0.1609) | 0.8415* (0.4864) | 0.7994* (0.4601) | 0.2644 (0.2934) |
| Relative offer size | -0.5923 (0.9077) | -0.5426 (0.8999) | -1.0892 (1.3737) | 11.5834 (10.8930) | 11.6343 (10.8824) | -1.7069 (4.1868) |
| Ln(Market capitalization) | -0.6223*** (0.1180) | -0.6002*** (0.1168) | -0.5272*** (0.1620) | 0.9595 (0.9406) | 1.0057 (0.9761) | -0.5299 (0.4378) |
| Market-to-book | 0.0171 (0.0280) | 0.0193 (0.0273) | 0.0598* (0.0359) | 0.111 (0.1243) | 0.121 (0.1303) | 0.2996* (0.1779) |
| Residual volatility | 7.3081 (5.7326) | 7.5288 (5.7399) | -3.2141 (6.1879) | 31.5615* (17.9418) | 32.6183* (18.3164) | 9.8307 (19.5245) |
| Turnover | -0.0009 (0.0010) | -0.0009 (0.0010) | -0.001 (0.0012) | -0.0001 (0.0020) | 0 (0.0020) | 0.0008 (0.0013) |

Table 9 (continued)

| | | Panel A: Including board size and board independence | | | | | |
|-------------------------------|--|--|----------------------|------------------------|--------------------------|------------------------|------------------------|
| Explanatory variables | | Models (1)–(3): Gross spread | | | Models (4)–(6): Discount | | |
| | | (1) | (2) | (3) | (4) | (5) | (6) |
| Underwriter previous relation | | 0.0412 (0.0982) | 0.0623 (0.0972) | -0.1142 (0.1196) | 0.199 (0.3488) | 0.2392 (0.3699) | 0.08 (0.3601) |
| Ln(Proceeds) | | 0.0844 (0.1423) | 0.0741 (0.1421) | 0.154 (0.2113) | -1.2244 (0.9308) | -1.2293 (0.9353) | -0.1452 (0.3420) |
| Runup | | -0.1514 (0.1634) | -0.1361 (0.1590) | -0.0566 (0.2195) | -0.0446 (0.5020) | -0.0072 (0.4953) | 0.1147 (0.9211) |
| Market runup | | 0.8206 (0.6595) | 0.7276 (0.6150) | 0.4849 (1.1147) | -1.6465 (4.2587) | -1.8478 (4.3955) | 0.9472 (4.1270) |
| Ln(Offer price) | | -0.0753 (0.0836) | -0.0784 (0.0804) | -0.3065*** (0.1027) | -0.8762** (0.3881) | -0.8942** (0.3690) | -1.3119*** (0.3570) |
| Ln(#Lead Mgrs) | | 0.6608*** (0.1224) | 0.653*** (0.1242) | 0.7699*** (0.2234) | 0.05 (0.3672) | 0.0362 (0.3824) | 0.3771 (0.4629) |
| Nasdaq | | -0.0433 (0.0908) | -0.0813 (0.0818) | 0.0135 (0.0917) | 0.28 (0.7069) | 0.1847 (0.6363) | -0.2039 (0.3473) |
| Ln(1 + Analyst following) | | -0.2481** (0.1136) | -0.256** (0.1153) | -0.3094* (0.1611) | -0.3893 (0.2580) | -0.3947 (0.2541) | -0.0943 (0.3907) |
| Institutional holdings | | 0.2018 (0.2746) | 0.1957 (0.2734) | 0.021 (0.3036) | -2.358*** (0.9550) | -2.4653*** (0.9392) | -2.4544* (1.2965) |
| Bond rating | | -0.0102 (0.0244) | -0.01 (0.0243) | 0.0159 (0.0408) | 0.0947 (0.0741) | 0.0967 (0.0737) | 0.0953 (0.1039) |
| Not rated | | 0.0808 (0.1939) | 0.1093 (0.1945) | 0.3941 (0.3632) | 0.8478 (0.8373) | 0.9326 (0.8354) | 0.4328 (1.0279) |
| AR5neg | | - | - | - | -2.2343 (5.2010) | -2.172 (5.2210) | -3.426 (4.6196) |

Table 9 (continued)

| Explanatory variables | Panel A: Including board size and board independence | | | | | |
|---------------------------------|--|----------------------|-------------------------|--------------------------|----------------------|----------------------|
| | Models (1)–(3): Gross spread | | | Models (4)–(6): Discount | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| AR5pos | – | – | – | – 2.1061 (2.5141) | – 2.2081 (2.5077) | – 1.1937 (4.1766) |
| Integer | – | – | – | 0.7845* (0.4445) | 0.7838* (0.4363) | 1.0058** (0.4137) |
| Year and industry fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| R-square | 0.65 | 0.65 | 0.71 | 0.33 | 0.33 | 0.45 |
| N | 475 | 475 | 264 | 468 | 468 | 264 |
| Explanatory variables | Panel B: Including board size and board insiders | | | | | |
| | Gross spread | | | Discount | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Max(ATI) | 0.0315 (0.1101) | – | – | – 0.1456 (0.2615) | – | – |
| Max(E-Index) | – | 0.3354** (0.1598) | – | – | 0.7351 (1.0204) | – |
| Democracy | – | – | 0.0375 (0.1598) | – | – | – 0.3259 (0.5758) |
| Dictatorship | – | – | 0.6254*** (0.2161) | – | – | – 0.1522 (0.7035) |
| Board size | – 0.0333 (0.0339) | – 0.0332 (0.0317) | – 0.0754*** (0.0260) | 0.0344 (0.0922) | 0.0187 (0.0843) | – 0.0292 (0.1099) |
| Board size ² | – 0.001 (0.0068) | – 0.0003 (0.0064) | 0.0036 (0.0063) | – 0.0099 (0.0237) | – 0.0064 (0.0223) | 0.0277 (0.0308) |

Table 9 (continued)

| | | Panel B: Including board size and board insiders | | | | | |
|-------------------------------|--|--|-------------------------|-------------------------|------------------------|------------------------|-------------------------|
| Explanatory variables | | Gross spread | | | Discount | | |
| | | (1) | (2) | (3) | (4) | (5) | (6) |
| Insiders | | - 0.4815 (0.3299) | - 0.4112 (0.3637) | - 0.2941 (0.4317) | - 2.8766* (1.5154) | - 2.7786* (1.5028) | - 1.3999 (2.3420) |
| Overnight offer | | - 0.6204*** (0.1244) | - 0.6289*** (0.1225) | - 0.8099*** (0.1623) | 0.9074* (0.4964) | 0.8671* (0.4710) | 0.2806 (0.2884) |
| Relative offer size | | - 0.6492 (0.8930) | - 0.5892 (0.8935) | - 1.2662 (1.3000) | 10.7706 (10.6892) | 10.8105 (10.6935) | - 2.1926 (4.3914) |
| Ln(Market capitalization) | | - 0.6162*** (0.1173) | - 0.5941*** (0.1160) | - 0.5426*** (0.1566) | 0.8852 (0.9331) | 0.9226 (0.9668) | - 0.5749 (0.4715) |
| Market-to-book | | 0.0208 (0.0289) | 0.0227 (0.0280) | 0.0691** (0.0327) | 0.1358 (0.1198) | 0.1452 (0.1267) | 0.3093* (0.1722) |
| Residual volatility | | 7.6563 (5.5925) | 7.8135 (5.6160) | - 3.0213 (6.3186) | 37.1433** (18.6912) | 37.9416** (18.8132) | 14.6056 (19.9027) |
| Turnover | | - 0.0009 (0.0010) | - 0.0008 (0.0010) | - 0.0008 (0.0011) | - 0.0003 (0.0018) | - 0.0001 (0.0017) | 0.0013 (0.0010) |
| Underwriter previous relation | | 0.0449 (0.0981) | 0.0647 (0.0970) | - 0.1061 (0.1182) | 0.1986 (0.3583) | 0.2295 (0.3763) | 0.0653 (0.3849) |
| Ln(Proceeds) | | 0.0678 (0.1453) | 0.0581 (0.1444) | 0.1326 (0.2064) | - 1.233 (0.8993) | - 1.2373 (0.9045) | - 0.1927 (0.3410) |
| Runup | | - 0.1776 (0.1622) | - 0.1604 (0.1575) | - 0.1035 (0.2175) | - 0.1432 (0.4824) | - 0.1122 (0.4802) | - 0.045 (0.9139) |
| Market runup | | 0.8921 (0.6910) | 0.8018 (0.6481) | 0.5297 (1.1346) | - 1.8246 (4.3048) | - 1.9821 (4.4343) | 1.2436 (4.0438) |
| Ln(Offer price) | | - 0.0783 (0.0793) | - 0.0817 (0.0767) | - 0.3127*** (0.0987) | - 0.8495** (0.3781) | - 0.866** (0.3611) | - 1.2871*** (0.3363) |

Table 9 (continued)

| Explanatory variables | Panel B: Including board size and board insiders | | | | | |
|---------------------------------|--|------------------------|-----------------------|-------------------------|------------------------|-----------------------|
| | Gross spread | | | Discount | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Ln(#Lead Mgrs) | 0.6607*** (0.1218) | 0.6538*** (0.1237) | 0.7809*** (0.2225) | 0.0002 (0.3397) | - 0.0088 (0.3525) | 0.4222 (0.4799) |
| Nasdaq | - 0.0697 (0.0925) | - 0.1057 (0.0847) | - 0.02 (0.0934) | 0.1718 (0.7027) | 0.0898 (0.6274) | - 0.2692 (0.3762) |
| Ln(1 + Analyst following) | - 0.2302*** (0.1163) | - 0.2388** (0.1171) | - 0.2836* (0.1587) | - 0.3576 (0.2710) | - 0.3587 (0.2655) | - 0.0525 (0.3762) |
| Institutional holdings | 0.222 (0.2670) | 0.2184 (0.2663) | 0.1022 (0.2876) | - 2.2268*** (0.8796) | - 2.308*** (0.8712) | - 2.1391* (1.2553) |
| Bond rating | - 0.0119 (0.0247) | - 0.0117 (0.0245) | 0.0152 (0.0392) | 0.1114 (0.0777) | 0.1131 (0.0767) | 0.1069 (0.1121) |
| Not rated | 0.0736 (0.1984) | 0.102 (0.1992) | 0.3893 (0.3499) | 0.9063 (0.8778) | 0.9771 (0.8734) | 0.5148 (1.0688) |
| AR5neg | - | - | - | - 2.5875 (5.3584) | - 2.5067 (5.3649) | - 3.4038 (4.5303) |
| AR5pos | - | - | - | - 2.5891 (2.1886) | - 2.6754 (2.1698) | - 1.0576 (3.9978) |
| Integer | - | - | - | 0.724 (0.4635) | 0.7222 (0.4563) | 0.9486** (0.4660) |
| Year and industry fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| R-square | 0.65 | 0.65 | 0.71 | 0.33 | 0.33 | 0.44 |
| N | 474 | 474 | 265 | 467 | 467 | 265 |

This table provides coefficient estimates from regressing gross underwriter spreads and offer price discounts on antitakeover indexes and other firm and offer characteristics. Panel A includes the percentage of independent board members; Panel B includes the percentage of insiders on the board. Both panels include the total number of board members minus 9; and a variable defined as the square of (# board members - 9). Estimations (1) through (3) model the gross underwriter spread. Estimations (4) through (6) model the offer price discount. All variables are defined in the [Appendix](#). Standard errors clustered by industry are in parentheses

*, **, and ***Significance at the 10, 5, and 1% level, respectively

board independence is connected to greater offer price discounts. Overall, the inclusion of internal governance measures does not change our previous conclusion that extreme weak shareholder rights affect the spreads but not the discounts set by investment banks in seasoned equity offers.

4 Conclusions

Prior research establishes that shareholder rights affect the direct costs of debt financing. Motivated by the previously documented link between corporate governance and information asymmetry, we examine whether shareholder rights are associated with the direct costs of issuing equity, which include the gross spread and offer price discount set by the investment bank. When underwriting an equity offer by a firm associated with weak shareholder rights, an investment bank might increase its potential exposure to legal liability and reputational damage, especially in the presence of asymmetric information. Underwriters are charged with certifying the validity of the issue price, and weak governance could increase the potential for share misvaluation. The investment bank could thus compensate for these increased exposures by charging higher spreads and/or setting offer prices at deeper discounts for those cases in which the issuer has weak shareholder rights.

However, a recent study by Kim and Purnanandam (2014) establishes a link between weak corporate governance and negative SEO announcement reactions. If the full negative effect of weak corporate governance is priced at the SEO announcement, then the strength of shareholder rights might be unrelated to the underwriter's risk of placing overvalued shares, all else equal. Thus, it could very well be the case that gross spreads and offer price discounts are independent of shareholder rights.

We find that the strength of shareholder rights, *on average*, is not related to gross spreads or offer price discounts. Importantly, however, we find that underwriters charge higher gross spreads in SEOs in which the issuing firm is associated with extremely weak shareholder rights. This result holds when we use deviations from expected levels of corporate governance, alternative measures of shareholder rights (E-Index or G-Index), and control for board characteristics. Our findings are consistent with the hypothesis that underwriters believe that governance-related risks are accurately assessed by investors prior to the issuance of new equity, on average, but that higher gross spreads are warranted for floating SEOs for firms with exceptionally poor governance or a level of governance that is weaker than expected.

Appendix: Variable definitions

This appendix provides variable definitions.

Measures of direct issuance costs

Gross underwriter spread Consists of the management fee, underwriter fee, and selling concession and is expressed as a percentage of total offer proceeds.

Offer price discount The percentage return from the previous day's closing transaction price to the offer price (close-to-offer return), multiplied by negative one.

Measures of external governance

ATI The alternative governance index of Cremers and Nair (2005), which focuses on three key provisions (staggered boards, poison pills, and restrictions on shareholder voting). The measure takes a value from 0 to 3 based on the number of provisions a firm has in place.

E-index The entrenchment index of Bebchuk et al. (2009), which focuses on six provisions within the G-index. The measure takes a value from 0 to 6.

G-index Formed following Gompers et al. (2003) by adding one point for each anti-takeover provision (of the 24 provisions in IRRC) that a firm has in place. Thus this measure can take values from 0 to 24.

Board variables

Board independence The number of independent board members as a percentage of total board members.

Board size Number of board members.

Insiders The number of board members that are employees as a percentage of total board members.

Other control variables

Analyst following Average number of analysts providing 1-year ahead earnings-per-share estimates (from the IBES summary files) in the 12 months prior to the issue.

AR5neg Market-adjusted return in the 5 days immediately prior to the offer if negative, and zero otherwise.

AR5pos Market-adjusted return in the 5 days immediately prior to the offer if positive, and zero otherwise.

Bond rating The Standard and Poor's long-term issuer credit rating from Compustat coded numerically from AAA (19) to CCC (1). If the firm does not have a bond rating, it is set to zero.

Institutional holdings Shares held by institution as a percentage of total shares outstanding in the quarter prior to the issue.

Integer Binary variable equaling one for offers priced at whole dollars and zero otherwise.

Leverage Long-term debt scaled by book assets in the fiscal year prior to issue.

Market capitalization The number of shares outstanding times the price at the end of the most recent month prior to the issue, reported in thousands of dollars.

Market-to-book Market value of equity, scaled by the book value of assets.

Market runup Buy-and-hold return on the value-weighted market index in the 60 days prior to the offer.

Nasdaq Binary variable that equals 1 if the firm's principal exchange is the Nasdaq, and otherwise equals 0.

Number of lead managers Number of lead managers in the SEO reported on SDC.

Offer price Price at which the issue is sold.

Overnight Indicator that the offer is conducted in an accelerated basis within two trading days of the announcements. Hand-collected prior to 2011 and taken from SDC starting 2011.

Proceeds The net proceeds from the offering, measured in millions.

Relative offer size The number of shares issued divided by the number of shares outstanding prior to the issue.

Residual volatility Residual standard deviation of the error term in the market model estimated over the 250 trading days prior to the issue.

Runup Market adjusted buy-and-hold abnormal stock return in the 60 days prior to the offer.

Turnover Average trading volume over the 250 trading days prior to the filing of the issue divided by the number of shares outstanding.

Underwriter previous relation Binary variable indicating that the firm had a prior equity underwriting relation with one of the lead underwriters in the preceding 5 years.

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