JOURNAL OF FINANCIAL AND QUANTITATIVE ANALYSIS Vol. 48, No. 2, Apr. 2013, pp. 637–668
COPYRIGHT 2013, MICHAEL G. FOSTER SCHOOL OF BUSINESS, UNIVERSITY OF WASHINGTON, SEATTLE, WA 98195
doi:10.1017/S0022109013000124

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

State Antitakeover Laws and Voluntary Disclosure

Yijiang Zhao, Arthur Allen, and Iftekhar Hasan*

Abstract

We test the relationship between takeover protection and voluntary disclosure in a setting of antitakeover laws in a firm's state of incorporation. After correcting for the endogeneity of firms' incorporation choices, we find that firms incorporated in states with more antitakeover laws have higher levels of voluntary disclosure and stock market liquidity. Further tests do not support shareholder demands being the driving force for this association. Our findings are consistent with takeover protection and poor disclosure serving as substitute mechanisms for deterring takeovers. Therefore, as antitakeover statutes mitigate takeover threats, they enhance managers' incentives to disclose more in order to realize capital market benefits.

I. Introduction

Managers have incentives to withhold disclosures in order to mitigate shareholder monitoring (Shleifer and Vishny (1989)). Corporate scandals such as those of Enron and WorldCom suggest that withholding value-relevant information can mislead investors, sometimes resulting in enormous welfare losses.[1] In the United States, post-Enron reforms generally focus on strengthening corporate governance

*Zhao, yzhao@american.edu, Kogod School of Business, American University, 4400 Massachusetts Ave NW, Washington, DC 20016; Allen, aallen1@unl.edu, School of Accountancy, University of Nebraska-Lincoln, 307 College of Business Administration, Lincoln, NE 68588; and Hasan, ihasan@fordham.edu, Fordham University, 1790 Broadway FL 11, New York, NY 10019 and Bank of Finland. We thank Ajay Adhikari, Shijun Cheng, Parthiban David, Augustine Duru, Adam Kolasinski (the referee), Paul Malatesta (editor), Robert Thompson, Yinqi Zhang, and seminar participants at American University, Rensselaer Polytechnic Institute, and the University of Nebraska-Lincoln for comments that were helpful in developing this work. We gratefully acknowledge the financial support provided by the Kogod Research Grant at American University. We are also grateful to Christine Botosan, Brian Bushee, Amy Hutton, and Russell Lundholm for providing the machine-readable Association for Investment Management and Research data, to Lucian Bebchuk for making his state antitakeover index data publicly available, and to Andrew Metrick for providing the Governance Index data.

[1]Firms voluntarily disclose a variety of value-relevant information such as earnings forecasts, product market strategies, investment plans, and potential risks. As discussed by Healy and Palepu (2003), Enron's management provided only minimal disclosure regarding its relationship with three previously unconsolidated special purpose entities, which left investors in the dark about the nature of the firm's transactions with these entities.

(e.g., board monitoring) and requiring firms to provide more transparent financial disclosure. Although prior studies (e.g., Karpoff and Malatesta (1989), Gompers, Ishii, and Metrick (2003)) suggest that the takeover market disciplines management and mitigates agency problems, it remains unclear how this mechanism affects firms' voluntary disclosure practices. Our purpose is to fill the void by examining the relation between takeover protection and voluntary disclosure activity.

Takeover protection may have two opposite effects on a firm's voluntary disclosure activity. One, the conventional entrenchment view, suggests that entrenched managers would be likely to extract shareholder wealth (Fama (1980)). Thus, according to this entrenchment view, as takeover protection entrenches management, it increases managers' incentives to withhold disclosures in order to disguise their expropriation behavior. Two alternative views argue for the opposite effect. Because less disclosure eases takeover pressure by increasing potential bidder uncertainty (e.g., Edlin and Stiglitz (1995)), the takeover-pressure view suggests that less-protected managers would be more likely to withhold disclosures in order to mitigate takeover threats. The other view, the shareholder-demand view, argues that shareholders would demand more informative disclosure as a compensatory monitoring mechanism when there is a less effective takeover market. Therefore, the entrenchment view implies a negative association between takeover protection and voluntary disclosure, whereas both the takeover-pressure view and the shareholder-demand view predict a positive association. Consistent with the takeover-pressure and shareholder-demand views, but not the entrenchment view, we find that greater state law protection from takeovers leads to more voluntary disclosure. We find further evidence suggesting that the takeover-pressure view explains this result better than the shareholder-demand view.

We examine this issue from the perspective of the state of incorporation, because antitakeover statutes vary between states and U.S. firms are subject to corporate laws in their state of incorporation. Using a self-selection regression model, we control for the endogeneity in firms' incorporation decision and the resulting state-level takeover protection. As in prior studies (e.g., Bebchuk and Cohen (2003), Wald and Long (2007)), we measure state-level takeover protection by the number of antitakeover statutes adopted in the state. To measure the level of voluntary disclosure, we follow Bens and Monahan (2004) and employ the disclosure rankings developed by the Association for Investment Management and Research (AIMR) as our proxy for voluntary disclosure.

We find evidence that firms incorporated in states with more antitakeover statutes generally have higher levels of voluntary disclosure than firms subject to fewer antitakeover statutes after accounting for self-selection bias. The results are robust to a battery of sensitivity tests, including those that enhance the validity of instrumental variables, alternative measures of voluntary disclosure and antitakeover legislation, and additional controls for factors that may cloud our inferences. We also find that firms incorporated in states with more antitakeover statutes have higher levels of stock market liquidity, confirming that capital market benefits accrue to these firms. In summary, we find a positive association between antitakeover laws and disclosure, which is inconsistent with

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

the entrenchment view but is consistent with the takeover-pressure view and the shareholder-demand view.

If shareholder demand drives the positive relation between antitakeover statutes and disclosure, then due to shareholders' concerns about proprietary costs, this relation should be weakened when the proprietary costs of disclosure are high. In contrast, the takeover-pressure view, which argues for managerial self-interest as the driving force, predicts no difference in this disclosure effect across firms with differential levels of proprietary costs. We find that the interaction terms of antitakeover statutes with proxies for proprietary costs are not statistically significant. Thus, our results are more consistent with the takeover-pressure view that managerial self-interest drives increased disclosure in less-robust takeover markets.

Finally, we find that the effect of antitakeover statutes on voluntary disclosure is greater for firms with more firm-level takeover defenses. Our results support the conjecture that managers of firms with more takeover defenses possess greater discretion over disclosure; thus, when further protected by state antitakeover statutes, they are willing to increase disclosure to realize greater capital market benefits.

This study contributes to two streams of literature. First, it adds to the finance literature on how control considerations affect corporate decisions. Prior studies find that managers mitigate takeover threats by either holding higher levels of ownership (Cheng, Nagar, and Rajan (2005)), maintaining higher levels of financial leverage (Garvey and Hanka (1999)),[2] or encouraging employee ownership through defined contribution plans (Rauh (2006)). Complementing these studies, our paper provides evidence that managers also reduce takeover pressure by reducing transparency in voluntary disclosure.[3]

Second, this study contributes to the literature on the association between corporate governance and voluntary disclosure practices. Recent studies (e.g., Ajinkya, Bhojraj, and Sengupta (2005), Karamanou and Vafeas (2005)) emphasize the role of disclosure in alleviating the adverse selection problem and generally find that stronger internal governance is associated with more transparent disclosure. We focus on the disciplinary role of disclosure in mitigating moral hazard-related agency problems and find that stronger external governance is associated with less transparent disclosure. In addition, our paper is the first to provide evidence that managers withhold information in the absence of antitakeover statutes because of self-interest, not because of stockholders' pressure to minimize the proprietary costs of disclosure.

Our paper has important policy implications. Post-Enron reforms generally focus on strengthening corporate governance and improving financial disclosure.

[2]Garvey and Hanka (1999) find that after the enactment of state antitakeover laws, firms incorporated in enacting states significantly reduce their financial leverage, consistent with financial leverage serving as a form of takeover defense. However, after accounting for the endogenously determined choice of where to incorporate, Wald and Long (2007) find that antitakeover laws are positively associated with debt as a fraction of market value, possibly due to a lower market value for these firms.

[3]A concurrent study by Armstrong, Balakrishnan, and Cohen (2012) treats the passage of antitakeover laws as exogenous and finds that the laws are associated with less private information gathering and more informative financial statements.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

Our evidence, however, suggests that stronger external governance may be achieved at the cost of financial transparency. Policy makers need to be aware of this cost before they reduce firms' takeover protection.

The remainder of this paper proceeds as follows: Section II reviews the literature and develops the hypotheses to be tested. Section III describes our sample selection procedure, main variable measurement, and descriptive statistics. Section IV introduces our empirical models, presents the main results, and discusses additional analyses. Section V summarizes this study.

II. Literature Review and Hypothesis Development

This section develops three competing views on the effect of takeover protection on firms' voluntary disclosure activity: entrenchment, takeover pressure, and shareholder demand. The entrenchment view argues that takeover protection is likely to decrease disclosure. As takeover protection dampens the effectiveness of external monitoring, entrenched managers are likely to engage in expropriation at the expense of shareholder interests (e.g., Fama and Jensen (1983), Scharfstein (1988)). Recent studies (e.g., Bens and Monahan (2004), Hope and Thomas (2008), Huang and Zhang (2012)) suggest that transparent disclosure allows shareholders to monitor managers effectively. Conversely, poor disclosure increases managers' opportunities to extract shareholder wealth and reduces the likelihood of reprisals. Thus, as takeover protection entrenches managers, they are motivated to disclose less information.

In contrast to the entrenchment view, both the takeover-pressure view and the shareholder-demand view posit that takeover protection is likely to increase disclosure. According to the takeover-pressure view, poor disclosure eases takeover pressure by making it difficult for bidders to estimate the gains from acquiring target firms and replacing incumbent managers (Shleifer and Vishny (1989), Edlin and Stigliz (1995)). Similarly, informative disclosure more fully reveals unresolved agency problems (e.g., inefficient internal capital transfer) and thus heightens external monitoring by takeover markets. Therefore, for job security concerns, less-protected managers are likely to withhold information. As takeover protection affords greater job security for managers, they are less likely to resort to withholding information to defend against takeovers.

Unlike the other views, the shareholder-demand view argues for an active shareholder role in determining firms' disclosure activity. Consistent with this argument, studies (Healy, Hutton, and Palepu (1999), Jung (2013)) suggest that shareholders' demands create pressure for management to improve the firm's financial transparency. In the context of our study, as takeover protection weakens external monitoring by takeover markets, it exacerbates agency problems such as excessive executive compensation (Cheng and Indjejikian (2009)) and larger amounts of inefficient, empire-building acquisitions (Gompers et al. (2003), Masulis, Wang, and Xie (2007)). Corporate disclosures and governance systems are likely to be substitutes in addressing such problems (Bushman, Chen, Engel, and Smith (2004)). Therefore, shareholders are likely to demand more disclosure to maintain the monitoring of management when governance systems are weakened by takeover protection.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

Two recent working papers provide limited evidence regarding the association between takeover protection and disclosure activity. Berger and Hann (2002) find that subsequent to the increased segment disclosures required under Statement of Financial Accounting Standards (SFAS) 131, firms adopted more antitakeover provisions. Our study differs from Berger and Hann (2002) in that they examine the effect of disclosure on firm-level takeover defenses, whereas we study the effect of state antitakeover statutes on disclosure. Using quarterly management earnings forecasts as a proxy for voluntary disclosure and the Governance Index of Gompers et al. (2003) as a proxy for takeover protection, Fu and Liu (2007) find a positive relation between voluntary disclosure and takeover defenses. However, Fu and Liu's methodology suffers from three serious drawbacks. First, as discussed in Section III, management forecasts constitute an extremely small portion of a firm's disclosure activity, which limits the generalizability of Fu and Liu's findings. Second, they do not control for the endogeneity of takeover protection. Third, their findings are subject to alternative interpretations; thus, the driving force underlying the association between voluntary disclosure and takeover protection remains unclear.

During the mid- to late-1980s, at the behest of a few local firms, many states enacted statutes on control share acquisition (CSA), fair price (FP), business combination (BC) (i.e., no-freeze-out statutes), poison pill endorsement (PPE), and constituencies (see Karpoff and Malatesta (1989) and Bebchuk and Cohen (2003) for details of these statutes). The existing literature suggests that these statutes provide strong inhibitions for takeovers. For example, Comment and Schwert (1995) find that takeover premiums increased substantially after antitakeover statutes were enacted, suggesting that these laws raise the cost of acquisitions and thus discourage potential bidders. Schwert (2000) further reports that hostile takeover activity declined after these enactments. In addition, numerous studies (e.g., Bertrand and Mullainathan (2003), Cheng et al. (2005), and Rauh (2006)) find evidence that antitakeover statutes enhance managerial control and weaken external monitoring from the takeover market.

In summary, the entrenchment view suggests that antitakeover statutes motivate managers to withhold disclosure, whereas both the takeover-pressure view and the shareholder-demand view suggest that voluntary disclosure increases with antitakeover statutes. Given these conflicting predictions, we test the following nondirectional hypothesis, stated in its null form:

Hypothesis 1. The level of disclosure is unrelated to state antitakeover statutes.

Later, we discuss an approach to distinguish between the takeover-pressure and shareholder-demand views. Our approach is conditional on our finding a positive association between state antitakeover statutes and voluntary disclosure. These two views diverge regarding who is the driving force behind this association: shareholders or management. Prior theoretical studies (Verrecchia (1983), Wagenhofer (1990)) suggest that disclosure is likely to involve proprietary costs when revealing strategically important information to product market competitors. Assuming no conflicts of interest between managers and shareholders, these studies conclude that firms/shareholders have incentives to withhold information that will jeopardize the firms' competitive position (Healy and Palepu (2001)).

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

Thus, if it is shareholders who are driving increased disclosure in the presence of antitakeover statutes, this association should be weaker when a firm's proprietary disclosure costs are higher.[4] However, if it is managerial self-interest that drives increased disclosure in the presence of antitakeover statutes, the strength of this relation should not be related to a firm's proprietary costs, because managers are more concerned about the effect of disclosure on private benefits of control (Berger and Hann (2007)).[5] Therefore, our 2nd hypothesis to be tested is as follows:

Hypothesis 2. The level of disclosure is unrelated to the interaction between state antitakeover statutes and proprietary costs.

III. Sample Selection, Main Variable Measurement, and Descriptive Statistics

A. Sample Selection

We select the sample period 1987–1995 for the empirical analyses. Following Wald and Long (2007), we choose 1987 as the 1st year because the Supreme Court ruled 2nd-generation antitakeover laws to be constitutional in *CTS v. Dynamics Corp* in 1987. The final year, 1995, is the last in our machine-readable data set of AIMR ratings provided by Bushee and Noe (2000). Our initial sample contains all firm-years with complete AIMR ratings of the total disclosures in Bushee and Noe's data set. We then merge this data set with Compustat for various financial data and exclude all firm-years for which the required data are missing. We also retrieve information on the state of incorporation and firm-level provisions from the RiskMetrics Corporate Governance database.[6] In addition, we utilize Bebchuk and Cohen's (2003) state antitakeover index data set on antitakeover statutes. We further eliminate the following observations: i) financial services and utility firms (Standard Industrial Classification (SIC) codes 6000–6500 and 4400–4999), since these firms are subject to heavy federal regulations, and ii) firm-years in which firms reincorporated, because this change leads these observations to be incomparable with others. The final data set for the multivariate analyses consists of 368 firms with a total of 1,977 firm-years. Table 1 summarizes the sample selection procedure.

[4]Under this view, increased disclosure prompted by the antitakeover statutes is likely to reduce shareholder welfare due to proprietary costs of increased disclosure.

[5]Although prior studies (e.g., Harris (1998), Botosan and Stanford (2005)) report evidence consistent with managers withholding disclosures to reduce proprietary costs, Berger and Hann (2007) argue that such evidence is also consistent with an agency cost view that managers reduce disclosures to weaken shareholder monitoring. In an attempt to distinguish between these two views, Berger and Hann (2007) find evidence consistent with the agency-cost view but do not find evidence that managers withhold information to reduce proprietary costs.

[6]Data for firm-level provisions are only available for 1990, 1993, and 1995 during our sample period. As Zhou (2001) suggests, firm-level governance-related variables are relatively time-invariant. Following Bebchuk and Cohen (2005), we use the most recent lagged data to fill in missing years between 1990 and 1995. We also use the data in 1990 to fill in missing years between 1987 and 1990.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

TABLE 1

Sample Selection Procedures

Table 1 presents the selection process for the entire sample of 1,977 observations.

Criteria		Firm-Years
Bushee and Noe's (2000) firm-years with nonmissing AIMR rankings in total disclosures		4,638
Less:	Firm-years with missing financial data	−1,040
	Financial services and utility firms	−1,235
	Firm-years without RiskMetrics' takeover defenses and incorporation data	−215
	Reincorporation firm-years	−18
	Firm-years before 1987	−153
Final sample		1,977

B. State Antitakeover Statutes

To proxy for the strength of state-level legal protection against hostile takeovers, we follow recent studies (Qi and Wald (2008), Mansi, Maxwell, and Wald (2010)) and create an index, *StateLawIndex*, equivalent to Bebchuk and Cohen's (2003) antitakeover index plus 1, if the recapture law exists in that state and year, and 0 otherwise.[7] Firms' available takeover deterrents increase with the number of antitakeover statutes governing the firm. In addition, a state amassing antitakeover statutes signals that the state is likely to provide further takeover protection (Bebchuk and Cohen (2003)). To the extent that the strength of this signal increases with the number of statutes, it is also credible to argue that state-level takeover protection increases with the number of statutes. Since firms incorporated in certain states, such as Pennsylvania, are able to opt out of some of the antitakeover laws, we follow Wald and Long (2007) and use the RiskMetrics database to adjust each firm's index value by the firm's opt-out decision. Bebchuk and Cohen's (2003) antitakeover index and its variants have been widely used as proxies for the impact of the state-level legal protection on takeover vulnerability in recent studies (e.g., Wald and Long (2007), Qi and Wald (2008), Francis, Hasan, John, and Waisman (2010), and Mansi et al. (2010)).

C. Voluntary Disclosure

Our proxy for voluntary disclosure is based on the annual ratings of voluntary disclosure practices published in the Corporate Information Committee Report of the AIMR. For each industry, the AIMR forms a subcommittee consisting of top financial analysts tracking that industry, to assess the quality of disclosure practices of selected firms and to assign ratings on an annual basis.[8]

[7] Bebchuk and Cohen's (2003) antitakeover index, which is based on the work of Gartman (2000), increases by 1 if the state has enacted a CSA statute, an FP statute, a BC statute, a PPE statute, or a Constituencies statute. The recapture law is an antitakeover statute adopted by Pennsylvania and Ohio that discourages potential acquirers by enabling the "recapture" of all short-term profits made by a hostile acquirer. We also use Bebchuk and Cohen's (2003) antitakeover index and recapture laws separately and obtain essentially unchanged results (not reported).

[8] One potential problem with the AIMR ratings is that they are likely to capture analysts' subjective perceptions of voluntary disclosure rather than objectively measure disclosure. However, the AIMR

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

Subcommittee members evaluate disclosure activity along three dimensions: i) annual report/10-K disclosures, ii) other publications (e.g., interim report/10-Q) disclosures, and iii) investor relations activities. The three component ratings are combined to generate summary ratings and industry rankings for firms' overall disclosure practices.

Numerous studies (e.g., Sengupta (1998), Botosan and Plumlee (2002), Bens and Monahan (2004), Yu (2005), Khurana, Pereira, and Martin (2006), and Huang and Zhang (2012)) construct disclosure proxies based on AIMR ratings and find evidence generally consistent with disclosure theories, indicating that the AIMR ratings are valid for measuring the transparency of disclosure. In addition, relative to management forecasts-based measures used by Fu and Liu (2007), AIMR ratings-based measures have two noteworthy merits. First, the AIMR ratings represent a much more comprehensive measure of disclosure activity than management earnings forecasts (Lundholm and Myers (2002)), which constitute a very small portion of a firm's disclosure. Second, as discussed in the section on hypothesis development, the association between takeover protection and disclosure activity is predicated on the monitoring role of disclosure. Information conveyed in (quarterly) management forecasts can be easily obtained or verified by outside investors through actual earnings realizations in subsequent periods (Healy and Palepu (2001)). In contrast, other types of voluntary disclosure, such as investment plans and disaggregated segment information prior to the SFAS 131, are not easily available to outside investors if management withholds such information. Thus, to mitigate shareholder monitoring, managers are more likely to disclose less in financial reports than to reduce the frequency and/or accuracy of earnings forecasts.

The raw AIMR ratings are likely to lack comparability across industries and/or across time because different subcommittees may apply period- or industry-specific disclosure scales (Healy et al. (1999), Bushee and Noe (2000)). To improve comparability, we follow prior research (e.g., Healy et al. (1999), Bushee and Noe (2000)) and convert the firm's AIMR industry ranking to a percentile within each industry-year:

$$Disc \quad = \quad (N_{it} - Rank_{it})/(N_{it} - 1),$$

where N_{it} is the number of firms ranked by analysts in firm i's industry in year t, and $Rank_{it}$ is firm i's disclosure ranking relative to its industry peers in year t as reported by the AIMR. The conversion methodology thus assigns 1 to firms rated highest in their industry and 0 to those rated lowest. In our empirical analyses later, we construct 4 measures of percentile ranks, *TotalDisc*, *AnnualDisc*, *OtherDisc*, and *RelationDisc*, based on the above formula to reflect total disclosure, annual disclosure, other disclosure, and investor relations, respectively. The measures of percentile ranks of the AIMR ratings have been used in disclosure

reports only the consensus of subcommittee members without disclosing individual analyst ratings, which reduces the incentive for individual analysts to strengthen their relations with management.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

studies that perform pooled time-series analyses (e.g., Lang and Lundholm (1993), (1996), Lundholm and Myers (2002), and Bens and Monahan (2004)).

D. Descriptive Statistics

Table 2 lists the number of state antitakeover statutes adopted by each state and the number of sample firms incorporated in each state. Approximately 56% of the sample firms are incorporated in Delaware, which is comparable with prior studies (e.g., Bertrand and Mullainathan (2003), Cheng et al. (2005), and Francis et al. (2010)). Among the 34 states in our sample, only 4 states did not pass an antitakeover statute during the sample period. States differ substantially in the number of their antitakeover statutes, allowing us to examine the effect of state-level takeover protection on disclosure.

TABLE 2

Number of Firms by State of Incorporation and Number of State Antitakeover Statutes

Table 2 reports the number of sample firms by state of incorporation and number of state antitakeover statutes (control share statute, fair price statute, business combination statute, poison pill endorsement statute, constituencies statute, and recapture statute).

State of Incorporation	No. of Statutes	No. of Firms	Percent
Alabama	0	1	0.27%
Alaska	0	1	0.27%
California	0	8	2.17%
Colorado	1	1	0.27%
Connecticut	2	4	1.09%
Delaware	1	206	55.98%
Florida	4	3	0.82%
Georgia	4	5	1.36%
Hawaii	2	1	0.27%
Idaho	5	1	0.27%
Illinois	4	4	1.09%
Indiana	5	6	1.63%
Iowa	2	1	0.27%
Kentucky	4	1	0.27%
Maine	1	2	0.54%
Maryland	3	12	3.26%
Massachusetts	4	5	1.36%
Michigan	3	3	0.82%
Minnesota	4	2	0.54%
Missouri	4	5	1.36%
Nevada	5	5	1.36%
New Jersey	4	14	3.80%
New York	4	25	6.79%
North Carolina	3	3	0.82%
Ohio	6	13	3.53%
Oklahoma	1	1	0.27%
Oregon	4	2	0.54%
Pennsylvania	6	13	3.53%
South Carolina	3	3	0.82%
Texas	0	1	0.27%
Utah	2	1	0.27%
Virginia	4	12	3.26%
Washington	2	2	0.54%
Wisconsin	5	1	0.27%
Total	—	368	100.00%

We control for a variety of firm, state, and industry characteristics and discuss their expected relations with firms' disclosure quality and incorporation decisions in Section IV. Table 3 provides detailed definitions of these variables. Panels A and B of Table 4 report their descriptive statistics for all firm-years, firm-years

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

TABLE 3

Variable Definitions

Table 3 provides detailed definitions of all variables. Compustat items are in parentheses.

Variable	Definition
TotalDisc	the percentile rank of the AIMR ratings of firm *i*'s total corporate disclosure in year *t*;
AnnualDisc	the percentile rank of the AIMR ratings of firm *i*'s annual report disclosure in year *t*;
OtherDisc	the percentile rank of the AIMR ratings of firm *i*'s other publications disclosure in year *t*;
RelationDisc	the percentile rank of the AIMR ratings of firm *i*'s investor relations activities in year *t*;
StateLawIndex	the antitakeover index in year *t* measured as the number of state antitakeover laws (i.e., control share statute, fair price statute, business combination statute, poison pill endorsement statute, constituencies statute, and recapture statute) in the state where the firm is incorporated;
Log(FirmSize)	the natural log of firm *i*'s total assets (#6) in year $t-1$, where total assets are restated into a constant dollar of 2004 using the gross domestic product (GDP) deflator published by the Bureau of Economic Analysis;
MktReturn	firm *i*'s market-adjusted return measured as its annual return less the market return in year *t*;
Std(Return)	the standard deviation of firm *i*'s market-adjusted returns computed for the 10 years preceding year *t*;
FinPerf	the ratio of firm *i*'s operating income (#13) in year *t* to total assets (#6) in year $t-1$;
CorrEarnRet	the correlation between firm *i*'s annual earnings (#18 deflated by beginning-of-the-year total assets) and market-adjusted annual stock returns computed for the 10 years preceding year *t*;
Financing	a dummy variable with a value of 1 if firm *i* did not have an acquisition that contributed to sales (i.e., #249 = 0 or missing) but its number of outstanding shares increased by at least 10%, or firm *i*'s long-term debts increased by at least 10% in year *t* (Ali, Chen, and Radhakrishnan (2007));
Leverage	the ratio of firm *i*'s total debts (#9 + #34) to total assets (#6) in year $t-1$;
MB	the ratio of the market value of the total firm to the book value of assets (#6) in year $t-1$, where the market value of the total firm is measured as the book value of assets plus the market value of common stock (#199 $\times$ #25) less the sum of the book value of common stock (#60) and balance sheet deferred taxes (#74) (Kaplan and Zingales (1997));
Log(Employees)	the natural log of the number of firm *i*'s employees (#29) in year $t-1$;
Employees/StatePopulation	the ratio of the number of firm *i*'s employees (#29) to the population of its home state in year $t-1$;
TAconstraint	a dummy variable with a value of 1 if there is a total asset constraint in the state where the firm is incorporated, and 0 otherwise;
FirmGovIndex	the number of firm-level antitakeover provisions in year *t*;
R&D%	the ratio of firm *i*'s research and development (R&D) expenses (#46) to its sales (#12) in year $t-1$;
AdvExp%	the ratio of firm *i*'s advertising expenses (#45) to its sales (#12) in year $t-1$;
PP&E%	the ratio of firm *i*'s net property, plant, and equipment (#8) to its sales (#12) in year $t-1$;
DepExp%	the ratio of firm *i*'s depreciation expenses (#14) to its sales (#12) in year $t-1$;
IndUnionization%	the percentage of employed wage and salary workers, ages 16 and over, who are union members in each 3-digit Census Industry Code (CIC) industry in year $t-1$;
SalesGrowth	the growth of sales (#12) measured as $(\text{sales}_{t-1} - \text{sales}_{t-2}) / \text{sales}_{t-2}$;
Herfindahl	the Herfindahl index of firm *i*, measured as the sum of squared market shares of all firms in the same 2-digit SIC industry, where a firm's market share is the firm's sales (#12) as a proportion of total sales in the industry;
IndusConcen	industry concentration ratio measured as the percentage of market share owned by the largest 4 firms in the same 2-digit industry, where a firm's market share is the firm's sales (#12) as a proportion of total sales in the industry;
Illiquidity	firm *i*'s annual average ratio of the daily absolute return to the dollar trading volume on that day during each year (Amihud (2002));
TradingVolume	the median of the log of firm *i*'s daily dollar trading volume during each year, where dollar trading volume is restated into a constant dollar of 2004 using the GDP deflator published by the Bureau of Economic Analysis;
Turnover	the median ratio of firm *i*'s daily trading volume to its shares outstanding during each year;
HomeState	a dummy variable with a value of 1 if the firm's home state (i.e., the state where the firm is headquartered) equals its state of incorporation, and 0 otherwise;

(continued on next page)

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

TABLE 3 (continued)

Variable Definitions

Variable	Definition
HighTech	a dummy variable with a value of 1 if the firm's SIC code is between 3500 and 3699, or 3800 and 3899, and 0 otherwise;
HomeStateLawIndex	the antitakeover index in the state where the firm is headquartered, measured as the number of state antitakeover laws (i.e., control share statute, fair price statute, business combination statute, poison pill endorsement statute, constituencies statute, and recapture statute);
HomeTAconstraint	a dummy variable with a value of 1 if there is a total asset constraint in the state where the firm is headquartered, and 0 otherwise;
$InvMills_1$	the inverse Mills ratio calculated from the 1st-stage probit regression for the subset with the dependent variable equal to 1;
$InvMills_0$	the inverse Mills ratio calculated from the 1st-stage probit regression for the subset with the dependent variable equal to 0;
StaggeredBoard	a dummy variable with a value of 1 if firm *i* has a staggered board in year *t*, and 0 otherwise;
CNIndex	the index compiled by Cremers and Nair (2005), based on three antitakeover provisions (staggered boards, blank check preferred stock, and restrictions on shareholders' calling special meetings or acting through written consent), where higher index levels correspond to more firm-level takeover protection;
CEOOwn%	the percentage of ownership by the CEO in year *t*;
BoardMeetings	the number of board meetings held during year *t*;
Duality	a dummy variable with a value of 1 if the CEO chairs the board in year *t*, and 0 otherwise;
AbnormalAccr	the absolute value of firm *i*'s abnormal accruals measured as deviations from the predicted values from the corresponding industry-year regression, $TA_{i,t}/Asset_{i,t-1} = K_1/Asset_{i,t-1} + K_2 \times (\Delta Rev_{i,t} - \Delta AR_{i,t})/Asset_{i,t-1} + K_3 \times PP\&E_{i,t}/Asset_{i,t-1} + \varepsilon_{i,t}$, where $TA_{i,t}$ is firm *i*'s total accruals in year *t*, $Asset_{i,t-1}$ is firm *i*'s total assets (#6) at the end of year $t-1$, $\Delta Rev_{i,t}$ is firm *i*'s change in revenues (#12) between year *t* and year $t-1$, $\Delta AR_{i,t}$ is firm *i*'s change in accounts receivable (#2) between year *t* and year $t-1$, and $PP\&E_{i,t}$ is firm *i*'s net book value of property, plant, and equipment (#8) at the end of year *t*.

TABLE 4

Descriptive Statistics

Panel A of Table 4 reports summary statistics for the full sample during the period 1987–1995. Panel B of Table 4 reports summary statistics for the subsamples of firms incorporated in-state and firms incorporated out-of-state. See Table 3 for variable definitions.

Panel A. Descriptive Statistics for Full Sample (N = 1,977)

Variable	Mean	Stdev	Min	Max	Q1	Median	Q3
TotalDisc	0.518	0.312	0	1	0.250	0.515	0.800
StateLawIndex	1.887	1.542	0	6	1	1	3
TAconstraint	0.424	0.494	0	1	0	0	1
Log(FirmSize)	8.169	1.311	4.965	11.579	7.275	8.186	9.076
FirmSize	8,688.671	19,547.484	63.422	314,886.560	1,444.254	3,591.323	8,746.907
FinPerf	0.183	0.086	−0.008	0.490	0.126	0.174	0.228
MktReturn	0.996	0.278	0.366	1.921	0.819	0.982	1.147
Leverage	0.244	0.130	0	0.631	0.153	0.239	0.325
Std(Return)	0.294	0.158	0.094	0.904	0.188	0.251	0.346
MB	1.643	0.818	0.797	5.115	1.105	1.360	1.908
R&D%	0.027	0.044	0	0.212	0	0.005	0.036
AdvExp%	0.022	0.039	0	0.208	0	0	0.030
PP&E%	0.418	0.201	0.066	0.836	0.264	0.381	0.575
DepExp%	0.055	0.024	0.013	0.141	0.039	0.051	0.066
CorrEarnRet	0.166	0.335	−0.679	0.793	−0.060	0.198	0.424
Financing	0.374	0.484	0	1	0	0	1
FirmGovIndex	8.424	2.811	1	15	6	9	10
TradingVolume	15.837	1.304	13.367	18.033	14.872	15.893	16.826
Turnover	0.002	0.001	0.001	0.008	0.001	0.002	0.003
Illiquidity	0.006	0.011	0	0.096	0.001	0.002	0.006

(continued on next page)

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

TABLE 4 (continued)

Descriptive Statistics

Panel B. Descriptive Statistics: Firms Incorporated In-State and Firms Incorporated Out-of-State

	HomeState = 1 (n = 562)							*HomeState* = 0 (n = 1,415)						
Variable	Mean	Stdev	Min	Max	Q1	Median	Q3	Mean	Stdev	Min	Max	Q1	Median	Q3
TotalDisc	0.546	0.309	0	1	0.281	0.561	0.813	0.506	0.313	0	1	0.240	0.500	0.800
StateLawIndex	3.238	1.540	0	6	2	4	4	1.350	1.169	0	5	1	1	1
TAconstraint	0.968	0.176	0	1	1	1	1	0.208	0.406	0	1	0	0	0
Log(FirmSize)	7.926	1.255	4.965	11.579	7.125	7.942	8.886	8.265	1.321	4.965	11.579	7.312	8.249	9.270
FirmSize	5,882.25	10,815.70	94.88	117,132.00	1,242.11	2,814.25	7,231.25	9,803.31	21,981.55	63.42	314,886.60	1,498.14	3,823.37	10,612.53
FinPerf	0.191	0.079	−0.008	0.490	0.139	0.185	0.235	0.179	0.088	−0.008	0.490	0.121	0.170	0.225
MktReturn	1.005	0.266	0.366	1.921	0.830	0.995	1.148	0.993	0.283	0.366	1.921	0.814	0.975	1.147
Leverage	0.220	0.117	0	0.631	0.137	0.224	0.287	0.254	0.133	0	0.631	0.158	0.246	0.339
Std(Return)	0.265	0.124	0.094	0.904	0.184	0.240	0.311	0.306	0.168	0.094	0.904	0.190	0.258	0.361
MB	1.688	0.803	0.797	5.115	1.142	1.382	2.002	1.625	0.823	0.797	5.115	1.086	1.352	1.849
R&D%	0.035	0.047	0	0.212	0	0.011	0.055	0.024	0.042	0	0.212	0	0.003	0.027
AdvExp%	0.019	0.034	0	0.208	0	0	0.028	0.023	0.041	0	0.208	0	0	0.032
PP&E%	0.405	0.169	0.066	0.836	0.306	0.381	0.492	0.423	0.213	0.066	0.836	0.252	0.380	0.603
DepExp%	0.053	0.019	0.013	0.130	0.040	0.050	0.062	0.056	0.025	0.013	0.141	0.038	0.052	0.067
CorrEarnRet	0.129	0.336	−0.679	0.793	−0.104	0.142	0.382	0.180	0.334	−0.679	0.793	−0.040	0.222	0.443
Financing	0.393	0.489	0	1	0	0	1	0.366	0.482	0	1	0	0	1
FirmGovIndex	7.888	2.672	2	13	6	8	10	8.637	2.838	1	15	7	9	11
TradingVolume	15.721	1.258	13.367	18.033	14.846	15.725	16.598	15.882	1.319	13.367	18.033	14.872	15.955	16.903
Turnover	0.002	0.001	0.001	0.008	0.001	0.002	0.003	0.002	0.001	0.001	0.008	0.002	0.002	0.003
Illiquidity	0.006	0.010	0	0.096	0.001	0.002	0.006	0.006	0.012	0	0.095	0.001	0.002	0.006

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

incorporated in-state, and firm-years incorporated out-of-state, respectively. The median total assets (*FirmSize*) of all firm-years is $3.591 billion, suggesting that our sample firms are generally large. However, the minimum and 1st quartile of total assets are $63.4 million and $1.444 billion, respectively, for all firm-years, which implies that our sample also includes relatively small firms. The descriptive statistics of *TotalDisc*, *StateLawIndex*, and various control variables are generally comparable with those reported in prior studies (Lang and Lundholm (1993), Lundholm and Myers (2002)). In addition, approximately 30% of our sample firms are incorporated in-state (*HomeState* = 1), a result consistent with the findings of prior studies (e.g., Wald and Long (2007)).

We also examine correlations among variables included in the disclosure analyses for firms incorporated in-state, firms incorporated out-of-state, and all sample firms, respectively. (For parsimony, we do not tabulate these results.) The correlation between *TotalDisc* and *StateLawIndex* is positive and significant at $p < 0.01$ for both the full sample and the subsample of firms incorporated out-of-state, consistent with the notion that state-level takeover protection increases firms' voluntary disclosure. In addition, *TotalDisc* is positively correlated with *Log(FirmSize)*, *FinPerf*, *MktReturn*, *PP&E%*, and *FirmGovIndex*, and negatively associated with *Std(Return)* and *CorrEarnRet*, suggesting the necessity to control for these variables in the multivariate analyses. To minimize outlier effects, we winsorize continuous variables at the top and bottom 1 percentile.

IV. Research Design and Results

In this section, we explain the research design and report all empirical results. All of our tests employ 2-stage self-selection models to account for endogeneity bias resulting from firms' incorporation decisions. Section IV.A examines the determinants of a firm's incorporation decision as the 1st-stage model. Section IV.B analyzes the impact of antitakeover statutes on voluntary disclosure and addresses two potential concerns regarding our 2-stage method. Section IV.C examines the effect of antitakeover statutes on stock market liquidity. Section IV.D examines whether the voluntary disclosure results are driven primarily by shareholder demand or managerial self-interest. Finally, Section IV.E examines the interaction between the statutes and firm-level antitakeover provisions.

A. Endogenous Incorporation Decisions

In the United States, firms can choose in which state to incorporate and are subject to that state's corporate laws. Recent studies (e.g., Bebchuk and Cohen (2003), Wald and Long (2007)) suggest that firms whose home states have more antitakeover statutes are more likely to incorporate in-state, suggesting that managers migrate to states with strong antitakeover statutes. Thus, a firm's state of incorporation and the state's antitakeover laws cannot be taken as exogenous. A model that ignores self-selection would yield biased estimates of antitakeover statutes' effects on voluntary disclosure. We use a Heckman (1976) 2-stage self-selection model to correct for self-selection bias resulting from firms' incorporation decisions. In the 1st stage, following Wald and Long, we estimate the

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

following probit regression of a firm's in-state versus out-of-state incorporation decision:

$$
\begin{aligned}
(1)\quad HomeState_{it} \;=\; & \alpha_0 + \alpha_1\, Log(FirmSize)_{it} + \alpha_2\, FinPerf_{it} + \alpha_3\, MB_{it} \\
& + \alpha_4\, R\&D\%_{it} + \alpha_5\, AdvExp\%_{it} + \alpha_6\, PP\&E\%_{it} \\
& + \alpha_7\, DepExp\%_{it} + \alpha_8\, Log(Employees)_{it} \\
& + \alpha_9\, Employees/StatePopulation_{it} \\
& + \alpha_{10}\, HomeStateLawIndex_{it} + \alpha_{11}\, HomeTAconstraint_{it} \\
& + \sum \lambda_p Industry_p + \sum \delta_t Year_t + u_{it}.
\end{aligned}
$$

In this equation, *HomeState* is a dummy variable reflecting the binary outcome of whether the firm incorporates in-state or out-of-state. We include firm, state, and industry characteristics as the determinants of firms' incorporation decisions. Specifically, firm characteristics include firm size (*Log(FirmSize)*), financial performance (*FinPerf*), market-to-book ratio (*MB*), asset tangibility (*R&D%*, *AdvExp%*, *PP&E%*, and *DepExp%*), and firm employment (*Log(Employees)* and *Employees/StatePopulation*). In addition, we include *HomeStateLawIndex*, a measure of antitakeover statutes in the firm's home state, and *HomeTAconstraint*, a dummy variable of total asset constraints in its home state, to capture the effect of the home state's statutory restrictions, because managers prefer states with more restrictive antitakeover statutes or less-stringent payout constraints (Wald and Long (2007)). Finally, as in Wald and Long, we control for industry fixed effects, including *HighTech* for the technology industry and dummy variables for other industries, and year fixed effects.

Successful use of the Heckman (1976) 2-stage procedure requires the presence of at least one explanatory variable that is correlated with the endogenous incorporation choice in the 1st-stage equation, but is not correlated with the 2nd-stage error term when other covariates are controlled (Puhani (2000)). To meet exclusion restrictions, we use two employment measures, the number of employees (*Log(Employees)*) and the ratio of employees to state population (*Employees/StatePopulation*), as instrumental variables in equation (1) for two reasons.[9] First, state legislatures generally respond to in-state (potentially voting) organized employees more than out-of-state (nonvoting) dispersed shareholders (Romano (1987)). Accordingly, firms with more employees generally have greater ability to seek protective legislation in their home states. Consistent with this argument, Wald and Long (2007) find that firms with more employees are more likely to incorporate in their home state. In addition, a given number of employees would also give a firm more political clout when its home state's population is lower. Thus, our 1st-stage incorporation equation includes the two employment measures as important explanatory variables. Second, it is unlikely that these two variables affect disclosure, because according to the disclosure literature (e.g., Lang

[9]As discussed later, we control for home state fixed effects (i.e., *HomeLocation* dummy variables) in the 2nd-stage disclosure equation (i.e., equation (2) of our paper). Accordingly, *HomeStateLawIndex* and *HomeTAconstraint*, which capture the legal environment of the firm's home state, are subsumed within these state dummy variables; thus, they are not used as instrumental variables.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

and Lundholm (1993)), the major firm-level determinants of voluntary disclosure are firm size, performance, performance variability, and management/investor information asymmetry. Bushee, Matsumoto, and Miller (2003) also find an insignificant association between the number of employees and voluntary disclosure. Thus, we believe that the two employment measures are valid instruments for the incorporation decision.[10]

As column 1 of Table 5 shows, larger firms (*Log(FirmSize)*) are less likely to incorporate in-state, a result consistent with Bebchuk and Cohen's (2003) extra cost story that the extra transaction costs involved in out-of-state incorporation have lower weight for larger firms. As in Wald and Long (2007), more profitable

TABLE 5

Probit Regressions on Firms' Incorporation Decisions

Table 5 reports the results of probit regressions on firms' in-state versus out-of-state incorporation decisions during the period 1987–1995. Column 1 presents the results on the full sample, and column 2 presents the results on a narrower sample after excluding i) both out-of-state incorporating firms whose home state has more antitakeover laws than Delaware, and ii) in-state incorporating firms whose home state has fewer antitakeover laws than Delaware. The dependent variable *HomeState* for the 2 columns is a dummy variable with a value of 1 if the firm's home state equals its state of incorporation, and 0 otherwise. See Table 3 for other variable definitions. For brevity, the coefficients on industry and year dummy variables are not presented. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively, for 2-tailed tests. *Z*-statistics using standard errors clustered by firms are reported in parentheses.

Variable	1	2
Intercept	2.115***	30.957***
	(3.83)	(5.21)
Log(FirmSize)	−0.546***	−6.797***
	(−6.38)	(−5.63)
FinPerf	1.245*	−19.883***
	(1.70)	(−3.39)
MB	−0.131*	0.926*
	(−1.72)	(1.84)
R&D%	6.169***	32.888***
	(4.52)	(3.79)
AdvExp%	−4.413***	10.145
	(−2.95)	(0.85)
PP&E%	0.759**	−4.412
	(2.09)	(−1.35)
DepExp%	−13.127***	15.032
	(−4.63)	(1.15)
Log(Employees)	0.465***	5.357***
	(5.26)	(5.42)
Employees/StatePopulation	−3.022	70.035***
	(−0.90)	(5.30)
HomeStateLawIndex	0.195***	10.416***
	(8.69)	(8.23)
HomeTAconstraint	−0.809***	−5.233***
	(−3.56)	(−6.40)
HighTech	0.854***	−0.900
	(6.83)	(−0.91)
Industry fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Sample size	1,977	973
Likelihood ratio	435.055***	1,337.097***
McFadden R^2	0.184	0.994
Partial R^2	0.018	0.013

[10]In Section IV.B.2, we also perform tests to mitigate concerns over the validity of the instruments.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

firms (*FinPerf*) are more likely to remain in-state. In addition, the coefficients of *MB*, *R&D%*, *AdvExp%*, *PP&E%*, and *DepExp%* are statistically significant, suggesting that growth and asset opacity measures are good predictors of a firm's incorporation choice. Between the two instrumental variables, *Log(Employees)* is significantly and positively associated with the likelihood of in-state incorporation, suggesting that firms with more employees benefit from their increased political influence (Wald and Long (2007)).[11] Finally, we find that firms headquartered in states with more antitakeover laws (*HomeStateLawIndex*) or looser payout restrictions (*HomeTAconstraint*) are more likely to incorporate in their headquarters state, which is consistent with Wald and Long's findings that managers prefer to incorporate in states that are less restrictive or more friendly to incumbent managers.

B. Disclosure Analysis

1. Disclosure Model

To test the hypothesis that state antitakeover laws are associated with voluntary disclosure, we include the inverse Mills ratios based on the results from equation (1) as additional regressors in the following equation (2):

$$
\begin{aligned}
(2)\ TotalDisc_{it} \;=\;& \beta_{j0} + \beta_{j1}\, StateLawIndex_{it} + \beta_{j2}\, Log(FirmSize)_{it} \\
&+ \beta_{j3}\, FinPerf_{it} + \beta_{j4}\, MktReturn_{it} + \beta_{j5}\, MB_{it} \\
&+ \beta_{j6}\, R\&D\%_{it} + \beta_{j7}\, AdvExp\%_{it} + \beta_{j8}\, PP\&E\%_{it} \\
&+ \beta_{j9}\, DepExp\%_{it} + \beta_{j10}\, Std(Return)_{it} + \beta_{j11}\, CorrEarnRet_{it} \\
&+ \beta_{j12}\, Financing_{it} + \beta_{j13}\, Leverage_{it} + \beta_{j14}\, FirmGovIndex_{it} \\
&+ \beta_{j15}\, TAconstraint_{it} + \beta_{j16}\, InvMills_{j,it} \\
&+ \sum \psi_{jq} HomeLocation_{q} + \sum \lambda_{jk} Industry_{k} \\
&+ \sum \delta_{jt} Year_{t} + \varepsilon_{j,it},
\end{aligned}
$$

where $j = 0$ for firms incorporated out-of-state, and $j = 1$ for firms incorporated in-state.

We control for firm, state, and industry characteristics that potentially affect a firm's disclosure. As in prior studies (Lang and Lundholm (1993), Nagar, Nanda, and Wysocki (2003)), we control for firm characteristics, including firm size (*Log(FirmSize)*), firm performance (*FinPerf* and *MktReturn*), market-to-book ratio (*MB*), performance variability (*Std(Return)*), the correlation between returns and earnings (*CorrEarnRet*), and the need for external capital (*Financing*). In addition, we include the 4 measures of asset opacity or tangibility (*R&D%*, *AdvExp%*, *PP&E%*, and *DepExp%*). Prior studies (e.g., Lang and Lundholm (1993)) generally find evidence that voluntary disclosure increases with firm size

[11] Since the primary purpose of implementing exclusion restrictions is to mitigate potential collinearity problems caused by controlling for inverse Mills ratios (Puhani (2000)), we also calculate the variance inflation factors (VIFs) in our 2nd-stage disclosure regressions. All the VIFs are lower than the cutoff point of 10 (Kutner, Nachtsheim, and Neter (2004)), which suggests that including inverse Mills ratios in the disclosure equation does not introduce serious multicollinearity problems.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

and performance but report mixed findings regarding the relationship between voluntary disclosure and other variables. As we focus on the impact of state antitakeover statutes, we also include *FirmGovIndex*, a measure of firm-level antitakeover provisions based on Gompers et al. (2003), and *Leverage*, a measure of financial leverage (Garvey and Hanka (1999)), to control for firm-specific takeover vulnerability.

In addition to antitakeover laws, corporate laws of the states of incorporation also differ in their restrictions on firm distributions to shareholders.[12] The primary goal of these state-level payout restrictions is to protect the interests of debt holders by preserving the minimum value of corporate assets necessary to secure payment of debt-holder claims. To the extent that these restrictions and voluntary disclosure are substitutes in mitigating the agency cost of debt,[13] we expect a negative association between statutory payout restrictions and firms' voluntary disclosure. Thus, following Francis et al. (2010), we include the dummy variable *TAconstraint* to capture differences in state-of-incorporation payout restrictions. We further add a set of state-of-location dummy variables (*HomeLocation*) to control for differences across the states where our sample firms are headquartered. Finally, given the panel nature of our data, we control for industry and year fixed effects. In estimating the 2nd-stage disclosure model, we allow the standard errors to cluster by state of incorporation to account for arbitrary correlation across firms incorporated in the same state and serial correlation across years within the same firm.[14]

2. Results of Disclosure Analyses

We estimate equation (2) separately for firms incorporated in-state and out-of-state.[15] In columns 1 and 2 of Table 6, we present the 2nd-stage results corresponding to the 1st-stage analyses reported in column 1 of Table 5. For firms incorporated out-of-state (*HomeState* = 0), which account for approximately 70% of our sample firms, the coefficient on *StateLawIndex* is positive and statistically significant ($p < 0.01$), suggesting that firms incorporated in a state with more antitakeover laws tend to provide higher levels of disclosure. By comparison, the effect of state antitakeover laws is less pronounced and not significant for firms incorporated in-state (*HomeState* = 1). In addition, inverse Mills ratios ($InvMills_1$

[12] According to Peterson and Hawker (1997), states such as Arizona, Delaware, Kansas, Louisiana, Maine, Nevada, New Hampshire, Oklahoma, Rhode Island, and Vermont adopt few restrictions on firm distributions. Firms incorporated in these states are allowed to pay dividends out of surplus or, in case surplus is not available, out of the net profits for the fiscal year in which the dividend is declared and/or the preceding fiscal year. At the other end of the spectrum are California and Alaska, the two states with the most stringent dividend statutes, which require a minimum 1.25 ratio between the book value of the total assets (exclusive of intangible assets such as goodwill) and total liabilities before a distribution can be made to investors. Most states generally adopt relatively mild restrictions. For example, Arkansas, Florida, and many other states allow financial distributions whenever the corporation's total assets exceed total liabilities.

[13] Sengupta (1998) suggests that voluntary disclosure reduces creditors' perception of default risk for the disclosing firm and thus lowers its cost of debt.

[14] Alternatively, we cluster the standard errors either by state of location or by firm and find similar results (untabulated).

[15] We perform several sensitivity tests of disclosure analyses and report the results in the Appendix.

TABLE 6

The Effect of State Antitakeover Laws on Voluntary Disclosure

The columns under "*HomeState* = 1" show the 2nd-stage regression results of sample firms that are incorporated in-state during the period 1987–1995. The columns under "*HomeState* = 0" show the 2nd-stage regression results of sample firms that are incorporated out-of-state during the period 1987–1995. Columns 1 and 2 report the results on the full sample; columns 3 and 4 report the results on the sample after excluding both i) out-of-state incorporating firms whose home state has more antitakeover laws than Delaware, and ii) in-state incorporating firms whose home state has fewer antitakeover laws than Delaware; columns 5 and 6 report the results on a subsample of firm-years whose home state has a right-to-work law; and columns 7 and 8 report the results with the firm's industry unionization rate as an additional control. In all regressions, the dependent variable *TotalDisc* is the percentile rank of the AIMR ratings of firm *i*'s total voluntary disclosure in year *t*. *StateLawIndex* is the antitakeover index in year *t* measured as the number of state antitakeover laws (i.e., CSA statute, FP statute, BC statute, PPE statute, constituencies statute, and recapture statute) in the state where the firm is incorporated. See Table 3 for other variable definitions. All regressions include home state location, industry, and year fixed effects. For brevity, the coefficients on these dummy variables are not presented. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively, for 2-tailed tests. *Z*-statistics using standard errors clustered by states of incorporation are reported in parentheses.

		1	2	3	4	5	6	7	8
		HomeState							
Variable	Exp. Sign	1	0	1	0	1	0	1	0
Intercept		0.163 (0.48)	–1.063*** (–6.75)	–0.147 (–0.51)	–2.274*** (–16.25)	–2.656*** (–4.21)	–1.656*** (–10.64)	0.206 (0.60)	–0.859*** (–5.17)
StateLawIndex	?	–0.004 (–0.24)	0.051*** (3.25)	0.000 (0.01)	0.057*** (3.26)	0.047 (0.65)	0.037* (1.87)	–0.009 (–0.48)	0.055*** (3.45)
Log(FirmSize)	+	0.010 (0.36)	0.084*** (4.68)	0.028 (1.00)	0.085*** (5.06)	0.308*** (8.20)	0.136*** (7.11)	0.013 (0.44)	0.083*** (6.75)
FinPerf	+	0.291 (0.68)	0.290 (1.69)	0.090 (0.19)	0.569** (2.78)	0.148 (0.71)	–0.488* (–1.94)	0.349 (0.79)	0.198 (1.45)
MktReturn	+	0.016 (0.35)	0.093*** (3.92)	0.021 (0.44)	0.034 (0.64)	0.129* (2.13)	0.075** (2.48)	0.011 (0.23)	0.087*** (3.57)
Leverage	+	0.166 (0.91)	0.045 (0.46)	0.256 (1.29)	0.009 (0.14)	–1.076*** (–4.85)	0.092 (0.94)	0.157 (0.83)	0.029 (0.23)
Std(Return)	?	–0.015 (–0.06)	0.002 (0.05)	0.090 (0.34)	0.090*** (3.01)	0.499 (1.20)	0.115 (1.08)	–0.011 (–0.04)	0.039 (0.77)
MB	?	–0.057 (–1.06)	0.038*** (3.18)	–0.064 (–1.11)	–0.008 (–0.40)	0.101 (1.37)	0.101*** (4.87)	–0.065 (–1.19)	0.040*** (3.24)
R&D%	?	2.276*** (3.44)	1.004** (2.60)	1.714** (2.41)	0.849** (2.82)	15.258* (2.07)	2.532*** (7.45)	2.275*** (3.38)	0.856** (2.19)
AdvExp%	?	–0.673 (–1.34)	0.423 (1.10)	–0.289 (–0.58)	–0.717 (–1.07)	1.305 (0.45)	0.426 (0.65)	–0.622 (–1.26)	0.442 (1.36)
PP&E%	?	0.580** (2.34)	0.096 (0.72)	0.468 (1.70)	0.211* (1.96)	0.723*** (4.99)	–0.125 (–1.32)	0.546** (2.20)	0.017 (0.12)
DepExp%	?	–5.166** (–2.43)	–1.320* (–1.95)	–3.701** (–2.07)	–2.793*** (–7.87)	–1.547 (–0.66)	1.826* (2.07)	–5.131** (–2.39)	–0.743 (–0.95)
CorrEarnRet	?	–0.104* (–1.86)	–0.053 (–1.54)	–0.109* (–1.98)	–0.204*** (–3.54)	–0.229*** (–7.85)	–0.129*** (–4.06)	–0.100* (–1.77)	–0.083** (–2.77)
Financing	?	–0.033 (–1.26)	0.027 (1.65)	–0.037 (–1.33)	–0.016 (–1.48)	–0.096** (–2.79)	–0.006 (–0.21)	–0.035 (–1.29)	0.021 (1.55)
FirmGovIndex	?	0.018 (1.36)	0.018*** (3.68)	0.022 (1.61)	–0.006** (–2.18)	0.009 (0.21)	–0.014 (–1.47)	0.019 (1.36)	0.014** (2.68)
TAconstraint	–	–0.173 (–0.41)	–0.092* (–1.82)	0.049 (0.13)	–0.230* (–2.13)	–0.259 (–0.73)	–0.242** (–2.38)	–0.179 (–0.39)	–0.100* (–1.93)
IndUnionization%	–							0.105 (0.46)	–0.381*** (–4.23)
$InvMills_1$	?	0.143** (2.11)		0.243 (1.11)		–0.002 (–0.01)		0.119** (2.16)	
$InvMills_0$	?		–0.099* (–1.87)		–0.373*** (–3.48)		–0.208** (–2.63)		–0.120** (–2.17)
Industry fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Location fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size		562	1,415	515	458	107	310	555	1,347
R^2		0.479	0.273	0.495	0.365	0.832	0.623	0.475	0.281

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

and $InvMills_0$) are significantly associated with disclosure, indicating the importance of correcting for self-selection bias.

In terms of other control variables, in the *HomeState* = 0 regression, a firm's disclosure is positively associated with its size (*Log(FirmSize)*) and performance (*MktReturn*), consistent with the findings of prior studies (e.g., Lang and Lundholm (1993)). For these firms, higher *MB* and *R&D%* are associated with higher levels of disclosure, suggesting that growth firms are likely to disclose more in order to mitigate information asymmetry. In addition, out-of-state incorporating firms with more firm-level provisions (*FirmGovIndex*) have higher levels of voluntary disclosure. Because these provisions reduce takeover vulnerability (Gompers et al. (2003)), this result also suggests that more-protected firms tend to provide more transparent disclosures. Finally, the coefficient on *TAconstraint* is significantly negative, suggesting that state-level payout restrictions are a substitute for disclosure to protect debt-holder interests. By comparison, in the *HomeState* = 1 regression, fewer variables are significantly associated with disclosure, though most of these variables have the same signs as the *HomeState* = 0 regression.

A potential concern with the foregoing 2-stage analysis is that it corrects for selection bias resulting from in-state or out-of-state incorporation, rather than directly controlling bias from firms choosing to incorporate in states with stronger antitakeover laws. U.S. firms can incorporate either in their home state; in Delaware, where more than 50% of public firms are incorporated; or in another state. As prior studies (e.g., Romano (1987), Daines (2001)) point out, compared to other states, Delaware is appealing to many public firms for its specialized legal capital, significant legal precedents, and responsiveness in updating legislation. Therefore, a firm might choose to incorporate in Delaware for reasons other than seeking stronger takeover protection. To ensure our inference is sound, we use Delaware as a benchmark and drop from our sample i) out-of-state incorporating firms whose home state has more antitakeover laws than Delaware, and ii) in-state incorporating firms whose home state has fewer antitakeover laws than Delaware. Subsequently, only 3.5% of observations in the out-of-state incorporating sample have weaker antitakeover laws in the state of incorporation than their home state, suggesting that nearly all of these firms self-select into out-of-state incorporation for stronger antitakeover laws.

We present the 1st-stage results on this narrower sample in column 2 of Table 5 and the corresponding 2nd-stage results in columns 3 and 4 of Table 6.[16] Both *Log(Employees)* and *Employees/StatePopulation* are positively associated with the likelihood of in-state incorporation. Thus, a firm's employment level relative to its home state's population also affects its in-state political influence and incorporation decision. As shown in column 4, *StateLawIndex* remains positively associated with disclosure for out-of-state incorporating firms.

Another potential concern with our design is that the 2 employment-related instrumental variables could be correlated with firm disclosure policy. Prior studies

[16]For this narrower sample, we also perform the same set of multivariate analyses (not tabulated) as those discussed in Sections IV.C–E, and we obtain results that are similar to those reported in this paper.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

(Hilary (2006), Scott (1994)) suggest that firms dealing with strong unions reduce voluntary disclosure in order to improve their bargaining position. To the extent that firms with a large number of employees are more labor intensive and are more likely to be unionized, our instruments could be correlated with firm disclosure policy through this collective bargaining channel and, therefore, could be invalid. To address this concern, we adopt two approaches. First, we perform a 2-stage analysis on a subsample of firm-years whose home state has a right-to-work law.[17] Since such laws severely weaken union bargaining power, it is unlikely that firm employment affects disclosure policy through the collective bargaining channel. As shown in columns 5 and 6 of Table 6, the coefficient on *StateLawIndex* remains positive and significant ($p < 0.1$) in the *HomeState* = 0 regression and insignificant in the *HomeState* = 1 regression. Because the subsample approach may lack statistical power due to using a substantially smaller sample, we adopt a 2nd approach by directly controlling for the unionization rate (*IndUnionization%)* in a firm's industry in the disclosure regression using the Union Membership and Coverage Database.[18] The results in columns 7 and 8 show that in the out-of-state sample, firms protected by more antitakeover statutes disclose more transparently. In addition, *IndUnionization%* is negatively associated with voluntary disclosure, consistent with managers reducing disclosure in the presence of strong unions (Hilary).

C. Market Liquidity Analysis

Our findings so far suggest that firms incorporated in states with more antitakeover statutes provide higher levels of disclosure. To corroborate these findings, we further examine the effect of antitakeover statutes on market liquidity. Prior studies (e.g., Leuz and Verrecchia (2000), Brown, Hillegeist, and Lo (2004)) show that increased disclosure is related to capital market benefits such as increased liquidity. If firms incorporated in states with more antitakeover statutes disclose more information (consistent with our earlier results), we expect such disclosure-related benefits to be more pronounced for these firms.

To test this prediction, we adopt 3 widely used measures of liquidity: dollar volume of trading (*TradingVolume*), stock turnover (*Turnover*), and stock illiquidity (*Illiquidity*).[19] Consistent with trading volume and turnover being proxies for liquidity, several studies (e.g., Brennan, Chordia, and Subrahmanyam (1998), Chordia, Subrahmanyam, and Anshuman (2001)) find that expected stock returns

[17]We obtain the information on right-to-work laws from the National Right to Work Web site (http://www.nrtw.org/b/rtw_faq.htm). Among the 22 states that have a right-to-work law, 20 states enacted the law prior to our sample period, 1 state (Texas) enacted the law during our sample period (1993), and 1 state (Oklahoma) enacted the law after our sample period (2001).

[18]This database, which is maintained by Barry Hirsch and David Macpherson (http://www.unionstats.com), provides private and public sector labor union membership estimates based on the Census Industry Code (CIC) industries. Since CIC 3-digit and SIC 3-digit industries are not exactly matched, and the database does not cover all CIC industries, we lose some observations when we control for the unionization rate in the regression.

[19]We do not use bid-ask spreads to measure liquidity for two reasons. First, according to the data description guide of Center for Research in Security Prices, a continuous series of bid and ask data for NYSE and AMEX securities are only available since Dec. 28, 1992, which reduces our sample size substantially. Second, the bid-ask spread is a highly imperfect measure of liquidity.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

are negatively associated with these two measures. Higher values of *TradingVolume* and *Turnover* suggest higher levels of liquidity. Although these two measures capture trading frequency or willingness, they fail to account for trading costs and may capture effects not related to liquidity (Lesmond (2005)). We therefore adopt a 3rd proxy, the illiquidity measure (*Illiquidity*) introduced by Amihud (2002). Following Kyle's (1985) price impact definition of liquidity, this ratio reflects the daily price response associated with $1 of trading volume; thus, a higher value of *Illiquidity* indicates less liquidity.

As in the disclosure analyses, we adopt a 2-stage framework to investigate the relation between state antitakeover laws and market liquidity. Since the 1st-stage estimation results for the market liquidity analyses are essentially identical to those reported in Table 5, we do not tabulate these results. Table 7 reports 2nd-stage estimation results from regressing measures of market liquidity on the same set of explanatory variables in equation (2). Consistent with the disclosure

TABLE 7

The Effects of State Antitakeover Statutes on Market Liquidity

The columns under "*HomeState* = 1" show the 2nd-stage regression results of sample firms that are incorporated in-state during the period 1987–1995. The columns under "*HomeState* = 0" show the 2nd-stage regression results of sample firms that are incorporated out-of-state during the period 1987–1995. The dependent variable *TradingVolume* for columns 1 and 2 is the median of the log of firm *i*'s daily dollar trading volume during each year, where dollar trading volume is restated into a constant dollar of 2004 using the GDP deflator published by the Bureau of Economic Analysis. The dependent variable *Turnover* for columns 3 and 4 is the median ratio of firm *i*'s daily trading volume to its shares outstanding during each year. The dependent variable *Illiquidity* for columns 5 and 6 is firm *i*'s annual average ratio of the daily absolute return to the dollar trading volume on that day during each year. *StateLawIndex* is the antitakeover index in year *t* measured as the number of state antitakeover laws (i.e., CSA statute, FP statute, BC statute, PPE statute, constituencies statute, and recapture statute) in the state where the firm is incorporated. See Table 3 for other variable definitions. All regressions include home state location, industry, and year fixed effects. For brevity, the coefficients on these dummy variables are not presented. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively, for 2-tailed tests. *Z*-statistics using standard errors clustered by states of incorporation are reported in parentheses.

	TradingVolume		*Turnover*		*Illiquidity*	
	1	2	3	4	5	6
	HomeState					
Variable	1	0	1	0	1	0
Intercept	8.151***	5.246***	0.004**	0.001	0.059***	0.084***
	(12.12)	(16.70)	(2.58)	(1.04)	(3.74)	(6.60)
StateLawIndex	−0.028	0.076**	−0.000	0.000***	−0.001	−0.002***
	(−0.78)	(2.25)	(−1.17)	(3.66)	(−1.15)	(−2.89)
Log(FirmSize)	0.828***	1.015***	−0.000	0.000**	−0.003***	−0.006***
	(13.83)	(75.58)	(−1.27)	(2.18)	(−3.30)	(−19.49)
FinPerf	2.039***	2.417***	0.001	0.002***	−0.009	−0.024***
	(2.83)	(10.92)	(0.74)	(5.67)	(−0.61)	(−12.28)
MktReturn	0.231***	0.345***	−0.000	0.000	−0.004*	−0.000
	(2.91)	(8.01)	(−0.21)	(0.56)	(−1.77)	(−0.14)
Leverage	−0.371	−0.742***	0.001	0.001***	0.001	0.009**
	(−0.64)	(−5.93)	(0.93)	(6.65)	(0.18)	(2.18)
Std(Return)	0.565	0.821***	0.004***	0.002***	−0.001	−0.005**
	(1.45)	(5.66)	(3.32)	(11.74)	(−0.10)	(−2.15)
MB	0.401***	0.649***	−0.000	−0.000*	−0.003	−0.001***
	(4.94)	(22.13)	(−1.67)	(−1.98)	(−1.17)	(−9.71)
R&D%	4.987**	−0.485	0.009**	−0.005***	0.033	−0.010
	(2.55)	(−0.61)	(2.16)	(−4.48)	(0.75)	(−1.45)
AdvExp%	2.550**	0.912*	0.001	0.003***	−0.026	−0.004
	(2.74)	(1.97)	(0.41)	(5.02)	(−1.68)	(−1.06)
PP&E%	0.084	0.391***	−0.001	0.001	−0.016**	−0.004**
	(0.14)	(5.75)	(−1.36)	(1.57)	(−2.12)	(−2.47)

(continued on next page)

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

TABLE 7 (continued)
The Effects of State Antitakeover Statutes on Market Liquidity

	TradingVolume		*Turnover*		*Illiquidity*	
	1	2	3	4	5	6
	HomeState					
Variable	1	0	1	0	1	0
DepExp%	−1.326 (−0.45)	−0.989 (−1.24)	0.004 (0.73)	−0.006*** (−4.34)	0.050 (0.76)	0.027*** (3.26)
CorrEarnRet	−0.056 (−0.58)	−0.045 (−1.16)	−0.000 (−1.65)	0.000 (1.65)	0.002 (0.87)	−0.001 (−1.70)
Financing	0.053 (1.51)	−0.028** (−2.64)	−0.000 (−0.26)	0.000** (2.85)	−0.001* (−2.02)	0.001** (2.22)
FirmGovIndex	0.027 (1.60)	0.022*** (4.10)	0.000 (1.59)	0.000*** (9.19)	−0.001** (−2.15)	−0.000 (−0.75)
TAconstraint	−1.058*** (−3.43)	−0.209 (−1.66)	−0.002* (−1.97)	−0.001*** (−4.54)	0.004 (0.57)	0.005* (2.04)
$InvMills_1$	−0.102 (−0.97)		0.000 (0.03)		−0.004 (−1.04)	
$InvMills_0$		0.029 (0.28)		0.000 (0.31)		0.001 (1.53)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Location fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	531	1,354	524	1,344	514	1,302
R^2	0.923	0.899	0.611	0.521	0.649	0.500

analyses, the effect of state antitakeover laws is primarily concentrated among firms incorporated out-of-state. Specifically for these firms, *StateLawIndex* is negatively associated with *Illiquidity* and positively associated with *TradingVolume* and *Turnover* ($p < 0.05$ or $p < 0.01$) after correcting for potential self-selection bias. The coefficients of *StateLawIndex* do not attain significance for firms incorporated in-state. Combined with the results of Table 6, the evidence corroborates the argument that enhanced takeover protection allows firms to disclose more and thus improves firms' information environments.

D. Managerial Self-Interest or Shareholder Demand?

In this section, we perform analyses to distinguish between the shareholder-demand view and the takeover-pressure view. As the foregoing discussion in Section II suggests, the shareholder-demand view is supported if we find a negative interaction between state antitakeover statutes and proprietary costs. We focus on two factors that are likely to affect a firm's proprietary costs: innovation and industry competition. A firm relying more heavily on innovation enjoys greater future opportunities (e.g., Griliches (2000)), and it faces stronger pressure to protect these opportunities. We therefore expect the firm's proprietary costs of disclosure to increase with its innovation and growth opportunities. We use three alternative proxies for future growth opportunities and levels of innovation: R&D intensity (*R&D%*), market-to-book ratio (*MB*), and growth (*SalesGrowth*).[20] Proprietary

[20]Prior studies (e.g., Hall, Jaffe, and Trajtenberg (2001)) report positive associations between these measures and firm-level patents.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

costs also decrease with industry competition because excess profits tend to occur in less competitive industries and disclosures from firms in these industries are therefore more likely to provide competitors with useful information (e.g., Harris (1998), Botosan and Stanford (2005)). To measure industry competition, we follow Harris and focus on industry concentration, which is estimated with the Herfindahl index (*Herfindahl*) and industry concentration ratio (*IndusConcen*).

We use the same framework as our primary disclosure analyses to test for the interaction effect. Since our analyses to this point show that the disclosure effect of antitakeover laws is primarily concentrated among firms incorporated out-of-state, we test the interaction between antitakeover laws and proxies for innovation and industry competition for these firms. Table 8 presents the 2nd-stage results of the tests. In the first 2 columns, we add to our baseline model (equation (2)) an interaction term between *StateLawIndex* and one of the two proxies for growth and innovation (*R&D%* and *MB*), because the model has included *R&D%* and *MB*. In the remaining 3 columns (columns 3–5), we add to the baseline model both a stand-alone term of growth (*SalesGrowth*) or industry competition (*Herfindahl* or *IndusConcen*) and a corresponding interaction term. As Table 8 shows, the coefficients on the interaction terms are not significantly negative at the conventional levels.[21] Thus, we do not find strong evidence that shareholders demand more

TABLE 8

The Interaction Effect of State Antitakeover Statutes and Proprietary Costs

All columns show the 2nd-stage regression results of sample firms that are incorporated out-of-state during the period 1987–1995. In all regressions, the dependent variable *TotalDisc* is the percentile rank of the AIMR ratings of firm *i*'s total voluntary disclosure in year *t*. *StateLawIndex* is the antitakeover index in year *t* measured as the number of state antitakeover laws (i.e., CSA statute, FP statute, BC statute, PPE statute, constituencies statute, and recapture statute) in the state where the firm is incorporated. R&D% is the ratio of firm *i*'s R&D expenditures to its sales (#12) in year $t-1$; *MB* is the ratio of firm *i*'s total market value to its book value of assets; *SalesGrowth* is firm *i*'s growth of sales measured as $(\text{sales}_{t-1} - \text{sales}_{t-2})/(\text{sales}_{t-2})$; *Herfindahl* is the Herfindahl index of firm *i*, measured as the sum of squared market shares of all firms in the same 2-digit SIC industry, where a firm's market share is the firm's sales (#12) as a proportion of total sales in the industry; *IndusConcen* is the industry concentration ratio measured as the percentage of market share owned by the largest 4 firms in the same 2-digit industry, where a firm's market share is the firm's sales (#12) as a proportion of total sales in the industry. See Table 3 for other variable definitions. All regressions include home state location, industry, and year fixed effects. For brevity, the coefficients on these dummy variables are not presented. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively, for 2-tailed tests. *Z*-statistics using standard errors clustered by states of incorporation are reported in parentheses.

Variable	Exp. Sign	1	2	3	4	5
Intercept		−1.064***	−1.010***	−1.057***	−1.045***	−1.014***
		(−6.72)	(−6.33)	(−6.80)	(−6.55)	(−5.89)
StateLawIndex	?	0.052***	0.007	0.050***	0.035	0.034
		(3.00)	(0.24)	(3.25)	(1.39)	(0.88)
StateLawIndex × *R&D%*	?	−0.133				
		(−0.35)				
StateLawIndex × *MB*	?		0.019*			
			(1.84)			

(continued on next page)

[21] The positive coefficient on *StateLawIndex*×*MB* is not consistent with the shareholder-demand view. One potential explanation is that in the presence of strong takeover protection, managers of firms with higher information asymmetry (*MB*) are likely to disclose more because greater capital market benefits accrue to these firms due to increased disclosure.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

TABLE 8 (continued)

The Interaction Effect of State Antitakeover Statutes and Proprietary Costs

Variable	Exp. Sign	1	2	3	4	5
StateLawIndex × *SalesGrowth*	?			0.013		
				(0.55)		
StateLawIndex × *Herfindahl*	?				0.170	
					(0.81)	
StateLawIndex × *IndusConcen*	?					0.033
						(0.45)
SalesGrowth	?			−0.036		
				(−1.08)		
Herfindahl	?				−0.669**	
					(−2.74)	
IndusConcen	?					−0.222**
						(−2.33)
Log(FirmSize)	?	0.084***	0.081***	0.083***	0.087***	0.087***
		(4.72)	(4.66)	(4.56)	(5.15)	(5.10)
FinPerf	+	0.286	0.271*	0.286	0.235	0.243
		(1.65)	(1.99)	(1.61)	(1.33)	(1.37)
MktReturn	+	0.093***	0.100***	0.094***	0.097***	0.096***
		(3.96)	(4.29)	(4.03)	(4.02)	(3.92)
Leverage	?	0.045	0.000	0.064	0.031	0.033
		(0.46)	(0.00)	(0.66)	(0.30)	(0.32)
Std(Return)	?	0.004	−0.001	−0.005	0.017	0.015
		(0.08)	(−0.03)	(−0.10)	(0.37)	(0.33)
MB	?	0.038***	0.004	0.040***	0.040***	0.041***
		(3.10)	(0.42)	(3.26)	(3.53)	(3.59)
R&D%	?	1.091***	0.927**	1.035**	0.960**	0.939**
		(3.15)	(2.30)	(2.74)	(2.48)	(2.55)
AdvExp%	?	0.411	0.322	0.432	0.408	0.395
		(1.04)	(0.85)	(1.14)	(1.07)	(1.05)
PP&E%	?	0.098	0.131	0.092	0.106	0.101
		(0.73)	(1.13)	(0.68)	(0.80)	(0.76)
DepExp%	?	−1.335*	−1.565**	−1.338*	−1.228*	−1.205*
		(−2.02)	(−2.80)	(−1.97)	(−1.83)	(−1.83)
CorrEarnRet	?	−0.054	−0.047	−0.057	−0.054	−0.056
		(−1.53)	(−1.32)	(−1.59)	(−1.52)	(−1.54)
Financing	?	0.027	0.026	0.029*	0.026	0.026
		(1.65)	(1.60)	(1.76)	(1.59)	(1.56)
FirmGovIndex	?	0.018***	0.016***	0.018***	0.018***	0.018***
		(3.73)	(3.46)	(3.67)	(3.55)	(3.54)
TAconstraint	−	−0.092*	−0.092	−0.093*	−0.090*	−0.091*
		(−1.84)	(−1.66)	(−1.86)	(−1.78)	(−1.77)
$InvMills_0$	?	−0.097*	−0.075	−0.099*	−0.082	−0.082
		(−1.93)	(−1.48)	(−1.89)	(−1.46)	(−1.45)
Industry fixed effects		Yes	Yes	Yes	Yes	Yes
Location fixed effects		Yes	Yes	Yes	Yes	Yes
Year fixed effects		Yes	Yes	Yes	Yes	Yes
Sample size		1,415	1,415	1,413	1,415	1,415
R^2		0.273	0.285	0.275	0.277	0.276

disclosure as a costly monitoring mechanism in the presence of a less-robust takeover market.

To summarize, the results from Tables 6–8 are more consistent with the takeover-pressure view that managers prefer more transparent disclosure when their job security is enhanced. Bertrand and Mullainathan (2003) find that anti-takeover statutes lower firms' operating performance, suggesting that these statutes hurt shareholder interests. Francis et al. (2010) instead report evidence

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

consistent with antitakeover statutes mitigating the agency costs of debt and thus benefiting bondholders. Distinct from these studies, our findings suggest that antitakeover legislation is likely to enhance shareholder welfare in terms of its potential to improve corporate disclosure. In addition to increasing market liquidity, transparent disclosure allows shareholders to better monitor managers, which improves managers' investment efficiency (Bens and Monahan (2004), Hope and Thomas (2008)). Thus, the overall net social benefit of antitakeover laws remains an open question.

E. Tests of Interaction between Antitakeover Statutes and Firm-Level Antitakeover Provisions

The effect of antitakeover statutes is likely to vary depending on firm-level takeover protection. Karpoff and Malatesta (1989) and Cheng et al. (2005) suggest that firm-level antitakeover protection may serve as an effective substitute for antitakeover statutes in protecting management. To the extent that the protection effect of antitakeover statutes decreases with firm-level antitakeover provisions, we expect the association between the statutes and voluntary disclosure to be less positive for firms with greater firm-level takeover protection. However, firm-level governance characteristics may reflect the allocation of power between managers and shareholders (Bebchuk and Fried (2006)). If managers of firms with more firm-level antitakeover provisions have greater power relative to shareholders (Bebchuk, Cohen, and Ferrell (2009)) and thus are likely to determine whether to disclose or withhold information, the effect of antitakeover statutes on voluntary disclosure would be more positive for firms with more firm-level takeover protection.

In addition to *FirmGovIndex*, we employ two parsimonious measures of firm-level takeover protection, *CNindex* and *StaggeredBoard*. Following Cremers and Nair (2005), the measure *CNindex* focuses on the three antitakeover provisions (staggered boards, blank check preferred stock, and restrictions on shareholders' calling special meetings or acting through written consent) that are thought to be more effective in deterring takeover activity. As in Bebchuk and Cohen (2005), we use the existence of a staggered board (*StaggeredBoard*) as a proxy for enhanced takeover protection, because a staggered board, which classifies the firm's directors into classes, can create monumental hurdles for a bidder to mount a successful takeover.

To test the two contradictory hypotheses, we add an interaction term of *StateLawIndex* and one of the three measures of firm-level takeover protection to the baseline model and test the significance of the coefficient on the interaction term for firms incorporated out-of-state. As shown in Table 9, *StateLawIndex* $\times$ *CNindex* and *StateLawIndex* $\times$ *StaggeredBoard* are positively associated with disclosure ($p < 0.01$ or $p < 0.05$). To the extent that firm-level provisions primarily indicate limitations on shareholder power (Bebchuk et al. (2009)), our results are consistent with the argument that entrenched managers have greater authority in determining the level of disclosure, and thus the effect of antitakeover statutes on disclosure is more positive for these managers.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

TABLE 9

The Interaction of State Antitakeover Statutes and Firm-Level Takeover Protection

All columns show the 2nd-stage regression results of sample firms that are incorporated out-of-state during the period 1987–1995. In all regressions, the dependent variable *TotalDisc* is the percentile rank of the AIMR ratings of firm *i*'s total voluntary disclosure in year *t*. *StateLawIndex* is the antitakeover index in year *t* measured as the number of state antitakeover laws (i.e., CSA statute, FP statute, BC statute, PPE statute, constituencies statute, and recapture statute) in the state where the firm is incorporated. *FirmGovIndex* is the number of firm-level antitakeover provisions; *CNindex* is the index based on three antitakeover provisions (staggered boards, blank check preferred stock, and restrictions on shareholders' calling special meetings or acting through written consent); and *StaggeredBoard* is a dummy variable with a value of 1 if the firm has a staggered board structure, and 0 otherwise. See Table 3 for other variable definitions. All regressions include home state location, industry, and year fixed effects. For brevity, the coefficients on these dummy variables are not presented. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively, for 2-tailed tests. *Z*-statistics using standard errors clustered by states of incorporation are reported in parentheses.

Variable	Exp. Sign	1	2	3
Intercept		−1.039***	−1.021***	−1.051***
		(−5.15)	(−6.42)	(−6.70)
StateLawIndex	?	0.033	−0.024	0.005
		(0.85)	(−0.80)	(0.25)
StateLawIndex × *FirmGovIndex*	?	0.002		
		(0.48)		
StateLawIndex × *CNindex*	?		0.041**	
			(2.46)	
StateLawIndex × *StaggeredBoard*	?			0.057***
				(2.89)
Log(FirmSize)	+	0.085***	0.088***	0.090***
		(4.80)	(5.10)	(4.91)
FinPerf	+	0.288	0.293**	0.297*
		(1.70)	(2.16)	(1.98)
MktReturn	+	0.094***	0.092***	0.089***
		(4.11)	(3.85)	(3.79)
Leverage	?	0.044	0.067	0.065
		(0.44)	(0.76)	(0.78)
Std(Return)	?	0.007	0.019	0.017
		(0.15)	(0.46)	(0.37)
MB	?	0.038***	0.025*	0.024*
		(3.14)	(1.93)	(1.81)
R&D%	?	0.987**	0.806*	0.760
		(2.61)	(1.84)	(1.64)
AdvExp%	?	0.400	0.353	0.428
		(1.02)	(0.84)	(0.91)
PP&E%	?	0.095	0.097	0.098
		(0.71)	(0.60)	(0.59)
DepExp%	?	−1.266*	−1.111	−1.195*
		(−2.04)	(−1.58)	(−1.80)
CorrEarnRet	?	−0.054	−0.061*	−0.063**
		(−1.56)	(−2.05)	(−2.11)
Financing	?	0.027	0.024	0.026*
		(1.62)	(1.73)	(1.74)
FirmGovIndex	?	0.014***		
		(3.78)		
CNindex	?		−0.038***	
			(−3.73)	
StaggeredBoard	?			−0.052**
				(−2.23)
TAconstraint	−	−0.090*	−0.096*	−0.100*
		(−1.79)	(−2.03)	(−1.92)
$InvMills_0$	?	−0.102*	−0.118**	−0.120**
		(−2.08)	(−2.37)	(−2.31)
Industry fixed effects		Yes	Yes	Yes
Location fixed effects		Yes	Yes	Yes
Year fixed effects		Yes	Yes	Yes
Sample size		1,415	1,415	1,415
R^2		0.274	0.268	0.269

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

V. Summary

The purpose of this paper is to investigate the effect of external oversight from takeover markets on voluntary disclosure activity. Although takeover protection is generally regarded as a type of weak governance that entrenches management and destroys firm value, studies to date have proposed three competing views with two contradictory effects that such protection may have on disclosure activity. Due to a lack of sufficient evidence, whether takeover protection increases or decreases a firm's disclosure still remains an ambiguous issue.

In this paper, we focus on the effect of state antitakeover laws on voluntary disclosure, because cross-state variation in antitakeover legislation allows us to operationalize the theoretical construct of takeover protection. We employ a self-selection model to correct for the endogeneity of firms' state-of-incorporation decision. Using the disclosure rankings developed by the AIMR as our proxy for voluntary disclosure and controlling for both financial and governance factors that are likely to affect disclosure quality, we find that firms incorporated in states with more antitakeover statutes have significantly higher analyst rankings of disclosure and greater market liquidity than firms governed by fewer antitakeover statutes. The results remain robust to a battery of additional tests, including a refined 2-stage methodology that directly endogenizes a firm's state-of-incorporation decision based on a state's antitakeover laws. In addition, we do not find evidence that the effect of antitakeover statutes on disclosure decreases with the proprietary costs of disclosure, suggesting that the disclosure effect of the statutes is likely to be driven more by managerial self-interest than by shareholder demand. Finally, we find that the effect of the statutes on disclosure becomes increasingly positive as firm-level antitakeover provisions increase.

In addition to confirming the role of opaque disclosure in the market for corporate control (Edlin and Stiglitz (1995)), this paper provides additional insights into the roles of corporate governance in affecting voluntary disclosure activity. In contrast to prior studies (Ajinkya et al. (2005), Karamanou and Vafeas (2005)) that generally find a positive association between strong governance and voluntary disclosure, we find that takeover protection, as a type of weak governance, is positively associated with voluntary disclosure activity. Given that severe market meltdowns often follow the announcements of poor disclosures, regulators and legislators need to be cautious in reducing takeover protection before they have fully considered the costs and benefits.

Appendix. Additional Disclosure Analyses

In this Appendix, we perform several additional tests of the effect of antitakeover statutes on voluntary disclosure and present the results in Tables A1 and A2. First, following prior studies (Sengupta (1998), Nagar et al. (2003)), we test the association between the raw AIMR disclosure ratings of total disclosure (as an alternate measure of disclosure) and antitakeover statutes, which yield essentially unchanged results. We also disaggregate *TotalDisc* into annual disclosure ranking (*AnnualDisc*), other disclosure ranking (*OtherDisc*), and investor relations ranking (*RelationDisc*), and we find that *StateLawIndex* remains positively associated with all three component rankings for out-of-state incorporating firms. Second, we include managerial ownership (*CEOOwn%*), the number of board meetings (*BoardMeetings*), duality of CEO/chairman (*Duality*), and earnings

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

TABLE A1

The Effect of State Antitakeover Statutes on the Components of Total Disclosure and the Raw Score of Total Disclosure

The columns under "*HomeState* = 1" show the 2nd-stage regression results of sample firms that are incorporated in-state during the period 1987–1995. The columns under "*HomeState* = 0" show the 2nd-stage regression results of sample firms that are incorporated out-of-state during the period 1987–1995. The dependent variable *AnnualDisc* for columns 1 and 2 is the percentile ranks of the AIMR ratings of each firm's annual report disclosure; the dependent variable *OtherDisc* for columns 3 and 4 is the percentile ranks of the AIMR ratings of each firm's other publications disclosure; the dependent variable *RelationDisc* for columns 5 and 6 is the percentile ranks of the AIMR ratings of each firm's investor relations activities; and the dependent variable *RawScore* for columns 7 and 8 is the raw AIMR ratings of each firm's total disclosure. *StateLawIndex* is the antitakeover index in year *t* measured as the number of state antitakeover laws (i.e., CSA statute, FP statute, BC statute, PPE statute, constituencies statute, and recapture statute) in the state where the firm is incorporated. See Table 3 for other variable definitions. All regressions include home state location, industry, and year fixed effects. For brevity, the coefficients on these dummy variables are not presented. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively, for 2-tailed tests. *Z*-statistics using standard errors clustered by states of incorporation are reported in parentheses.

		AnnualDisc		*OtherDisc*		*RelationDisc*		*RawScore*	
		1	2	3	4	5	6	7	8
		HomeState							
Variable	Exp. Sign	1	0	1	0	1	0	1	0
Intercept		−0.001	−0.945***	0.383	−0.992***	0.331	−0.698***	53.062***	21.775***
		(−0.00)	(−4.50)	(0.80)	(−6.86)	(0.91)	(−6.11)	(5.65)	(3.49)
StateLawIndex	?	0.011	0.055**	−0.002	0.047**	−0.003	0.042***	0.762*	1.674***
		(0.46)	(2.66)	(−0.11)	(2.37)	(−0.14)	(3.52)	(1.92)	(3.30)
Log(FirmSize)	+	0.036	0.081***	−0.006	0.079***	0.001	0.076***	0.302	2.086***
		(1.47)	(3.77)	(−0.21)	(6.11)	(0.02)	(5.92)	(0.36)	(4.79)
FinPerf	+	−0.034	0.212	−0.183	−0.072	0.266	0.147	13.853	11.746
		(−0.07)	(1.33)	(−0.59)	(−0.34)	(0.63)	(0.99)	(1.32)	(1.63)
MktReturn	+	0.053	0.070*	−0.027	0.080***	0.068	0.104***	0.402	1.102*
		(1.05)	(1.97)	(−0.52)	(5.34)	(1.40)	(3.06)	(0.33)	(1.77)
Leverage	?	0.057	−0.085	0.104	0.033	0.089	0.080	2.157	−1.864
		(0.36)	(−0.82)	(0.51)	(0.30)	(0.52)	(1.24)	(0.42)	(−0.55)
Std(Return)	?	−0.166	−0.035	−0.189	0.106**	0.278	0.043	9.947*	−1.479
		(−0.48)	(−0.86)	(−0.84)	(2.37)	(1.67)	(0.64)	(2.01)	(−1.04)
MB	?	0.031	0.030	−0.036	0.037**	−0.068	0.065***	−1.681	0.321
		(0.68)	(1.60)	(−0.61)	(2.59)	(−1.38)	(3.97)	(−1.35)	(1.08)
R&D%	?	1.362	2.285***	1.964	0.691	2.439***	0.299	72.484***	33.466*
		(1.20)	(5.90)	(1.43)	(1.59)	(3.10)	(0.91)	(4.04)	(2.08)
AdvExp%	?	−0.647	−0.120	0.388	0.450	−1.148	0.657**	−24.812	14.978
		(−1.34)	(−0.39)	(0.53)	(1.17)	(−1.69)	(2.40)	(−1.28)	(1.41)
PP&E%	?	0.374	0.109	0.285	0.173*	0.314	0.033	7.617	1.448
		(1.39)	(0.93)	(1.11)	(1.77)	(1.65)	(0.23)	(1.16)	(0.40)
DepExp%	?	−2.599	−0.776	−2.726	−0.922	−1.535	−1.795**	−75.529	−29.109
		(−1.07)	(−1.21)	(−1.28)	(−1.71)	(−0.96)	(−2.33)	(−1.50)	(−1.46)
CorrEarnRet	?	−0.044	−0.051*	−0.042	−0.057	−0.099	−0.081**	−2.803	−2.095
		(−0.68)	(−1.77)	(−0.57)	(−1.24)	(−1.44)	(−2.32)	(−1.62)	(−1.57)
Financing	?	−0.035	0.025	−0.034	0.020	−0.036	0.024	−0.177	0.544
		(−1.47)	(1.59)	(−1.03)	(1.71)	(−1.55)	(1.41)	(−0.28)	(0.91)
FirmGovIndex	?	0.022*	0.015***	0.010	0.013**	0.021**	0.017***	0.488	0.586***
		(1.88)	(2.98)	(0.62)	(2.71)	(2.43)	(4.17)	(1.46)	(3.25)
TAconstraint	−	0.219	−0.096	−0.023	−0.117**	−0.597*	−0.057	−1.035	−3.149*
		(0.61)	(−1.55)	(−0.05)	(−2.17)	(−1.71)	(−1.27)	(−0.12)	(−1.93)
$InvMills_1$	?	0.142**		0.026		0.182***		4.985**	
		(2.10)		(0.29)		(3.04)		(2.42)	
$InvMills_0$	?		−0.079		−0.221***		−0.075		−5.300***
			(−1.58)		(−5.89)		(−1.38)		(−2.90)
Industry fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Location fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size		526	1,327	526	1,327	526	1,337	526	1,324
R^2		0.470	0.237	0.456	0.232	0.445	0.252	0.759	0.615

TABLE A2

Other Robustness Tests

The columns under "*HomeState* = 1" show the 2nd-stage regression results of sample firms that are incorporated in-state during the period 1987–1995. The columns under "*HomeState* = 0" show the 2nd-stage regression results of sample firms that are incorporated out-of-state during the period 1987–1995. In all regressions, the dependent variable *TotalDisc* is the percentile rank of the AIMR ratings of firm *i*'s total voluntary disclosure in year *t*. *StateLawIndex* is the antitakeover index in year *t* measured as the number of state antitakeover laws (i.e., CSA statute, FP statute, BC statute, PPE statute, constituencies statute, and recapture statute) in the state where the firm is incorporated. See Table 3 for other variable definitions. All regressions include home state location, industry, and year fixed effects. For brevity, the coefficients on these dummy variables are not presented. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively, for 2-tailed tests. *Z*-statistics using standard errors clustered by states of incorporation are reported in parentheses.

		Controlling for Other Governance Measures		Controlling for Earnings Quality		Including Financial and Utility Firms	
		1	2	3	4	5	6
		HomeState					
Variable	Exp. Sign	1	0	1	0	1	0
Intercept		0.523 (1.19)	−0.898*** (−7.89)	0.166 (0.48)	−1.083*** (−6.87)	−0.118 (−0.59)	−0.994*** (−6.32)
StateLawIndex	?	−0.010 (−0.53)	0.052*** (3.44)	−0.004 (−0.26)	0.051*** (3.27)	−0.022 (−1.68)	0.037** (2.37)
Log(FirmSize)	+	0.013 (0.31)	0.090*** (5.43)	0.010 (0.36)	0.085*** (4.75)	0.052** (2.16)	0.087*** (6.64)
FinPerf	+	0.037 (0.09)	0.296* (1.82)	0.296 (0.69)	0.302 (1.70)	0.647 (1.64)	0.311** (2.30)
MktReturn	+	−0.022 (−0.50)	0.117*** (4.11)	0.015 (0.32)	0.093*** (4.12)	0.023 (0.70)	0.078*** (4.92)
Leverage	?	0.072 (0.34)	0.161 (1.42)	0.169 (0.93)	0.050 (0.49)	0.200 (1.26)	−0.165 (−1.67)
Std(Return)	?	−0.042 (−0.13)	0.012 (0.23)	−0.015 (−0.06)	−0.014 (−0.30)	0.075 (0.38)	−0.081** (−2.14)
MB	?	−0.078 (−1.37)	0.034* (1.95)	−0.058 (−1.05)	0.040*** (3.29)	−0.044 (−1.19)	0.029** (2.47)
R&D%	?	4.471*** (4.84)	2.106*** (4.16)	2.261*** (3.37)	0.994** (2.56)	0.708 (1.02)	0.822** (2.21)
AdvExp%	?	−1.007* (−1.99)	0.145 (0.45)	−0.673 (−1.35)	0.428 (1.12)	−0.397 (−0.76)	0.443 (1.24)
PP&E%	?	0.530 (1.41)	0.197 (1.45)	0.576** (2.34)	0.086 (0.62)	0.385* (1.79)	0.053 (0.46)
DepExp%	?	−4.173 (−1.54)	−1.110 (−1.19)	−5.187** (−2.40)	−1.265* (−1.86)	−2.381 (−1.50)	−0.635 (−1.07)
CorrEarnRet	?	−0.065 (−0.76)	−0.056* (−1.84)	−0.104* (−1.89)	−0.052 (−1.49)	−0.053 (−1.11)	−0.089** (−2.77)
Financing	?	−0.019 (−0.72)	0.043*** (4.33)	−0.033 (−1.26)	0.028* (1.74)	−0.021 (−0.99)	0.018* (1.92)
FirmGovIndex	?	0.020 (1.16)	0.018** (2.72)	0.018 (1.34)	0.018*** (3.73)	0.016 (1.61)	0.019*** (5.10)
TAconstraint	—	−0.366 (−0.92)	−0.098 (−1.69)	−0.172 (−0.41)	−0.092* (−1.80)	0.186 (1.07)	−0.068 (−1.35)
$InvMills_1$	?	0.137 (1.58)		0.143** (2.13)		0.082 (1.66)	
$InvMills_0$	?		−0.028 (−0.77)		−0.107* (−2.05)		−0.058** (−2.54)
CEOOwn%	?	0.826 (0.84)	−1.014*** (−2.90)				
BoardMeetings	?	−0.023* (−1.74)	−0.014*** (−3.15)				
Duality	—	−0.157** (−2.25)	−0.032*** (−2.88)				
AbnormalAccr	?			0.034 (0.37)	−0.020 (−1.12)		

(continued on next page)

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

TABLE A2 (continued)
Other Robustness Tests

		Controlling for Other Governance Measures		Controlling for Earnings Quality		Including Financial and Utility Firms	
		1	2	3	4	5	6
		HomeState					
Variable	Exp. Sign	1	0	1	0	1	0
Industry fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Location fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Sample size		468	1,245	562	1,406	1,037	1,897
R^2		0.540	0.317	0.479	0.276	0.313	0.261

quality (*AbnormalAccr*) in the disclosure equation. Prior studies (e.g., Ajinkya et al. (2005), Francis, Nanda, and Olsson (2008), Karamanou and Vafeas (2005)) suggest that these governance characteristics are associated with voluntary disclosure. The positive association between state antitakeover statutes and voluntary disclosure remain positive after controlling for these factors. Finally, following Giroud and Mueller (2010), we also include financial services and utility firms (SIC codes 6000–6500 and 4400–4999) in the sample, and still find a positive association between *StateLawIndex* and *TotalDisc* for firms that incorporate out-of-state.

References

Ajinkya, B.; S. Bhojraj; and P. Sengupta. "The Association between Outside Directors, Institutional Investors and the Properties of Management Earnings Forecasts." *Journal of Accounting Research*, 43 (2005), 343–376.

Ali, A.; T.-Y. Chen; and S. Radhakrishnan. "Corporate Disclosures by Family Firms." *Journal of Accounting and Economics,* 44 (2007), 238–286.

Amihud, Y. "Illiquidity and Stock Returns: Cross-Section and Time-Series Effects." *Journal of Financial Markets*, 5 (2002), 31–56.

Armstrong, C.; K. Balakrishnan; and D. Cohen. "Corporate Governance and the Information Environment: Evidence from State Antitakeover Laws." *Journal of Accounting and Economics*, 53 (2012), 185–204.

Bebchuk, L., and A. Cohen. "Firms' Decisions Where to Incorporate." *Journal of Law and Economics,* 46 (2003), 383–425.

Bebchuk, L., and A. Cohen. "The Costs of Entrenched Boards." *Journal of Financial Economics*, 78 (2005), 409–433.

Bebchuk, L.; A. Cohen; and A. Ferrell. "What Matters in Corporate Governance?" *Review of Financial Studies*, 22 (2009), 783–827.

Bebchuk, L., and J. Fried. *Pay without Performance: The Unfulfilled Promise of Executive Compensation*. Cambridge: Harvard University Press (2006).

Bens, D., and S. Monahan. "Disclosure Quality and the Excess Value of Diversification." *Journal of Accounting Research*, 42 (2004), 691–730.

Berger, P., and R. Hann. "Segment Disclosures, Proprietary Costs, and the Market for Corporate Control." Working Paper, University of Chicago (2002).

Berger, P., and R. Hann. "Segment Profitability and the Proprietary and Agency Costs of Disclosure." *Accounting Review*, 82 (2007), 869–906.

Bertrand, M., and S. Mullainathan. "Enjoying the Quiet Life? Managerial Behavior following Anti-Takeover Legislation." *Journal of Political Economy*, 111 (2003), 1042–1075.

Botosan, C., and M. Plumlee. "A Re-Examination of Disclosure Level and the Expected Cost of Equity Capital." *Journal of Accounting Research*, 40 (2002), 21–40.

Botosan, C., and M. Stanford. "Managers' Motives to Withhold Segment Disclosures and the Effect of SFAS No. 131 on Analysts' Information Environment." *Accounting Review*, 80 (2005), 751–771.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

Brennan, M.; T. Chordia; and A. Subrahmanyam. "Alternative Factor Specifications, Security Characteristics, and the Cross-Section of Expected Stock Returns." *Journal of Financial Economics*, 49 (1998), 345–373.
Brown, S.; S. Hillegeist; and K. Lo. "Conference Calls and Information Asymmetry." *Journal of Accounting and Economics*, 37 (2004), 343–366.
Bushee, B.; D. Matsumoto; and G. Miller. "Open versus Closed Conference Calls: The Determinants and Effects of Broadening Access to Disclosure." *Journal of Accounting and Economics,* 34 (2003), 149–180.
Bushee, B., and C. Noe. "Corporate Disclosure Practices, Institutional Investors, and Stock Return Volatility." *Journal of Accounting Research*, 38 (2000), 171–202.
Bushman, R.; Q. Chen; E. Engel; and A. Smith. "Financial Accounting Information, Organizational Complexity and Corporate Governance Systems." *Journal of Accounting and Economics*, 37 (2004), 167–201.
Cheng, S., and R. Indjejikian. "The Market for Corporate Control and CEO Compensation: Complements or Substitutes." *Contemporary Accounting Research*, 26 (2009), 701–728.
Cheng, S.; V. Nagar; and M. Rajan. "Identifying Control Motives in Managerial Ownership: Evidence from Antitakeover Regulation." *Review of Financial Studies*, 18 (2005), 637–672.
Chordia, T.; A. Subrahmanyam; and V. Anshuman. "Trading Activity and Expected Stock Returns." *Journal of Financial Economics*, 59 (2001), 3–32.
Comment, R., and G. Schwert. "Poison or Placebo? Evidence on the Deterrence and Wealth Effects of Modern Antitakeover Measures." *Journal of Financial Economics*, 39 (1995), 3–43.
Cremers, K., and V. Nair. "Governance Mechanisms and Equity Prices." *Journal of Finance*, 60 (2005), 2859–2894.
Daines, R. "Does Delaware Law Improve Firm Value?" *Journal of Financial Economics*, 62 (2001), 525–558.
Edlin, A., and J. Stiglitz. "Discouraging Rivals: Managerial Rent-Seeking and Economic Inefficiencies." *American Economic Review*, 85 (1995), 1301–1312.
Fama, E. "Agency Problem and the Theory of the Firm." *Journal of Political Economy*, 88 (1980), 288–308.
Fama, E., and M. Jensen. "Separation of Ownership and Control." *Journal of Law and Economics*, 26 (1983), 301–325.
Francis, B.; I. Hasan; K. John; and M. Waisman. "The Effect of State Antitakeover Laws on the Firm's Bondholders." *Journal of Financial Economics*, 96 (2010), 127–154.
Francis, J.; D. Nanda; and P. Olsson. "Voluntary Disclosure, Information Quality, and Costs of Capital." *Journal of Accounting Research*, 46 (2008), 53–99.
Fu, H., and M. Liu. "How Does Takeover Vulnerability Affect Management Earnings Forecasts?" Working Paper, Texas Christian University (2007).
Gartman, G. *State Takeover Laws*. Washington, DC: Investor Responsibility Research Center (2000).
Garvey, G., and G. Hanka. "Capital Structure and Corporate Control: The Effect of Antitakeover Statues on Firm Leverage." *Journal of Finance*, 54 (1999), 519–546.
Giroud, X., and H. Mueller. "Does Corporate Governance Matter in Competitive Industries?" *Journal of Financial Economics*, 95 (2009), 312–331.
Gompers, P.; J. Ishii; and A. Metrick. "Corporate Governance and Equity Prices." *Quarterly Journal of Economics*, 118 (2003), 107–155.
Griliches, Z. *R&D, Education, and Productivity: A Retrospective*. Cambridge: Harvard University Press (2000).
Hall, B.; A. Jaffe; and M. Trajtenberg. "Market Value and Patent Citations: A First Look." Working Paper, National Bureau of Economic Research (2001).
Harris, M. "The Association between Competition and Managers' Business Segment Reporting Decision." *Journal of Accounting Research*, 36 (1998), 111–128.
Healy, P.; A. Hutton; and K. Palepu. "Stock Performance and Intermediation Changes Surrounding Sustained Increases in Disclosure." *Contemporary Accounting Research*, 16 (1999), 485–520.
Healy, P., and K. Palepu. "Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature." *Journal of Accounting and Economics*, 31 (2001), 405–440.
Healy, P., and K. Palepu. "The Fall of Enron." *Journal of Economic Perspectives*, 17 (2003), 3–26.
Heckman, J. "The Common Structure of Statistical Models of Truncation, Sample Selection and Limited Dependent Variables and a Simple Estimator for Such Models." *Annals of Economic and Social Measurement*, 5 (1976), 475–492.
Hilary, G. "Organized Labor and Information Asymmetry in the Financial Markets." *Review of Accounting Studies*, 11 (2006), 525–548.
Hope, O., and W. Thomas. "Managerial Empire Building and Firm Disclosure." *Journal of Accounting Research*, 46 (2008), 591–625.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press

Huang, P., and Y. Zhang. "Does Enhanced Disclosure Really Reduce Agency Costs? Evidence from the Diversion of Corporate Resources." *Accounting Review*, 87 (2012), 199–229.
Jung, M. "Investor Overlap and Diffusion of Disclosure Practices." *Review of Accounting Studies*, 18 (2013), 167–206.
Kaplan, S., and L. Zingales. "Do Investment-Cash Flow Sensitivities Provide Useful Measures of Financing Constraints?" *Quarterly Journal of Economics*, 112 (1997), 169–216.
Karamanou, I., and N. Vafeas. "The Association between Corporate Boards, Audit Committees, and Management Earnings Forecasts: An Empirical Analysis." *Journal of Accounting Research*, 43 (2005), 453–486.
Karpoff, J., and P. Malatesta. "The Wealth Effects of Second Generation State Takeover Legislation." *Journal of Financial Economics*, 20 (1989), 291–322.
Khurana, I.; R. Pereira; and X. Martin. "Firm Growth and Disclosure: An Empirical Analysis." *Journal of Financial and Quantitative Analysis*, 41 (2006), 357–380.
Kutner, M.; C. Nachtsheim; and J. Neter. *Applied Linear Regression Models*, 4th ed. Boston: McGraw-Hill Irwin (2004).
Kyle, A. "Continuous Auctions and Insider Trading." *Econometrica*, 53 (1985), 1315–1335.
Lang, M., and R. Lundholm. "Cross-Sectional Determinants of Analyst Ratings of Corporate Disclosures." *Journal of Accounting Research*, 31 (1993), 246–271.
Lang, M., and R. Lundholm. "Corporate Disclosure Policy and Analyst Behavior." *Accounting Review*, 71 (1996), 467–492.
Lesmond, D. "Liquidity of Emerging Markets." *Journal of Financial Economics*, 77 (2005), 411–452.
Leuz, C., and R. Verrecchia. "The Economic Consequences of Increased Disclosure." *Journal of Accounting Research*, 38 (2000), 91–124.
Lundholm, R., and L. Myers. "Bringing the Future Forward: The Effect of Disclosure on the Returns-Earnings Relation." *Journal of Accounting Research*, 40 (2002), 809–839.
Mansi, S.; W. Maxwell; and J. Wald. "Creditor Protection Laws and the Cost of Debt." *Journal of Law and Economics*, 52 (2010), 701–726.
Masulis, R.; C. Wang; and F. Xie. "Corporate Governance and Acquirer Returns." *Journal of Finance*, 62 (2007), 1851–1889.
Nagar, V.; D. Nanda; and P. Wysocki. "Discretionary Disclosure and Stock-Based Incentives." *Journal of Accounting and Economics*, 34 (2003), 283–309.
Peterson, C., and N. Hawker. "Does Corporate Law Matter? Legal Capital Restrictions on Stock Distributions." *Akron Law Review*, 31 (1997), 175–228.
Puhani, P. "The Heckman Correction for Sample Selection and Its Critique." *Journal of Economic Survey*, 14 (2000), 53–68.
Qi, Y., and J. Wald. "State Laws and Debt Covenants." *Journal of Law and Economics*, 51 (2008), 179–207.
Rauh, J. "Own Company Stock in Defined Contribution Pension Plans: A Takeover Defense." *Journal of Financial Economics*, 81 (2006), 379–410.
Romano, R. "The State Competition Debate in Corporate Law." *Cardozo Law Review*, 8 (1987), 709–757.
Scharfstein, D. "The Disciplinary Role of Takeovers." *Review of Economic Studies*, 55 (1988), 185–199.
Schwert, G. "Hostility in Takeover: In the Eyes of the Beholder?" *Journal of Finance*, 55 (2000), 2599–2640.
Scott, T. "Incentives and Disincentives for Financial Disclosure: Voluntary Disclosure of Defined Benefit Pensions Plan Information by Canadian Firms." *Accounting Review*, 69 (1994), 26–43.
Sengupta, P. "Corporate Disclosure Quality and the Cost of Debt." *Accounting Review*, 73 (1998), 459–474.
Shleifer, A., and R. Vishny. "Management Entrenchment: The Case of Manager-Specific Investments." *Journal of Financial Economics*, 25 (1989), 123–140.
Verrecchia, R. "Discretionary Disclosure." *Journal of Accounting and Economics*, 5 (1983), 179–194.
Wagenhofer, A. "Voluntary Disclosure with a Strategic Opponent." *Journal of Accounting and Economics*, 12 (1990), 341–363.
Wald, J., and M. Long. "The Effect of State Laws on Capital Structure." *Journal of Financial Economics*, 83 (2007), 297–319.
Yu, F. "Accounting Transparency and the Term Structure of Credit Spreads." *Journal of Financial Economics*, 75 (2005), 223–242.
Zhou, X. "Understanding the Determinants of Managerial Ownership and the Link between Ownership and Performance: Comment." *Journal of Financial Economics*, 62 (2001), 559–571.

https://doi.org/10.1017/S0022109013000124 Published online by Cambridge University Press