

Trade Secrets Protection and Antitakeover Provisions

Aiyesha Dey¹ and Joshua T. White*²

¹Harvard Business School, Harvard University

²Owen Graduate School of Management, Vanderbilt University

September 30, 2018

Abstract

We examine whether and why managers strengthen antitakeover provisions when facing an increased threat of being acquired. Our tests exploit the Inevitable Disclosure Doctrine (IDD), which exogenously decreases knowledge worker mobility, thereby increasing firms' likelihood of being acquired. Managers respond by increasing takeover defenses, especially when its employees have greater ex-ante mobility. Cross-sectional tests indicate that managers increase takeover defenses to protect innovation rather than for private benefits. Firms increasing takeover defenses enjoy higher long-run innovation and reduced takeover likelihood. Our results provide evidence of a setting where managers upward adjust antitakeover provisions for reasons consistent with shareholder value maximization rather than entrenchment.

Keywords: Antitakeover provisions, takeover defenses, innovation, trade secrets, intellectual property.

JEL Classification Number: G34, G38, K22, L14

*Corresponding author: Vanderbilt University, Owen Graduate School of Management, 401 21st Ave S, Suite 322, Nashville, TN 37203. Tel: +1-615-343-5880; Email: josh.white@owen.vanderbilt.edu. We gratefully acknowledge the excellent research assistance provided by Daniel Schwam. We are grateful to Srikant Datar, Stu Gillan, Peter Haslag, Krishna Palepu, Berk Sensoy, Suraj Srinivasan, Charles Wang, and seminar participants at the University of Chicago-Booth, Harvard Business School, London Business School, University of Rochester-Simon, and Vanderbilt University-Owen for helpful comments and discussions. We thank Robert Bird and John Knopf for sharing data on state-level enforcement of covenants not to compete. All errors are our own. This research was supported by the Financial Markets Research Center at Vanderbilt University.

1 Introduction

The relation between antitakeover provisions (ATPs) and shareholder wealth has generated considerable debate in the academic literature. Numerous studies find that ATPs reduce firm value by increasing agency costs and shielding managers from the market for corporate control (Gompers et al., 2003; Bebchuk et al., 2008).¹ Others argue that active takeover markets reduce managerial incentives to devote effort and human capital in long-term and hard-to-value investments, such as research and development (Stein, 1988; Shleifer and Summers, 1988). Thus, ATPs might enhance shareholder value for certain firms by protecting them from takeover activity and retaining managerial incentives for investment (Becker-Blease, 2011).

Despite the voluminous literature on this topic, no consensus exists on why managers choose to increase ATPs, and their overall effects on shareholder wealth (Stráska and Waller, 2014). Moreover, there is also a lack of resolution on whether and which ATPs are effective in deterring takeovers, and how managers choose to react to changes in takeover threats (e.g., Klausner, 2013; Catan and Kahan, 2016). While the conflicting evidence likely stems from the endogenous nature of ATPs, it is also possible that the findings are mixed because the benefits of ATPs vary across firms and the circumstances of their use (Stráska and Waller, 2010; Johnson et al., 2015).

We consider a setting where firms experience a plausibly exogenous shock to the threat of takeovers to examine managerial response via ATPs. Our study examines adoption of the Inevitable Disclosure Doctrine (IDD) by U.S. state courts, which prevents employees who have knowledge of the firm’s trade secrets from working for a rival firm.² The restriction applies to both in-state and out-of-state rivals, and to employees with and without nondisclosure or noncompete agreements. Thus, IDD recognition significantly reduces the mobility of knowledge workers in these states.³

Under IDD, labor mobility restrictions can increase takeover risk for two reasons. First, IDD precludes competitors from luring away employees in order to access trade secrets or skilled human capital. This restriction increases the possibility that competitors will pursue other means of

¹For instance, studies link certain ATPs or overall levels of ATPs with lower stock returns (e.g., Cremers et al., 2008), firm value (e.g., Bebchuk and Cohen, 2005; Faleye, 2007; Cremers and Ferrell, 2014), and operating performance (e.g., Core et al., 2006; Giroud and Mueller, 2010). Stráska and Waller (2014) provide a survey of this literature.

²Trade secrets include all types of sensitive information (e.g., formulas, processes, product designs, financial information, and customer information) that provide a firm with competitive advantage over its rivals.

³Klasa et al. (2018) report that none of the following affect the decision of state courts to adopt IDD: economic or political conditions, worker characteristics, labor laws, and adoption of the Uniform Trade Secrets Act.

obtaining these intellectual properties, such as acquiring the firm (Tate and Yang, 2016). Second, because IDD lowers the risk that employees will leave and transfer proprietary knowledge to a firm’s competitors, managers might increase investment in their organizational capital.⁴ Potential increases in organizational capital, as well as reductions in the mobility of knowledge workers, makes a firm more attractive to its competitors, thus adding to its likelihood of being a takeover target. Indeed, Chen et al. (2017) document that the likelihood of being acquired increases for firms headquartered in states that recognize IDD versus those that do not.⁵

We first ask whether managers increase ATPs to combat this elevated takeover threat after IDD. To answer this question, we obtain data on state- and firm-level ATPs from Institutional Shareholder Services (ISS). We conjecture that among the 24 total ATPs, eleven are directly related to strategies firms are likely to employ to combat takeover attempts. These provisions make the target less attractive to the acquirer (poison pills, pension parachutes), the acquisition more expensive (fair price, silver parachutes), or make it harder, longer, or costlier for the acquirer to gain control over the target (directors duties, unequal voting, supermajority, written consent, special meeting, blank check and classified boards). We collectively refer to this group of provisions as *Takeover Defenses* and expect managers to increase this group of provisions after IDD.

Using a difference-in-differences framework over 1990 to 2011, we find that firms headquartered in states adopting the IDD significantly increase takeover defenses as compared to firms in states that did not adopt the IDD.⁶ Examining a time trend of the changes in the years before and after IDD recognition indicates that significant changes in the takeover defense provisions take place in years just after IDD adoption. Cross-sectional tests reveal that the treatment effects on takeover defenses are stronger for firms with greater ex-ante employee mobility, proxied by the number of firms in the same industry and headquarter state prior to IDD adoption (Chen et al., 2017) and an index of the enforceability of covenants not to compete in each state (Bird and Knopf, 2015).⁷

⁴Organizational capital is defined as the body of knowledge and business processes and systems leading to competitive edge and operational efficiency (Li et al., 2017).

⁵There are two reasons why the IDD setting is appealing to examine our research questions. First, the staggered adoption of the IDD by U.S. states allows us to identify a causal effect of increased takeover threat on the use of ATPs in a difference-in-difference framework (Klasa et al., 2018). Second, state courts adopted the IDD solely to protect trade secrets of a firm in their jurisdiction and did not intend to promote takeover activity or induce changes in firms’ governance structures. Thus, any potential effects on these factors are likely to be unintended consequences of court decisions.

⁶Our results are robust to employing an entropy-balanced sample where we balance the first three moments (mean, variance and skewness) of the treatment (IDD) and control (non-IDD) firms following Hainmueller (2012).

⁷For comparison, we repeat our analyses for the aggregate G-index, E-index, and O-index (section 5.1). The G-index

We next examine which specific ATPs managers increase after IDD. We expect increases in the individual provisions within *Takeover Defenses* group after IDD. However, we note that while poison pills are a strong defense mechanism (and as such, we classify them as *Takeover Defenses*), it is not clear whether firms will necessarily increase this provision after IDD. Coates (2000) and Catan and Kahan (2016) emphasize that poison pills do not require shareholder approval and can be put in place on short notice. Along similar lines, we do not expect firms to increase other ATPs after IDD, such as opting into state laws, as Catan and Kahan (2016) assert that they do not improve a target’s ability to resist a takeover attempt.

We find significant increases in seven provisions after IDD: written consent, classified boards, blank check, directors’ duties, silver parachutes, pension parachutes, and unequal voting. Firms in IDD states do not increase special meeting, supermajority, or poison pill provisions. Firms in IDD states also do not increase adoption of provisions that reflect executive or board compensation, are neutral with respect to defending takeovers, or those associated with state of incorporation laws.

Next, we investigate whether increases in takeover defenses following the IDD are driven by managers’ intention to protect innovation capital (value increasing) versus protecting managerial entrenchment (value decreasing). We posit that firms, particularly those with high innovative activity, will increase their takeover defenses to protect innovation incentives since many of their products are complex or in the developmental stage. A premature takeover could reduce long-term shareholder wealth by selling the firm before the upside of innovative investments are realized at a later date. Enhanced takeover protection also allows managers to focus on longer term and harder to measure investments. In turn, this reduces the incentive for managers to make myopic decisions, such as boosting near-term earnings at the detriment of long-term investments (Stein, 1988). It also allows for continued incentives of long-term implicit contracts with managers (Knoeber, 1986; Stráska and Waller, 2014).

Alternatively, boards and senior managers could increase takeover defenses purely for their private benefits. Empirical evidence reveals that takeovers often result in the replacement of target

was developed by Gompers et al. (2003) and includes all 24 firm and state ATPs. The E-index includes six out of the 24 provisions in G-index that are related to managerial entrenchment (Bebchuk et al., 2008), and the O-index includes all provisions in G-index that are not in the E-index (Karpoff et al., 2017). We do not find any significant effects for these indices after IDD. The lack of results when using aggregate indices could be because these indices include provisions that are both relevant and irrelevant for takeover defenses and thus potentially mask the actual changes firms make to deter takeovers (e.g., Klausner, 2013).

management and directors (Li, 2013). Thus, responding to IDD by increasing takeover defenses could be motivated by managers' and boards' desires to preserve their jobs. Thus, entrenched managers might have a different motivation for protecting the firm through higher levels of takeover defenses due to self-serving interests rather than protection of shareholder value (e.g., Bertrand and Mullainathan, 2003).

We conduct several cross-sectional analyses in an attempt to tease out these alternative motivations behind managers' decisions to increase takeover defenses. Our evidence points to the protection on innovation incentives. We find that firms with more knowledge workers and higher levels of research and development (R&D) intensity and intangible asset intensity are more likely to increase takeover defenses. In contrast, we find no difference in the change in these provisions for firms with higher levels of managerial entrenchment, proxied by CEO tenure, the lack of a blockholder, and low CEO pay-performance sensitivity. These results support the notion that firms where innovation and new product development are key will protect their innovation capital by instituting provisions that deter takeover attempts. It also implies that ATPs are increased for value-increasing, not value-destroying purposes.

To provide further insight into the shareholder value implications of increasing takeover defenses, we compare the long-run innovation output of firms that increase their takeover defenses after IDD to those that do not. Using measures of patent activity from Kogan et al. (2017), we find that firms increasing takeover defenses have greater number and higher quality patents in four out of the five years following IDD as compared to firms that did not increase takeover defenses. In additional tests we find evidence that firms that did not increase takeover defenses also had significantly lower trade secrets disclosures in two out of the five years following IDD.⁸ Finally, further analyses suggest that increases in *Takeover Defenses* are associated with a smaller probability of being acquired over the one to three years after IDD for firms that increase takeover defenses.

Our study faces the following challenge. As in any difference-in-differences setup, our conclusions rely on the assumption that any differences in firms' ATPs after the legal adoption of IDD are due to this event, and absent this change, the pre-treatment trends would continue. To this end, we

⁸Since trade secrets are unobservable, we follow Glaeser (2018) in counting of the number of times a firm mentions "trade secret" or "trade secrecy" in its annual SEC Form 10-K filing. The notion is that firms referencing trade secrets more frequently in their annual reports are likely to have more trade secrets. This approach surely introduces measurement error, but there is no reason to believe the error is systematically biased towards firms with changes in takeover defenses. Nevertheless, we interpret these results with caution.

provide tests that are consistent with the parallel trends assumption in the level of takeover defenses. However, it is still possible that omitted variables correlated with both the adoption of the IDD and post-treatment ATPs that are driving our results, thus confounding our interpretations. Given the stickiness of ATPs (Field and Karpoff, 2002), this result seems unlikely. Nevertheless, we mitigate this concern by including standard controls used in models on takeover provisions and takeover activity, firm fixed effects to control for time-invariant firm-level factors, and year fixed effects to control for any time trends.⁹ We also include controls for the economic and political conditions prevailing in a state as in Klasa et al. (2018), and include CEO ownership as a control based on the recommendation by Catan and Kahan (2016).

Subject to the above caveat, our study contributes in the following ways. First, we add to the literature on the impact of ATPs on shareholder value (e.g., Gompers et al., 2003). Our study suggests that ATPs are associated with greater long-run innovative activity for firms with greater proportion of knowledge workers and those with high research and development (R&D) expenses and intangible assets, and thus can be value enhancing for such firms. Contrary to a bulk of the literature, we do not find evidence that firms whose managers are more entrenched are more likely to increase takeover defenses following an increased takeover threat. We view our evidence as support for the notion that ATPs can be beneficial for shareholders in certain firms.

We complement and add to the studies examining the relation between ATPs and innovation activity (Atanassov, 2013; Becker-Blease, 2011; Bertrand and Mullainathan, 2003). For instance, Atanassov (2013) provides evidence that patent activity declines after certain state law provisions increase, and Bertrand and Mullainathan (2003) find that when managers are insulated from takeovers, white-collar wages increase and managers prefer to enjoy the quiet life. In contrast, Becker-Blease (2011) finds a positive correlation between the G-index and patent activity.¹⁰ We

⁹Repeating our analyses using firm and industry-year fixed effects yields similar results. We do not employ these in our main specification because several controls already capture industry-level variations (e.g., R&D).

¹⁰While our evidence supports the conclusions in Becker-Blease (2011), the two studies have important differences. First, we consider a setting where there is an exogenous shock to the threat of takeover which helps in a cleaner identification of managers' use of ATPs to combat this threat (Catan and Kahan, 2016). Becker-Blease does not examine how managers react to takeover likelihoods by increasing takeover defense provisions. Second, Becker-Blease relies on the G- and E-index and finds a positive association of these (and other combinations of provisions) with innovation. When examining the plausibly exogenous variation in takeover threat, we find that these broad indices fail to capture managerial actions to mitigate takeover threats. We also identify the specific provisions managers use given an exogenous shock, some of which differ from the cross-sectional correlations in Becker-Blease. Third, contrary to Becker-Blease, we find no evidence that managers opt into state-level provisions to combat increased takeover threat. Our result is consistent with assertions in Catan and Kahan (2016) that these statutes do not help deter takeovers.

exploit a setting where we can observe managers' responses in terms of firm-level ATPs to a plausibly exogenous shock to takeover threats, and how that choice relates to subsequent innovation output. Using exogenous variation in takeover threats also helps us circumvent some of the challenges that other studies face as discussed in Catan and Kahan (2016). In sum, our setting provides new information on the use of takeover defenses by managers and their relation to innovation.

Next, our evidence speaks to the literature examining the relation between ATPs and takeover activity (e.g., Comment and Schwert, 1995; Sokolyk, 2011; Karpoff et al., 2017; Cain et al., 2017). Unlike most of the literature, we show a potential causal link between an increased takeover threat and managerial use of individual ATPs. We complement existing studies by providing evidence on the specific takeover defenses managers choose to employ in the face of an increased takeover threat, and that these defenses are associated with reductions in the likelihood of being acquired.

Finally, we contribute to the studies that demonstrate various real effects of state adoptions of the IDD by reporting the cross-sectional differences in the increase of takeover and of innovative activity following the IDD (e.g., Ali et al., 2015; Chen et al., 2017; Contigiani et al., 2017; Li et al., 2017; Klasa et al., 2018). In particular, we complement the results in Contigiani et al. (2017), who show that, on average, innovation declines post-IDD for firms in Illinois as compared to other Midwestern states when Illinois adopted the IDD. Considering a broader set of states that adopt IDD versus those that do not, we find that managers of firms in IDD states that increase takeover defenses enjoy higher levels of innovation output in the period after IDD.

2 Empirical predictions

We first develop a conceptual framework for which ATPs that managers might increase following IDD. Next, conditional on firms enhancing ATPs after IDD, we develop cross-sectional predictions as to what types of firms are more likely to increase these provisions and their consequences for long-run innovation outcomes.

2.1 ATPs and IDD

The large number of studies that examine the relation between the ATPs and takeover deterrence use indices, such as the G-index and E-index, as summary measures for the extent

of takeover protection a firm has in place, as well as a measure of the overall corporate governance quality of a firm (e.g., Masulis et al., 2007; Cremers and Nair, 2005; Ferreira and Laux, 2007). The G-index (governance index) was formulated by Gompers et al. (2003), who combine 24 unique corporate governance provisions into an index where each provision is given equal weight.¹¹ The G-index is intended to proxy for the strength of shareholder rights in a firm.¹² Gompers et al. (2003) find a negative correlation between the G-index and firm value, as measured by Tobin's Q and stockholder returns during the 1990s. Bebchuk et al. (2008) utilize six of the 24 provisions in the G-index to create the E-index (entrenchment index), and show that these six provisions drive the correlation between the governance provisions and firm value.

Despite a wide acceptance and use of these indices, the body of research produced in the literature fails to provide robust evidence on the ability of these indices in preventing unsolicited takeovers (e.g., Comment and Schwert, 1995; Sokolyk, 2011; Karpoff et al., 2017).¹³ For the purposes of our study, we do not consider the G-index or E-index as clean proxies for actions managers might take to defend against takeovers. This is because these indices aggregate both powerful and weak provisions as summary measures of takeover protection and include state provisions that are not affected by IDD or provisions that have no relevance for takeover deterrence or that need not be enacted to fend off takeovers (Coates, 2000; Klausner, 2013; Catan and Kahan, 2016). Thus, instead of focusing on summary indices, we make predictions regarding specific ATPs that firms could potentially change following IDD.

¹¹While there are 28 charter, bylaw, other firm-level provisions and state takeover laws in total, once duplication between the firm level provisions and state laws are accounted for, we obtain 24 unique provisions.

¹²The G-index sums the existence of each of the governance provisions that restricts shareholder rights. A higher G-index is assumed to represent weaker shareholder rights, higher takeover protection and lower governance quality. However, this assumption is not without controversy. Several studies have also shown that high takeover defenses can also be consistent with strong governance and such firms can have higher value (e.g., Cen et al., 2015; Smith, 2015; Johnson et al., 2015).

¹³For instance, Comment and Schwert (1995) find that ATP measures have not systematically deterred takeovers during the 1980s, but instead increased the takeover premium to selling shareholders. Core et al. (2006) find that weak governance firms (those with high G-index) are taken over at about the same rate as strong governance firms. Sokolyk (2011) finds that the G-index is not significant in predicting a firm's risk of being acquired and that targets with high values of G-index are more likely to react with hostility to takeover bids than targets with low values of G-index. While Sokolyk finds that only a combination of classified boards and poison pills exhibits a strong takeover protection, Ambrose and Megginson (1992) show that blank-check preferred stock authorizations is the only takeover defense that is significantly (negatively) correlated with acquisition likelihood. The reasons offered by researchers for this lack of consistency across studies include the aggregation of all provisions in summary measures, the changing nature of takeovers from the 1980s to the 2000s, and the endogenous nature of the existence of such provisions and the likelihood of takeovers (Coates, 2000; Bebchuk and Cohen, 2005; Klausner, 2013). A recent study by Karpoff et al. (2017) uses instrumental variables to provide evidence that once this endogeneity is accounted for, the indices proxying for takeover defences (G-index, E-index and O-index, where the latter includes all provisions in G-index that are not in the E-index) do indeed lower the likelihood of acquisition.

We posit that managers who want to resist takeover attempts are likely to increase provisions that delay unsolicited takeovers and render the firm unattractive to corporate raiders. Among the firm level provisions, we consider the following provisions to be related to delaying takeovers: classified board, supermajority, blank check, limits to special meeting, limits to written consent, unequal voting, director duties, fair price, poison pills, pension parachute and silver parachute. Each of these provisions involve tactics that slow down acquirers.

Classified boards, supermajority, blank check, limits to special meetings and written consent, unequal voting, and directors' duties make it harder, lengthier and costlier for the acquirer to gain control over the target. Poison pills and pension parachutes make the target more unattractive to the acquirer by diluting the acquirers voting power and by preventing an acquirer from using the target's surplus cash in pension funds. Although, we note that given the ease with which poison pills can be adopted, firms may not increase this provision after IDD since they can trigger the pill once a hostile bid takes place (Catan and Kahan, 2016). Fair price and silver parachutes make the acquisition more expensive by limiting the range of prices a bidder can pay in two-tier offers and for requiring severance payments to a large number of lower level employees in the event of a change in control. Collectively we refer to these set of provisions as *Takeover Defenses*, and we hypothesize that firms are likely to increase this group of provisions in response to the IDD.

Alternatively, it is possible we will not observe any changes in the *Takeover Defenses* following the adoption of the IDD as these defenses are in the firm's charter and most require shareholder approval (except poison pills) to amend. Coates (2001) argues that while managers usually prefer more takeover defenses, institutional investors often want fewer, and the power struggle between the two typically results in no changes being approved and implemented. Other reasons, such as varying beliefs among shareholders on benefits of takeovers and the tendency to maintain status quo on defenses instituted in the firm's charter, also result in the stickiness of ATPs over time (Johnson et al., 2015). Furthermore, managers may not change any defenses given that the ability of ATPs to actually deter takeovers is not certain (Comment and Schwert, 1995; Catan and Kahan, 2016; Bates et al., 2008). Thus, whether (and which) ATPs firms change after IDD is an empirical question.

We do not expect firms to increase any of the other ATPs following IDD. These remaining provisions include opting into or out of *State Laws* (e.g., business combination laws, control share

laws and fair price laws), *Compensation* provisions (compensation plans and golden parachutes) and several provisions that are not related to takeovers (e.g., secret ballot, director indemnification contracts). For instance, given that many firms can adopt poison pills at any time, the existence of the *State Laws* are potentially moot and could offer no ability to protect against hostile acquirers (Catan and Kahan, 2016). The *Compensation* provisions include golden parachutes, which require severance payments for senior officers in the event of a change in control, and compensation plans, which allow any officers and directors with incentive plans to cash out options or accelerate payout of bonuses in case of a change in control. While these are useful to compensate officers once the change in control has occurred, neither of these are related to preventing takeovers.¹⁴ The remaining provisions (we refer to these as *Takeover Neutral*), which include director indemnification, director indemnification contracts, limits to amend bylaws, limits to amend charters, cumulative voting, secret ballot, and antigreenmail, are also unlikely to offer any protection to firms against hostile bidders and are unrelated to change in control events.

2.2 Cross-sectional analyses

2.2.1 Labor mobility

Our first cross-sectional analysis serves to validate the assertion that the increased threat of takeovers to acquire a firm’s intellectual capital after IDD results in firms’ increasing their takeover defenses. This increased takeover threat is likely to be higher in industries where there are more local rival firms and, thus, employees had a higher ex-ante ability to move from one firm to another pre-IDD. After IDD, competitors cannot lure away these employees, and thus may be more likely to takeover these firms instead. Thus, we expect firms whose employees have higher ex-ante mobility in the labor market to have greater increases in their ATPs post-IDD. We measure this ex-ante employee mobility in the labor market by using the number of firms in the same industry and state, because employees will have better employment mobility when there are a larger number of industry peer firms available in the local labor market (Deng and Gao, 2013; Gao et al., 2015).

The threat of takeovers is also likely to be higher for firms with ex ante weaker protections of

¹⁴We note that it is possible that managers may still increase the compensation provisions to preserve their pay in the event of a change in control. However, like poison pills, golden parachutes do not require shareholder approval, and thus firms may not increase these at IDD per se.

their trade secrets through employment contracts, such as a covenant not to compete (CNC).¹⁵ CNCs are contract terms used in various industries that prevent a departing employee from joining a rival enterprise or starting a new enterprise within a specific time period and in a specific geographic area. Although the protection from these covenants is weaker than through the IDD (e.g., Klasa et al., 2018) as they come with geographical and other restrictions, having such contracts in place lower the ex-ante mobility of employees. Thus, firms with weaker (or non-existent) CNCs are likely to face a higher risk that acquirers will target the firm for its intellectual capital after the passage of the IDD. We proxy for the strength of such existing covenants by examining their level of enforcement at the state level, as the scope and effectiveness of CNCs vary widely among states and depends on state law and the enforceability of these contracts (Bird and Knopf, 2015). We use the enforceability index for CNCs (which ranks states based on various state laws according to key criteria such as duration of the covenant, its geographic scope, etc.) created by Garmaise (2011) and expanded by Bird and Knopf (2015), and expect that firms with lower values of the index will have greater increases in their ATPs post-IDD, as compared to firms with higher values of the CNC enforcement index.

2.2.2 Innovation activity

In our second cross-sectional test, we examine the mechanism driving firms to alter ATPs. We expect the increase in ATPs after IDD to be higher for firms where value creation is largely dependent on innovation and development of new products. Thus, we expect firms with greater innovative activity to have higher R&D and higher intangibles assets (e.g., Zingales, 2000), and expect the increases in anti-takeover provisions to be higher for these companies (vs. those with lower R&D and intangibles). Firms with more inventive activity are also likely to have more knowledge workers (such as scientists, technicians, etc.). We consider the number of knowledge workers as a proportion of all workers in the industry (Chen et al., 2017) and predict that firms with a higher proportion of knowledge workers will have higher increases in ATPs.

¹⁵Nondisclosure agreements (NDAs) are another form of employment contracts with similar function as CNCs. We were unable to obtain data on NDAs for our sample.

2.2.3 Managerial entrenchment

Next, we examine whether firms that are likely to have higher managerial entrenchment are more likely to increase ATPs. We consider firms where CEOs have some of the characteristics of entrenchment, namely, low compensation-performance sensitivity, a long tenure in office, and lesser monitoring if the firm has no major stockholders (Jensen and Murphy, 1990; Berger et al., 1997; Bushee, 1998). If the managers' preservation of private benefits at the cost of shareholder value is the primary driver of increases in ATPs, then we expect firms with higher CEO entrenchment to have larger increases in ATPs.

2.3 Long-run innovative output

In our final set of analyses, we examine innovation output of firms following the adoption of IDD by their states. While causal interpretations are difficult in this case, the analyses can help shed additional light on the mechanism behind the decision to increase ATPs.

If firms increase antitakeovers following IDD to protect their innovation output and product development, then we expect such increases in antitakeovers to be associated with more and higher quality patents in the years following the changes in antitakeovers at the passage of IDD. Alternatively, if firms are increasing antitakeovers primarily due to managerial entrenchment reasons, then we expect such increases to be associated with fewer and lesser quality patents in the years following changes in antitakeovers post-IDD. This argument is also consistent with the literature showing that firms with higher ATPs are associated with lower stock returns, lower firm value, and lower operating performance, among other things (e.g., Gompers et al., 2003; Cremers et al., 2008; Atanassov, 2013).

3 The Inevitable Disclosure Doctrine

A trade secret comprises any information, including a formula, pattern, compilation, program device, method, technique, or process, that: (i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy (Uniform Trade Secrets

Act (UTSA), 1985). The UTSA also describes “misappropriation” of trade secrets to mean the acquisition of a trade secret by another person (including a corporation, government or any legal or commercial entity) who knows or has reason to know that the trade secret was acquired by improper means. Misappropriation may also arise through the disclosure or use of a trade secret by a person who acquired it under circumstances giving rise to a duty to maintain its secrecy or limit its use.

The IDD helps with the legal protection of trade secrets of a firm by allowing state courts to restrict the mobility of employees who possess such secrets to join different rival companies, or start their own rival company, and thus preventing them from disclosing these secrets in their new work environment. The legal doctrine in the IDD is based on the concept of *threatened* misappropriation. Essentially, IDD maintains that, if the new employment would inevitably lead to the disclosure of the firm’s trade secrets to a competitor and therefore cause the firm irreparable harm, then state courts can prevent the employee from working for the firm’s rival or can allow it conditional that the employee assume limited responsibilities in the rival firm.

There are other means of preventing such transfer of knowledge such as having employment contracts with a non-disclosure agreement (NDA) and/or a covenant not to compete (CNC). Klasa et al. (2018) discuss these and the differences of alternative contracts from the IDD and other nuances of IDD in detail. Briefly, IDD provides significant additional protection of a firm’s trade secrets because it does not entail specific geographic restrictions (such as in NDAs or CNCs) and it allows state courts to prohibit an individual’s employment at a competitor firm if this could lead to a future violation of an NDA – i.e., it does not need the violation to actually occur. A firm can rely on establishing the following facts to obtain an injunction: (i) the employee in question has access to its trade secrets, (ii) the employee’s duties at the rival firm would be so similar that in performing them he or she will inevitably use or disclose the trade secrets, and (iii) the disclosure of the trade secrets would produce irreparable economic harm to its business.

The IDD provides an ideal setting for us to examine the effect of an increased threat of takeovers due to the restriction of employee mobility on firms’ antitakeover policies.¹⁶ It also provides an attractive setting for cleaner identification, because the court’s positions regarding adoption of the

¹⁶Klasa et al. (2018) use data from the Census Bureau’s Survey of Income and Program Participation to provide evidence that the recognition of the IDD in a firm’s state significantly reduces the mobility of a firm’s workers who know its secrets to rival firms.

IDD over time provides an exogenous source of variation in the protection of firms' trade secrets, particularly in the context of firms' takeover provisions.¹⁷ As argued in Klasa et al. (2018), state courts adoption of the IDD are based on striking a balance between protecting firms' trade secrets and public policy concerns related to employee freedom of employment (Godfrey, 2004; Harris, 2000). State courts were not considering firms' takeover provisions in making these decisions. In addition, the state court judges are deemed independent from the state and federal governments. Their decisions are not influenced by the lobbying actions of labor unions, corporations or any political parties, but based primarily on the merits of specific cases (Klasa et al., 2018; Chen et al., 2017). Finally, corporations were unlikely to anticipate these adoption decisions because a court's issuance of a precedent is idiosyncratic to a particular case. Therefore, it is unlikely that the IDD adoption decisions are prompted by factors that drive firms' decisions regarding their takeover provisions.

4 Sample selection and variables

4.1 Data

We construct our sample by merging firms in the Compustat, CRSP, and ISS databases over 1990-2011. Our sample period is based on the period over which ISS data is available for most ATPs. We only consider firms that have headquarters in the U.S. This gives us 38,125 firm-years in our initial sample. From this initial sample, we remove several firm-years due to missing identifying information in Compustat and missing data on the various control variables we employ in our regressions. Our final sample comprises 29,067 firm-years and 3,435 unique firms.

We obtain the details of the IDD adoptions from Klasa et al. (2018). Appendix B provides a description of the states that adopted these provisions. New York was the first U.S. state to adopt the IDD in 1919. This was followed by three states adopting the IDD in the 1960s, one in the 1970s, four in the 1980s, nine in the 1990s, and three in the 2000s. In total, 21 states adopted the IDD, 12 of which adopted it over our sample period. Three states that had previously adopted IDD reject it over our sample period. As in Klasa et al. (2018), for the 21 states whose courts adopted

¹⁷Several studies have till date utilized this setting to examine the effect of this shock to the protection of trade secrets to various corporate outcomes, such as the likelihood of takeovers (Chen et al., 2017), leverage (Klasa et al., 2018), and disclosures (Li et al., 2017; Ali et al., 2015).

the IDD, we create an indicator, *IDD*, and set it to equal to zero in all years preceding the date of the adoption, and equal to one the year of the adoption and afterwards.¹⁸ For the remaining 29 states that did not explicitly consider adopting the IDD (or subsequently rejected it), we set the *IDD* indicator equal to zero.

We obtain information on the various ATPs from the ISS database (see Appendix A for definitions of all individual provisions). ISS (formerly IRRC, and acquired by Riskmetrics in 2007) publishes detailed listings of the firm-level and state-level governance provisions for individual firms for 1990, 1993, 1995, 1998, 2000, 2002, 2004, and 2006. The data are available annually from 2007 to 2011. Following prior literature (e.g., Karpoff et al., 2017), we forward fill the missing years with values from the most recent year. For example, we use the 1990 values for 1991 and 1992, etc.¹⁹ ISS obtains the data on these governance and takeover provisions from corporate bylaws and charters, annual reports, proxy statements, and SEC Forms 10-Q and 10-K. The ISS universe covers the S&P 1500, which is more than 90% of the total market capitalization of the combined New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and NASDAQ markets during our sample period (Gompers et al., 2003).

Our main provisions of interest are the eleven provisions categorized as *Takeover Defenses*. We consider this group, as well as the individual provisions within this group, in our tests. For comparison, we also examine the changes in the *State Laws*, *Compensation*, and *Takeover Neutral* provisions, and repeat our tests using the aggregate indices commonly used in the literature: the G-index, E-index and O-index.

Based on prior research, we employ a wide range of control variables that may affect a firm's governance structure or the likelihood of being acquired (Chen et al., 2017; Bebchuk et al., 2008). Appendix C describes these variables. These variables include firm size, market-to-book, return on assets, leverage, cash ratio, R&D intensity, property ratio, sales growth, abnormal return, firm risk,

¹⁸For court decisions after July 1 of a calendar year, we set IDD adoption to the following year since firms must typically have a shareholder meeting to change takeover defenses. The results reported in the study are not sensitive to this adjustment, which should work against our findings.

¹⁹We note that forward filling the data may sometimes work against us in finding changes in takeover provisions. For instance, Massachusetts (MA) adopted the IDD in 1994. To examine if firms headquartered in MA changed their takeovers in 1994, we would need to examine takeover provisions in 1994. However, given that 1994 data is missing and we have used data from 1993 to fill this gap, we are unlikely to detect any changes that year. To circumvent this issue, we also conduct tests where we examine changes in takeover provisions in IDD adoption year 0, +1, and +2 so we can detect changes in immediate years following IDD adoption.

and bid-ask spread.²⁰ We control for CEO ownership as firms with different levels of managerial share ownership are likely to differ in their use of ATPs (Catan and Kahan, 2016). We also include a Delaware incorporation indicator as firms incorporated in Delaware may not need to increase their takeover defenses given stronger protection under Delaware law. Following Klasa et al. (2018) and Chen et al. (2017), we also include the strength of CNCs, as measured by the state-level enforcement index of CNCs from Bird and Knopf (2015), and two state-level variables to control for the economic and political conditions in the state. We include the state GDP growth rate, as richer states may have more acquisition activity and firms in such states make face increased takeover risks. We obtain data on state GDP growth from the Bureau of Economic Analysis. To control for the political climate, we include political balance in the state (i.e., the fraction of a state’s members in the U.S House of Representatives that belong to the Democratic Party), which we obtain from History, Art & Archives, U.S. House of Representatives.

4.2 Descriptive statistics

Table 1 provides summary statistics for our main dependent and independent variables. Panel A provides statistics on ATPs. The average sample firm year has three *Takeover Defenses*, one *Compensation* provision, zero net *State Laws*, and three *Takeover Neutral* provisions. Among the *Takeover Defenses*, the three provisions that are more common include blank check (88%), classified boards (58%), and poison pills (52%). Approximately 66% of firm years have golden parachutes and 52% have compensation plans. Opting into or out of *State Laws* is rare. Among the *Takeover Neutral* provisions, the median firm uses anti-cumulative voting and anti-secret ballot. For the sake of comparison, we also compute the more commonly used indices, G-index, E-index and O-index for our sample firms. The median firm has a G-index, E-index and O-index value of 9, 3, and 7, respectively.

[Insert Table 1 here]

Panel B reports that 51% of sample firm years are from companies headquartered in a state that has adopted the IDD. Our median sample firm years have a leverage ratio of 16.7% and a market-to-book ratio of 1.06, a cash ratio of 6.4% of total assets, and have 44.2% of total assets in

²⁰Our results are robust to using CEO pay-performance sensitivity instead of CEO ownership as a control.

the form of property, plant and equipment. The average CEO owns 1.6% of their firm. In terms of performance, the median sample firm has an ROA of 8.1%, sales growth of 7.7% and abnormal average daily returns around zero percent. The median firm has zero percent R&D intensity, 7.0% intangible asset intensity and knowledge worker proportion of about 25%. Approximately 56% of sample firm years are for companies incorporated in Delaware. The average state CNC strength is 3.97 on a scale of zero to nine, the average state GDP growth rate is just under 5%, and the average political balance is 53% democratic.

5 Recognition of IDD and ATPs

5.1 Baseline regressions

Our primary research design is to employ a difference-in-difference methodology to compare the changes in ATPs following the adoption of IDD in affected states (the treatment group) to the changes in ATPs in states where IDD was not adopted (the control group). We are able to conduct such a test because several U.S. state courts recognized the IDD in different years during the sample period.

We first conduct the following regression on the various takeover groups:

$$\begin{aligned} \text{Takeover group}_{i,t} = & \alpha + \beta_1 \text{IDD}_{s,t} + \beta_2 \text{Firm characteristics}_{i,t} + \beta_3 \text{State controls}_{s,t} \\ & + \text{Firm FE} + \text{Year FE} + \epsilon \end{aligned} \tag{1}$$

In equation (1) the dependent variable is one of the four takeover groups, namely, *Takeover Defense*, *Compensation*, *State Law*, and *Takeover Neutral*. For all variables, the subscript i indicates firm, s indicates the state in which the firm’s headquarters is located, and t indicates the year. The variable *IDD* is a dummy variable that equals one if the IDD is in place in state s in a given year, and zero otherwise. We include a vector of firm characteristics and state controls as described in the prior section. We also include firm and year fixed effects to control for time-invariant firm differences and time trends in the likelihood of being acquired across firms. Given that our treatment is defined at the state and year levels, we cluster standard errors by state and year.²¹

²¹The results are robust to clustering at the state or year level.

Our coefficient of interest is β_1 , which gives us the treatment effect of the state recognition of IDD on ATPs. Table 2 presents the regression results. The coefficient estimates on *IDD* are positive and statistically significant only in column (1) where the dependent variable is *Takeover Defense* provisions. The coefficient estimate on the IDD indicator is 0.089 and statistically significant at the 1% level, suggesting a positive treatment effect of the IDD adoption on the firm’s likelihood of increasing ATPs.²² Given that the average value of takeover defense group of provisions is 3.34, this represents an increase of about 3%. None of the other groups of provisions are statistically significant.

[Insert Table 2 here]

One potential concern with the above analysis is that the control group might not be fully comparable across IDD and non-IDD states. To examine this possibility, we verify the robustness of the results by employing an entropy balancing technique to ensure that IDD and non-IDD firms are comparable. In untabulated results, we follow Hainmueller (2012) in balancing the first three moments (mean, variance, and skewness) of the treatment (IDD) and control (non-IDD) firms and re-estimate our regression on this entropy-balanced sample. The results are similar to those reported in Table 2. For example, the coefficient on IDD where the dependent variable is *Takeover Defense* provisions increases from 0.090 (t -statistic = 2.77) to 0.125 (t -statistic = 3.33) for the entropy-balanced sample.

The validity of difference-in-differences estimation depends on the parallel trends assumption: absent the IDD, treated firms’ tendencies to increase ATPs would have evolved in the same way as that of control firms. In other words, firms would not have increased their antitakeover defenses differently to combat the increased takeover likelihood without IDD treatment. We follow Chen et al. (2017) by investigating the pre- and post-IDD trends in the various ATPs between the treated group and the control group to examine the timing of the changes in more depth.

We re-estimate equation (1) by replacing the IDD indicator with seven indicator variables: IDD^{-3} , IDD^{-2} , IDD^{-1} , IDD^0 , IDD^{+1} , IDD^{+2} and IDD^{3+} . These variables indicate the year relative to the adoption of the IDD: IDD^{-3} indicates that it is three years before the IDD adoption;

²²As mentioned earlier, we do not expect firms to increase poison pills after IDD given that nearly all firms have a “shadow pill” (Coates, 2000; Catan and Kahan, 2016). When we repeat this test excluding poison pills, the IDD coefficient increases to 0.100 and remains statistically significant at the 1% level.

IDD^{-2} indicates that it is two years before the IDD adoption; IDD^{-1} indicates that it is one year before the IDD adoption; IDD^0 indicates the year in which the IDD is adopted; IDD^{+1} indicates that it is the year after the IDD adoption; IDD^{+2} indicates that it is two years after the IDD adoption; IDD^{3+} indicates that it is three or more years after the IDD adoption.

The coefficients on the IDD^0 , IDD^{+1} , and IDD^{+2} are important in our case for two reasons. First, ATPs are often difficult to change as they frequently require shareholder approval and could take some time for firms to change them. For instance, if firms have to wait for their annual shareholder meetings or need to convince their shareholders in order to alter these provisions in a special meeting, then there could be a lag in adopting certain provisions. Second, we had to forward fill the data from ISS due to several missing years prior to 2007. In the situations where a state adopts IDD in a year when the antitakeover data was not available, then we will not pick up the effect until one or two years after the adoption.

Given that it could take longer periods of time to gain shareholder approval for ATPs, the IDD^{3+} indicator could be important as well since it captures changes in years 3 or longer. However, we do not have strong predictions for this coefficient since it can capture changes in years well after IDD was adopted and it absorbs IDD adoption prior to the beginning of our sample period. For longer lengths of time after IDD, it is not clear as to what one may expect in terms of changes in antitakeovers.

The coefficients on the IDD^{-2} and IDD^{-1} indicators are also important because their significance and magnitude will indicate the differences (if any) that exist between the ATPs of the treatment group and the control group prior to the adoption of the IDD, and to verify whether the parallel trends assumption holds.

Table 3 presents these results. For the *Takeover Defense* group, the coefficients on IDD^{-1} and IDD^{-2} are not significantly different from zero. Thus, the parallel trends assumption of the difference-in-difference is not violated. The impact of the IDD shows up in the first two years after adoption: the coefficients on the IDD^0 and IDD^{+1} become significantly positive (at the 1% and 10% levels). The coefficient on IDD^{3+} is also statistically significant (at the 1% level). None of the other groups exhibit any pre- or post-trends except for *State Laws*, where the coefficient on IDD^{+1} is significantly negative but small.

[Insert Table 3 here]

Among our control variables, we find that larger firms, firms with more tangible assets ratio, higher sales growth and lower risk are more likely to have higher defenses. Interestingly, we also find that firms incorporated in Delaware are more likely to have higher defenses. We find a negative and significant coefficient for leverage, suggesting that firms with lower levels of debt have higher takeover defenses. This supports the view that debt is another mechanism that managers may choose to reduce the threat of takeovers (Zwiebel, 1996; Novaes, 2003), and thus debt and antitakeovers are likely to be substitute governance mechanisms. The state-level variables do not have significant coefficients.

For comparison, we repeat equation (1) as well as the analysis using the commonly used indices, G-index, E-index and O-index as the dependent takeover defense variable. Table 4 reports that the coefficient for IDD is not statistically significant for any of the indices.²³ This result implies that using these aggregate indices would have led us to incorrectly conclude that firms do not alter ATPs to deter takeovers following the IDD.

[Insert Table 4 here]

While the results in Tables 2 and 3 confirm that treatment firms increase *Takeover Defenses* just after the IDD adoption, we also examine the individual provisions within this group to further study any variation across the individual provisions within this group. We repeat the regressions in equation (1) using each of the individual provisions as our dependent variables. We only focus on the *Takeover Defenses* group from this point onwards as this is the only group where we observe variation in the treatment firms, which is in line with our predictions.²⁴

Table 5 presents these results. We find that several, but not all, of the *Takeover Defense* provisions are statistically significant. The coefficient estimates on *IDD* are positive and statistically significant for the following provisions: written consent, classified board, blank check, directors' duties, pension parachute, silver parachute and unequal voting (at the 5% level or better). Interestingly, fair price is negative and significant. We obtain the largest coefficients for written

²³We get similar results when we repeat these tests using the timing of adoption ranging from 3 years prior to IDD adoption to three years after IDD.

²⁴Repeating our tests using individual provisions and groups as a whole for the other three categories confirmed that firms do not significantly alter any of these provisions after the adoption of the IDD.

consent followed by classified board. The coefficient estimates on the IDD indicator for these respectively are 0.038 and 0.013 (both significant at the 1% level), suggesting a strong positive effect of the IDD treatment on the firm’s likelihood of increasing these ATPs. Based on the average values of the significant takeover defenses in Table 1, the increases in these individual defenses range between 1% and 35% of the mean values.

[Insert Table 5 here]

In unreported analyses, we repeat our tests on the individual provisions by replacing the IDD indicator with the seven indicator variables: IDD^{-3} , IDD^{-2} , IDD^{-1} , IDD^0 , IDD^{+1} , IDD^{+2} and IDD^{+3} . As before, the strongest effects are on written consent, pension parachute and silver parachute, followed by classified board, blank check, and directors’ duties. Overall, once we consider the individual provisions, we see several increases in the year of or immediately after the adoption of the IDD for the treatment firms.

5.2 Cross-sectional tests

In our cross-sectional tests, we continue to use a difference-in-difference methodology to examine how the effects of the IDD on changes in their ATPs vary across firms based on labor mobility, level of innovation, and managerial entrenchment. We follow Chen et al. (2017) in designing our cross-sectional methodology.²⁵

[Insert Table 6 here]

5.2.1 Labor mobility

Given that the impact of the IDD on a firm’s likelihood of being acquired is due to the increased labor market frictions to hire human capital directly, we expect the treatment effects to be stronger for firms whose employees have higher ex-ante mobility in the labor market. Employees likely have better employment mobility when there are a large number of industry peer firms available in the local labor market (Chen et al., 2017; Gao et al., 2015) and/or when they are not subject to strong non-compete agreements (Bird and Knopf, 2015). Thus, following these studies, we use the number

²⁵Our cross-sectional tests include the standard controls, but are robust to controlling for all of the other cross-sectional variables we consider.

of firms in the same 3-digit SIC industry headquartered in the same state as a proxy for the ex-ante labor market mobility, and the enforcement index from Bird and Knopf (2015) to proxy for the strength of non-compete agreements at the state level.

We predict the treatment effect of IDD adoption on takeover defense provisions to be stronger when there are a large number of industry peer firms domiciled nearby and when the state-level enforcement of CNCs is weak. We define the *High number of rivals* indicator as one if the number of Compustat firms in the same 3-digit SIC industry and state is above the sample 75th percentile during a given year, and zero otherwise. The *Low number of rivals* indicator is defined as $(1 - \text{High number of rivals})$. Similarly, we define the *High CNC enforcement* indicator as one if the firm is in a state where the enforcement index is above the sample 75th percentile during a year, and zero otherwise. The *Low CNC enforcement* indicator is $(1 - \text{High CNC enforcement})$.²⁶

We re-estimate Equation (1) by replacing the IDD indicator with $IDD \times \text{High number of rivals}$ and $IDD \times \text{Low number of rivals}$ and present the results in Table 6 column (1). The coefficient on $IDD \times \text{High number of rivals}$ is 0.20, which is positive and significant at the 1% level. The coefficient on $IDD \times \text{Low number of rivals}$, 0.08, is also positive and significantly different from zero at the 5% level. An F -test reveals that the coefficient on the interaction of *High number of rivals* with IDD is significantly larger than the latter coefficient at the 1% level ($F = 6.58$). This result indicates that the treatment effect is significantly larger for firms whose employees likely had more opportunities to switch jobs ex-ante, whereas it is smaller for firms surrounded by few industry peers.

We repeat this estimation for the high and low CNC enforcement indicators as well and the results are presented in Table 6 column (2). The coefficient on $IDD \times \text{Low CNC enforcement}$ is 0.165, which is positive and significant at the 1% level. The coefficient on $IDD \times \text{High CNC enforcement}$ is -0.088 and is significant at the 5% level. Not surprisingly, an F -test reveals that the coefficient on the interaction of *Low CNC enforcement* with IDD is significantly larger than that for *High CNC enforcement* at the 1% level ($F = 23.27$).

These results indicate that the treatment effect is significantly larger for firms whose employees likely had more opportunities to switch jobs ex-ante, whereas it is smaller for firms surrounded by few industry peers and bound by stronger employment contracts.

²⁶The results are similar for both measures when we use the sample median instead.

5.2.2 Innovative activity

We expect the increases in ATPs to be higher for firms where innovation is key to value creation. We use three measures to proxy for firms with higher levels of innovation: knowledge workers (Chen et al., 2017), R&D intensity (Zingales, 2000), and intangible asset intensity (Aboody and Lev, 1998; Barth et al., 2001).

Firms with a greater focus on innovation are likely to have a higher proportion of knowledge workers (Chen et al., 2017). As in Chen et al. (2017), we measure this variable as the number of knowledge workers as a proportion of all workers in the industry. We obtain employment data from the Integrated Public Use Microdata Series (IPUMS) database. Per the IPUMS occupational codebook, knowledge workers are those with an occupational code below 200 (based on 1990 data), and includes occupations such as managers, scientists, engineers, computer programmers, and IT professionals.²⁷ To calculate all workers in the industry we consider the 3-digit NAICS industry in a given year.²⁸ We use the proportion of R&D expenditures to total assets to identify firms with higher research and development activity, and the ratio of intangible assets to total assets as an indicator of high innovation activity in a firm. Intangible assets include items such as copyrights, engineering drawings, patents and trademarks, which are likely to be high in firms that have higher level of innovation.

For each of these innovation proxies, we define *High innovation* as an indicator variable that equals one if the innovation proxy is above the sample 75th percentile, and zero otherwise.²⁹ We define *Low innovation* indicator as $(1 - \text{High innovation})$.

We re-estimate Equation (1) by replacing the *IDD* indicator with *IDD* interacted with each measure of high and low innovation activity. Table 6 columns (2) – (4) present the results.

²⁷The IPUMS website provides U.S. census and American Community Survey (ACS) data on individual workers occupational code, industry, and state. Occupational data are available every ten years before 2000, and annually since 2000. We follow Chen et al. (2017) by using census data for the years 1980, 1990, and 2000 for the periods of 1980–1985, 1986–1995, and 1996–2000, respectively; and the annual ACS survey data after 2000.

²⁸We also verify the robustness of our results using a slight variation of the above measure where we modify the industry classifications by converting all of the data to the 2012 NAICS industry classifications. To avoid the changing industry classifications over time, this approach provides a consistent NAICS 2012 classification for all observations. The results are nearly identical with either approach.

²⁹Given the nature of the distribution of R&D (right skewed), we use the 75th percentile of this variable to calculate high innovation (see Table 1, panel B). To be consistent, we continue to use the 75% for the other innovation variables as well. However, using the 50th percentiles for the innovation variables (other than R&D) produces similar results. We do not repeat the test using median values for R&D as the median is zero in our sample, so any non-zero value would be considered “High R&D”. Thus, using median R&D would not give meaningful results.

The results for the all three innovation activity variables are very similar. The coefficient on $IDD \times High\ knowledge\ workers$ is 0.231 and significant at the 1% level. The coefficient on $IDD \times Low\ knowledge\ workers$ is also positive at 0.051 and marginally significant at the 10% level. However, the F -test of the difference between these coefficients indicates that the former is significantly larger than the latter coefficient at the 1% level ($F = 22.02$).

We find similar results on the other two measures of innovation. The coefficient on $IDD \times High\ R\&D$ is 0.124 and that on $IDD \times High\ intangible\ intensity$ is 0.149, both of which are significantly different from zero at the 1% level. The coefficient on the interaction between IDD and low R&D is not significant, but the interaction between IDD and low intangible intensity is positive and significant. However, in both columns (3) and (4), the coefficient on the high measure of innovation (R&D and intangible asset intensity) are significantly larger than the respective coefficients on the interaction between IDD and low innovation measures ($F = 7.94$ and 9.13 , respectively).

These results indicate that the increased takeover defense provisions by firms after IDD treatment is significantly higher for those with a high level of innovation activity, and is either absent or significantly lower in firms with low innovation activity. One question that arises is whether firms with high levels of any investment, either tangible or intangible, are more likely to increase their *Takeover Defenses*. To examine this possibility, we repeat the above analyses using a measure that captures high level of tangible investments, as proxied by high capital expenditures as a proportion of total assets. We find that firms with both high and low levels of capital expenditures increased antitakeovers, but there is no statistically significant difference between these firms in terms of increases in their ATPs.

5.2.3 Managerial entrenchment

If managers are primarily increasing their ATPs motivated by the desire to preserve their private benefits at the cost of shareholder value, then the increases in antitakeovers are likely to be higher in firms where managers are more likely to be entrenched. We consider three measures to capture managerial entrenchment: the tenure of the CEO (Berger et al., 1997), the presence of at least one 5% blockholder as a monitor (Bushee, 1998), and the pay-performance sensitivity of the CEO (Jensen and Murphy, 1990; Core and Guay, 2002). We measure CEO pay-performance sensitivity

(PPS) using the sensitivity of a CEO's wealth to stock price changes, measured as delta (i.e., the change in the dollar value of the executive's stock and options for a 1% change in the stock price) following Core and Guay (2002) and Coles et al. (2006). For this measure, lower values of pay-performance sensitivity reflect higher levels of entrenchment.

For the three entrenchment proxies, we define the *High entrenchment* indicator as one if the tenure of the CEO of the firm is above the sample 75th percentile, if there are no external blockholders, and if their CEO pay-performance sensitivity is below the sample 25th percentile, and zero otherwise.³⁰ We define the *Low entrenchment* indicator as $(1 - \textit{High entrenchment})$.

We replace the *IDD* indicator in Equation (1) with the interactions of *IDD* and the high and low managerial entrenchment proxies. Table 6 columns (5), (6) and (7) presents the results. The results are similar across the three variables. For CEO tenure and blockholders, the coefficient on the interaction between *IDD* and high managerial entrenchment are not statistically significant, but the corresponding interactions with the low managerial entrenchment variable is statistically significant (at the 5% levels). The *F*-tests reveal that the differences between these coefficients are not significantly different from zero ($F = 2.11$ and 0.22 , respectively). For CEO pay-performance sensitivity, the coefficients on both the *IDD* and high managerial entrenchment and *IDD* and low managerial entrenchment are significant (at the 1% and 10% levels, respectively). However, the *F*-test indicates that these coefficients are not significantly different from each other ($F = 0.11$). These results indicate that the treatment effect is not significantly different for firms with a high versus low managerial entrenchment. To the extent our proxies capture the firms where managers are likely acting for their own benefits at the cost of shareholders, we do not find evidence of the entrenchment mechanism in this setting.

It is potentially surprising that firms with more entrenched managers are not increasing takeover defense provisions to ward off hostile bids after *IDD*. One explanation for the lack of a difference across the high and low entrenched managers could be that entrenched managers already have elevated levels of antitakeovers even prior to the *IDD* to shield themselves from the market for corporate control. Thus, when *IDD* is adopted by their state, we do not observe significant differences in their actions related to these provisions as compared to firms with low managerial

³⁰We use the 75th percentile versus the median in these cases to be consistent with the other measures and to capture the high entrenchment firms. However, our results are robust to using the sample median in both cases.

entrenchment. It is also possible that firms with greater trade secrets might not have entrenched managers due to the disciplining component of competition.

In sum, the results of our cross-sectional tests are consistent with the argument that a higher threat of takeovers to obtain a firm's human capital and/or trade secrets after IDD results in firms increasing their *Takeover Defenses*, and firms with more innovation activity, but not with higher managerial entrenchment, are more likely to do so.³¹ It is possible however, that if the threat of takeovers is also higher in high innovation firms, then managers and directors who wish to protect their jobs in these firms are more likely to increase ATPs in these firms. However, if that were the case we should have also found similar evidence using our managerial entrenchment variables. The *lack* of evidence for high managerial entrenchment firms gives us more assurance in our inferences regarding managers' desires to protect innovation capital when increasing ATPs.

6 Ex-post outcomes of changing takeover defenses

6.1 Long-run innovation following IDD

In this subsection, we examine innovation activity conditional on the choice to respond to IDD treatment by altering ATPs. We caution the reader that although the IDD appears to be a source of plausibly exogenous variation in the likelihood of firms being acquired, the choice to alter *Takeover Defenses* is an endogenous response by firms. Nevertheless, since the results in Section 5.2 reveal that firms with more innovative activities tend to respond more to the IDD through higher *Takeover Defenses*, we explore the correlation between this endogenous response and long-run innovation activities.

Specifically, our goal is to examine the association between the choice to increase (or not increase) *Takeover Defenses* by firms after IDD and subsequent annual innovation activity over the following one to five years. In each of these tests we retain and also partition the control sample of non-IDD firms based on changes in *Takeover Defenses*.

We recognize, however, that changes in innovation in the period after IDD can result directly from the incentives that IDD per se had on knowledge workers. On one hand, an employer-friendly

³¹Chen et al. (2017) conduct a series of robustness tests which allow them to conclude that the IDD is associated with acquisitions where the acquiring firms are more likely to retain the target firm's key technological employees (i.e., inventors) but more likely to dispose of the target's fixed assets and rank-and-file employees.

trade secrecy regimes place frictions on the circulation of individuals and ideas across firms and markets, which can mute innovation (Hellman and Perotti, 2011). The lack of mobility of employees due to trade secrecy regimes such as IDD can further lower an employees capacity to signal their ability in the external labor market, thus lowering their incentives to invest in innovation (and other corporate) activities. Contigiani et al. (2017) exploit the adoption of IDD in Illinois in 1995 as compared to other Midwestern states, and provide results consistent with this negative association, primarily due to muting employees’ ability to signal their quality. On the other hand, while the evidence suggests a negative relation, one can also argue that a more employer-friendly trade secrecy regime may incentivize employers to increase investments in organizational capital (e.g., Li et al., 2017), including in their employees, which may boost innovation outcomes.

To examine the influence of IDD on innovation and explore the above conflicting notions for our sample, we study the association between the passage of IDD and innovation outcomes in the following one through five years.

We examine two measures of innovation: the number of patents (i.e., quantity) and the citation-weighted value of patents (i.e., quality). We obtained both measures from Kogan et al. (2017) and logarithmically transform the quantity of one plus the observed value.³² For these tests, we follow Kogan et al. (2017) in excluding firms operating in financial (SIC codes 6000 to 6799) and utilities (SIC codes 4900 to 4949) industries.³³ We also exclude firms with zero patenting activity. These measures are then cumulated for the period one to five years looking forward.

Similar to the cross-sectional tests in Table 6, we generate two interaction variables: $IDD \times Defense\ Up$ and $IDD \times Defense\ Not\ Up$.³⁴ The variable *Defense Up* takes the value of one if the firm experiences an increase in the total value of *Takeover Defense* as compared to the prior year. The variable *Defense Not Up* is equal to $(1 - Defense\ Up)$. Thus, the results reported in Table 7 compare long-run innovation for IDD firms that endogenously choose to increase or not increase their takeover defense after IDD passage versus a control sample of non-IDD firms with similar takeover defense changes.

³²We download patent data from Noah Stoffman’s website: <https://iu.app.box.com/v/patents>.

³³The primary results reported in this paper are robust to excluding financial and utility firms.

³⁴We also conduct these tests with only the *IDD* indicator, to examine the effect of the passage of the IDD *per se* on patent activity. The *IDD* indicator is never significant, indicating that there was no significant difference in patent quantity and quality between the treatment versus control firms in the period following the IDD.

[Insert Table 7 here]

Panel A presents the results for the number of patents. We find that IDD firms increasing their *Takeover Defenses* have a significantly positive correlation with the number of patents in the years following the IDD. The magnitude of the coefficient on *IDD* declines in size from years one to three, but remains statistically significant and positive through this period. The correlation disappears in year four, but remains present in year five. Conversely, we find no significant correlation between IDD firms that did not increase their *Takeover Defenses* and patent quantity. Further, the *F*-tests reveal that the coefficients for the interactions $IDD \times Defense\ Up$ are significantly higher than those for $IDD \times Defense\ Not\ Up$.

We find similar results for the quality of patents in panel B. IDD firms that increase their takeover defense provisions have significantly higher patent citations in years one to three, and year five, following these changes as compared to the control firms. In contrast, IDD firms that did not increase their takeover defense provisions demonstrate no difference in patent quality over the subsequent four years as compared to control firms that do not increase *Takeover Defenses*.

Taken together, the tests in Table 7, panels A and B, suggest that firms increasing ATPs following IDD enjoy higher ex-post patent quantity and quality. These results are consistent with the notion that increasing ATPs in this setting appears to be beneficial for innovative firms.

While patents are one key output of firms' innovation initiatives, many firms may elect to simply keep their disclosures on inventions more guarded in the form of trade secrets instead of patenting them (especially post-IDD). Ideally, we would also like to examine trends in trade secrets after IDD; however, the challenge is that trade secrets are by definition unobservable and difficult to measure. Nevertheless, we attempt to capture this aspect of firms' innovation activities by following Glaeser (2018). We take the logarithmic transformation of the number of times a firm references the text string "trade secrets" or "trade secrecy" in its annual SEC Form 10-K filing, as our proxy of the firms quantity of trade secrets. We then examine firms' trade secret activity in the five years following the IDD adoption. As in Glaeser (2018), we limit our analysis to the period after 1996 since electronic EDGAR filings were not mandatory prior to May 5, 1996.

Table 7, panel C the results. We find that IDD firms that did not increase their *Takeover Defenses* have significantly negative correlations with their trade secret disclosures in the three years

following the IDD. The F -tests reveal that the coefficients for the interactions $IDD \times Defense\ Not\ Up$ are significantly lower than those for $IDD \times Defense\ Up$ for years three and five. Given the measurement challenges, we are less confident about interpreting these results. Having said that, these results are consistent with the idea that the failure to increase *Takeover Defenses* after the IDD is negatively correlated with future trade secret disclosures.

6.2 Takeover likelihood

We conduct additional analyses to examine whether or not increased *Takeover Defenses* is associated with a lower probability of being acquired. For these tests, we generate a dependent variable equal to one if the firm is acquired in the subsequent five years using data from the SDC M&A database.³⁵ We then partition firms based on changes in *Takeover Defenses* similar to Table 7. These variables are then interacted with the IDD indicator, which is limited to the year of IDD treatment. The results are presented in Table 8.

[Insert Table 8 here]

We find that the coefficients are negative and significant for the interaction $IDD \times Defense\ Up$ in years one, two, and three. F -tests reveal that these coefficients are statistically smaller than the coefficients on $IDD \times Defense\ Not\ Up$ interactions in years one and two. These results suggest that increases in *Takeover Defenses* are associated with a smaller probability of being acquired for IDD firms that increase their ATPs than firms that do not.

7 Conclusion

We investigate whether managers strengthen ATPs when facing an increased threat of being acquired, and two potential mechanisms driving this decision. We exploit the exogenous shocks from the staggered recognition of the Inevitable Disclosure Doctrine (IDD) by U.S. state courts. This doctrine decreases the mobility of knowledge workers by preventing them from joining rival companies, thus increasing the cost of a rival firm to directly poach the target's employees from the labor market. In turn, the IDD increases the likelihood that firms with higher levels of human capital are acquired by their rivals.

³⁵We use the announcement date correction methodology described in Mulherin and Simsir (2015).

We predict and find that managers respond to this plausibly exogenous increase in takeover likelihood by increasing specific takeover defense measures. In particular, they increase the following defenses, all of which increased the cost of acquisitions for the acquirer: written consent, classified board, blank check, directors' duties, pension parachute, silver parachutes, and unequal voting. We find that the increase in takeover defenses is stronger for firms with many in-state rivals and for firms with weaker state-level enforcement of CNCs, suggesting these employees had greater ex-ante employment mobility prior to IDD.

Next, our cross-sectional tests indicate that managers increase takeover defenses in order to protect their investments in innovation rather than for entrenchment reasons. Finally, in line with the protection of innovation incentives, we find that firms that increase takeover defenses following IDD have higher ex-post quantity and quality of innovation activity, and experience reductions in the probability of being acquired.

Our study adds to the large literature on the use and desirability of ATPs. We show that high innovation firms increasing certain provisions to deter takeovers have higher innovation output in the five years after IDD. This suggests that ATPs can be beneficial for shareholders for certain firms. We also provide evidence of specific ATPs that managers choose to trigger once they face an increased threat of takeovers. Finally, we add to the growing literature on the changes in various corporate policies and outcomes in states that adopt the IDD.

References

- Aboody, D., and B. Lev. 1998. The value relevance of intangibles: The case of software capitalization. *Journal of Accounting Research* 36:161–191.
- Ali, A., N. Li, and W. Zhang. 2015. Restrictions on Managers’ Outside Employment Opportunities and Asymmetric Disclosure of Bad versus Good News. Working paper, University of Texas at Dallas.
- Ambrose, B. W., and W. L. Megginson. 1992. The role of asset structure, ownership structure, and takeover defenses in determining acquisition likelihood. *Journal of Financial and Quantitative Analysis* 27:575–589.
- Atanassov, J. 2013. Do hostile takeovers stifle innovation? Evidence from antitakeover legislation and corporate patenting. *Journal of Finance* 68:1097–1131.
- Barth, M. E., R. Kasznik, and M. F. McNichols. 2001. Analyst coverage and intangible assets. *Journal of Accounting Research* 39:1–34.
- Bates, T. W., D. A. Becher, and M. L. Lemmon. 2008. Board classification and managerial entrenchment: Evidence from the market for corporate control. *Journal of Financial Economics* 87:656–677.
- Bebchuk, L., A. Cohen, and A. Ferrell. 2008. What matters in corporate governance? *Review of Financial Studies* 22:783–827.
- Bebchuk, L. A., and A. Cohen. 2005. The costs of entrenched boards. *Journal of Financial Economics* 78:409–433.
- Becker-Blease, J. R. 2011. Governance and innovation. *Journal of Corporate Finance* 17:947–958.
- Berger, P. G., E. Ofek, and D. L. Yermack. 1997. Managerial entrenchment and capital structure decisions. *Journal of Finance* 52:1411–1438.
- Bertrand, M., and S. Mullainathan. 2003. Enjoying the quiet life? Corporate governance and managerial preferences. *Journal of Political Economy* 111:1043–1075.
- Bird, R. C., and J. D. Knopf. 2015. The impact of local knowledge on banking. *Journal of Financial Services Research* 48:1–20.
- Bushee, B. J. 1998. The influence of institutional investors on myopic R&D investment behavior. *The Accounting Review* pp. 305–333.
- Cain, M. D., S. B. McKeon, and S. Davidoff-Solomon. 2017. Do takeover laws matter? Evidence from five decades of hostile takeovers. *Journal of Financial Economics* 124:464–485.
- Catan, E. M., and M. Kahan. 2016. The law and finance of antitakeover statutes. *Stanford Law Review* 68:629–645.
- Cen, L., S. Dasgupta, and R. Sen. 2015. Discipline or disruption? Stakeholder relationships and the effect of takeover threat. *Management Science* 62:2820–2841.
- Chen, D., H. Gao, and Y. Ma. 2017. Human capital driven acquisition: Evidence from the Inevitable Disclosure Doctrine. Working paper.
- Coates, J. C. 2000. Takeover defenses in the shadow of the pill: A critique of the scientific evidence. *Texas Law Review* 79:271–382.
- Coates, J. C. 2001. Explaining variation in takeover defenses: Blame the lawyers. *California Law Review* 89:1301–1422.

- Coles, J. L., N. D. Daniel, and L. Naveen. 2006. Managerial incentives and risk-taking. *Journal of Financial Economics* 79:431–468.
- Comment, R., and G. W. Schwert. 1995. Poison or placebo? Evidence on the deterrence and wealth effects of modern antitakeover measures. *Journal of Financial Economics* 39:3–43.
- Contigiani, A., I. Barankay, and D. Hsu. 2017. Trade secrets and innovation: Evidence from the Inevitable Disclosure Doctrine. Working paper, University of Pennsylvania.
- Core, J., and W. Guay. 2002. Estimating the value of employee stock option portfolios and their sensitivities to price and volatility. *Journal of Accounting Research* 40:613–630.
- Core, J. E., W. R. Guay, and T. O. Rusticus. 2006. Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations. *Journal of Finance* 61:655–687.
- Cremers, K., and V. B. Nair. 2005. Governance mechanisms and equity prices. *Journal of Finance* 60:2859–2894.
- Cremers, K. M., V. B. Nair, and K. John. 2008. Takeovers and the cross-section of returns. *Review of Financial Studies* 22:1409–1445.
- Cremers, M., and A. Ferrell. 2014. Thirty years of shareholder rights and firm value. *Journal of Finance* 69:1167–1196.
- Deng, X., and H. Gao. 2013. Nonmonetary benefits, quality of life, and executive compensation. *Journal of Financial and Quantitative Analysis* 48:197–218.
- Faleye, O. 2007. Classified boards, firm value, and managerial entrenchment. *Journal of Financial Economics* 83:501–529.
- Ferreira, M. A., and P. A. Laux. 2007. Corporate governance, idiosyncratic risk, and information flow. *Journal of Finance* 62:951–989.
- Field, L. C., and J. M. Karpoff. 2002. Takeover defenses of IPO firms. *Journal of Finance* 57:1857–1889.
- Gao, H., J. Luo, and T. Tang. 2015. Effects of managerial labor market on executive compensation: Evidence from job-hopping. *Journal of Accounting and Economics* 59:203–220.
- Garmaise, M. J. 2011. Ties that truly bind: Noncompetition agreements, executive compensation, and firm investment. *Journal of Law, Economics, and Organization* 27:376–425.
- Giroud, X., and H. M. Mueller. 2010. Does corporate governance matter in competitive industries? *Journal of Financial Economics* 95:312–331.
- Glaeser, S. 2018. The effects of proprietary information on corporate disclosure and transparency: Evidence from trade secrets. *Journal of Accounting and Economics, forthcoming* .
- Godfrey, E. R. 2004. Inevitable disclosure of trade secrets: Employee mobility v. employer's rights. *Journal of High Technology Law* 3:161–179.
- Gompers, P., J. Ishii, and A. Metrick. 2003. Corporate governance and equity prices. *Quarterly Journal of Economics* 118:107–155.
- Hainmueller, K. 2012. Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observations studies. *Political Analysis* 20:25–46.
- Harris, J. O. 2000. The doctrine of inevitable disclosure: A proposal to balance employer and employee interests. *Washington University Law Review* 78:325.

- Hellman, T., and E. Perotti. 2011. The circulation of ideas in firms and markets. *Management Science* 57:1813–1826.
- Jensen, M. C., and K. J. Murphy. 1990. Performance pay and top-management incentives. *Journal of Political Economy* 98:225–264.
- Johnson, W. C., J. M. Karpoff, and S. Yi. 2015. The bonding hypothesis of takeover defenses: Evidence from IPO firms. *Journal of Financial Economics* 117:307–332.
- Karpoff, J. M., R. J. Schonlau, and E. W. Wehrly. 2017. Do takeover defense indices measure takeover deterrence? *Review of Financial Studies* 30:2359–2412.
- Klasa, S., H. Ortiz-Molina, M. Serfling, and S. Srinivasan. 2018. Protection of trade secrets and capital structure decisions. *Journal of Financial Economics* 128:266–286.
- Klausner, M. 2013. Fact and fiction in corporate law and governance. *Stanford Law Review* 65:1325.
- Knoeber, C. R. 1986. Golden parachutes, shark repellents, and hostile tender offers. *American Economic Review* 76:155–167.
- Kogan, L., D. Papanikolaou, A. Seru, and N. Stoffman. 2017. Technological innovation, resource allocation, and growth. *Quarterly Journal of Economics* 132:665–712.
- Li, K., B. Qiu, and R. Shen. 2017. Organizational capital and mergers and acquisitions. *Journal of Financial and Quantitative Analysis*, forthcoming .
- Li, X. 2013. Productivity, restructuring, and the gains from takeovers. *Journal of Financial Economics* 109:250–271.
- Masulis, R. W., C. Wang, and F. Xie. 2007. Corporate governance and acquirer returns. *Journal of Finance* 62:1851–1889.
- Mulherin, H., and S. A. Simsir. 2015. Measuring deal premiums in takeovers. *Financial Management* 44:1–14.
- Novaes, W. 2003. Capital Structure Choice When Managers Are in Control: Entrenchment versus Efficiency. *Journal of Business* 55:49–82.
- Shleifer, A., and L. H. Summers. 1988. Breach of trust in hostile takeovers. In *Corporate takeovers: Causes and consequences*, pp. 33–68. University of Chicago Press.
- Smith, E. 2015. Do shareholders want less governance? Evidence from the adoption of antitakeover provisions. Working paper, University of Rochester.
- Sokolyk, T. 2011. The effects of antitakeover provisions on acquisition targets. *Journal of Corporate Finance* 17:612–627.
- Stein, J. C. 1988. Takeover threats and managerial myopia. *Journal of Political Economy* 96:61–80.
- Stráska, M., and G. Waller. 2010. Do antitakeover provisions harm shareholders? *Journal of Corporate Finance* 16:487–497.
- Stráska, M., and H. G. Waller. 2014. Antitakeover provisions and shareholder wealth: A survey of the literature. *Journal of Financial and Quantitative Analysis* 49:933–956.
- Tate, G. A., and L. Yang. 2016. The human factor in acquisitions: Cross-industry labor mobility and corporate diversification. Working paper, University of North Carolina.
- Zingales, L. 2000. In search of new foundations. *Journal of Finance* 55:1623–1653.
- Zwiebel, J. 1996. Dynamic capital structure under managerial entrenchment. *American Economic Review* 86:1197–1215.

Table 1

Summary statistics.

This table presents summary statistics of governance provisions (Panel A) and firm characteristics (Panel B) for the sample period 1990-2011. Values for the E-index are for the full sample period, while G-index and O-index values are for the subsample period 1990-2006. See Appendix C for variable definitions.

<i>Panel A: Antitakeover provisions</i>					
	Mean	Std. Dev.	P25	Median	P75
Takeover Defenses	3.34	1.75	2	3	5
<i>Limits to written consent</i>	0.42	0.49	0	0	1
<i>Classified board</i>	0.58	0.49	0	1	1
<i>Blank check</i>	0.88	0.33	1	1	1
<i>Director duties</i>	0.08	0.27	0	0	0
<i>Silver parachute</i>	0.02	0.14	0	0	0
<i>Pension parachute</i>	0.02	0.14	0	0	0
<i>Unequal voting</i>	0.02	0.14	0	0	0
<i>Limits to special meeting</i>	0.39	0.49	0	0	1
<i>Supermajority</i>	0.16	0.36	0	0	0
<i>Fair price</i>	0.26	0.44	0	0	1
<i>Poison pill</i>	0.52	0.50	0	1	1
Compensation	1.18	0.70	1	1	2
<i>Golden parachutes</i>	0.66	0.47	0	1	1
<i>Compensation plans</i>	0.52	0.50	0	1	1
State Law (net)	-0.11	0.48	0	0	0
<i>Business combination law</i>	-0.03	0.18	0	0	0
<i>Fair price law</i>	-0.01	0.11	0	0	0
<i>Control share acquisition law</i>	-0.06	0.23	0	0	0
<i>Directors duties law</i>	0.01	0.08	0	0	0
<i>Cash out law</i>	0.00	0.07	0	0	0
<i>Recapture of profits law</i>	0.01	0.12	0	0	0
Takeover Neutral	3.27	1.21	2	3	4
<i>Severance agreements</i>	0.07	0.26	0	0	0
<i>Director liabilities</i>	0.45	0.50	0	0	1
<i>Director indemnification</i>	0.26	0.44	0	0	1
<i>Director indemnification contracts</i>	0.10	0.30	0	0	0
<i>Limits to amend bylaws</i>	0.35	0.48	0	0	1
<i>Limits to amend charter</i>	0.23	0.42	0	0	0
<i>Anti-cumulative voting</i>	0.89	0.32	1	1	1
<i>Anti-secret ballot</i>	0.89	0.32	1	1	1
<i>Anti-greenmail</i>	0.04	0.20	0	0	0
G-index	9.05	2.75	7	9	11
E-index	2.50	1.48	1	3	4
O-index	6.95	2.00	6	7	8

Table 1 (continued)

<i>Panel B: Firm characteristics</i>					
	Mean	Std. Dev.	P25	Median	P75
Treatment Variable					
<i>IDD</i>	0.51	0.50	0.00	1.00	1.00
Control variables					
<i>Firm size</i>	7.55	1.68	6.33	7.39	8.61
<i>Market-to-book</i>	1.42	1.76	0.72	1.06	1.68
<i>Return on assets (%)</i>	8.14	10.99	3.66	8.11	12.92
<i>Leverage (%)</i>	19.38	18.11	3.78	16.73	29.75
<i>Cash ratio (%)</i>	12.94	15.98	2.08	6.41	17.64
<i>R&D intensity (%)</i>	2.68	5.94	0.00	0.00	2.64
<i>Property ratio (%)</i>	52.33	40.85	19.19	44.22	79.28
<i>Sales growth (%)</i>	16.98	732.18	1.30	7.68	16.83
<i>Abnormal returns (%)</i>	-0.31	0.19	-0.12	-0.03	0.06
<i>Firm risk (%)</i>	2.45	1.51	1.53	2.08	2.93
<i>Bid-ask spread (%)</i>	1.09	1.74	0.12	0.57	1.44
<i>Delaware incorporation (%)</i>	56.35	49.60	0.00	100.00	100.00
<i>State GDP growth (%)</i>	4.85	2.85	3.51	4.89	6.67
<i>Political balance (%)</i>	53.41	19.42	40.63	54.55	62.50
<i>Strength of CNCs</i>	3.97	2.13	3.00	4.00	5.00
<i>CEO ownership (%)</i>	1.60	4.98	0.00	0.15	0.67
Other partitioning variables					
<i>Ln(number of rivals)</i>	2.45	1.44	1.39	2.40	3.43
<i>Knowledge workers</i>	27.72	14.30	15.78	25.00	39.44
<i>Intangible assets (%)</i>	14.16	17.24	0.75	6.95	22.15
<i>CEO tenure</i>	7.99	7.72	2.70	5.59	10.50
<i>Blockholder (%)</i>	82.22	38.24	100.00	100.00	100.00
<i>CEO pay-performance sensitivity</i>	674.91	1622.57	68.28	194.19	548.47
Long-term innovation					
<i>Ln(1+number of patents)</i>	2.45	1.52	1.10	2.20	3.40
<i>Ln(1+patent citations)</i>	3.10	1.67	1.77	2.88	4.21
<i>Ln(1+trade secrets)</i>	1.51	0.68	1.10	1.39	1.95

Table 2

Adopting IDD and categories of antitakeover provisions.

This table reports the difference-in-differences estimates from OLS regressions of antitakeover provisions on IDD adoption by state courts. All regressions include firm and year fixed effects. Standard errors are clustered at the state and year level. ***, **, and * indicate significance at the 1%, 5%, and 10% level. All variables are defined in Appendix C.

	Defense	Compensation	State	Neutral
	(1)	(2)	(3)	(4)
<i>IDD</i>	0.090*** (2.80)	-0.011 (-0.94)	-0.011* (-1.76)	-0.000 (-0.03)
<i>Firm size</i>	0.111*** (6.15)	-0.001 (-0.07)	0.003 (0.63)	0.009 (1.02)
<i>Market-to-book</i>	0.004 (1.12)	-0.006** (-2.00)	-0.000 (-0.70)	-0.003 (-1.47)
<i>Return on assets</i>	-0.285*** (-3.70)	-0.024 (-0.63)	-0.015 (-0.76)	-0.090** (-2.17)
<i>Leverage</i>	-0.105** (-2.31)	-0.054** (-2.18)	0.023* (1.71)	0.077*** (2.72)
<i>Cash ratio</i>	-0.067 (-1.00)	-0.062* (-1.78)	0.056*** (2.98)	0.019 (0.55)
<i>R&D intensity</i>	-0.051 (-0.31)	-0.227** (-2.26)	0.073 (1.64)	-0.034 (-0.32)
<i>Property ratio</i>	0.157*** (3.69)	0.056** (2.49)	0.025* (1.70)	0.020 (0.81)
<i>Sales growth</i>	0.001*** (7.34)	-0.001*** (-8.63)	0.002*** (80.60)	0.000*** (18.15)
<i>Abnormal return</i>	1.236 (0.56)	0.666 (0.39)	0.319 (0.45)	0.523 (0.35)
<i>Firm risk</i>	-1.486*** (-2.67)	-1.333*** (-3.58)	-0.213 (-0.96)	-1.154*** (-3.32)
<i>Bid-ask spread</i>	0.537 (1.11)	0.811*** (2.72)	0.064 (0.46)	0.226 (0.67)
<i>Delaware incorporation</i>	0.564*** (9.03)	0.050* (1.92)	0.191*** (6.02)	0.171*** (4.09)
<i>State GDP growth</i>	-0.463 (-1.32)	0.177 (1.34)	-0.063 (-0.58)	-0.324** (-2.00)
<i>Political balance</i>	0.074 (1.13)	-0.048* (-1.70)	0.005 (0.28)	-0.160*** (-5.48)
<i>Strength of CNCs</i>	0.025 (1.38)	0.007 (0.85)	-0.007 (-1.44)	0.021** (2.06)
<i>CEO ownership</i>	-0.169 (-1.11)	-0.204** (-2.27)	0.023 (0.58)	-0.241*** (-3.10)
Firm & Year FE	Yes	Yes	Yes	Yes
Observations	29,167	29,167	29,167	29,167
Adjusted R ²	0.838	0.685	0.758	0.885

Table 3

Pre- and post-IDD trend analysis of antitakeover provision categories.

This table reports difference-in-differences estimates from regressions of antitakeover provisions on IDD adoption. We include seven indicator variables (IDD^{-3} , IDD^{-2} , IDD^{-1} , IDD^0 , IDD^{+1} , IDD^{+2} , IDD^{3+}) to capture pre- and post-IDD adoption trends. All regressions include firm and year fixed effects with standard errors clustered at the state and year level. ***, **, and * indicate 1%, 5%, and 10% significance levels. We define variables in Appendix C.

	Defense	Compensation	State	Neutral
	(1)	(2)	(3)	(4)
IDD^{-3}	0.040 (0.94)	-0.025 (-1.11)	-0.004 (-0.43)	0.017 (-0.84)
IDD^{-2}	0.030 (0.73)	-0.003 (-0.11)	-0.011 (-1.32)	0.009 (0.40)
IDD^{-1}	-0.010 (-0.43)	0.006 (0.34)	-0.017** (-2.43)	-0.003 (-0.16)
IDD^0	0.094*** (2.71)	0.025 (1.63)	-0.008 (-1.10)	-0.005 (-0.24)
IDD^{+1}	0.052* (1.78)	0.016 (1.02)	-0.013** (-2.02)	0.011 (0.49)
IDD^{+2}	0.056 (1.26)	0.017 (0.97)	-0.007 (-0.97)	0.009 (0.46)
IDD^{3+}	0.119*** (3.30)	-0.010 (-0.79)	-0.008 (-1.43)	0.011 (0.74)
<i>Firm size</i>	0.112*** (6.17)	-0.001 (-0.06)	0.003 (0.64)	0.010 (1.04)
<i>Market-to-book</i>	0.004 (1.15)	-0.006** (-2.00)	-0.000 (-0.73)	-0.003 (-1.47)
<i>Return on assets</i>	-0.288*** (-3.75)	-0.022 (-0.58)	-0.015 (-0.74)	-0.091** (-2.18)
<i>Leverage</i>	-0.105** (-2.31)	-0.055** (-2.22)	0.023* (1.71)	0.076*** (2.71)
<i>Cash ratio</i>	-0.065 (-0.97)	-0.062* (-1.76)	0.056*** (2.96)	0.020 (0.58)
<i>R&D intensity</i>	-0.053 (-0.32)	-0.226** (-2.24)	0.075* (1.69)	-0.032 (-0.30)
<i>Property ratio</i>	0.158*** (3.73)	0.055** (2.46)	0.025* (1.67)	0.020 (0.81)
<i>Sales growth</i>	0.001*** (7.33)	-0.001*** (-8.59)	0.002*** (81.36)	0.000*** (18.23)
<i>Abnormal return</i>	1.290 (0.59)	0.644 (0.38)	0.312 (0.44)	0.533 (0.35)
<i>Firm risk</i>	-1.500*** (-2.69)	-1.326*** (-3.56)	-0.211 (-1.00)	-1.154*** (-3.31)
<i>Bid-ask spread</i>	0.525 (1.09)	0.824*** (2.77)	0.063 (0.46)	0.214 (0.63)
<i>Delaware incorporation</i>	0.565*** (9.05)	0.050* (1.93)	0.192*** (6.03)	0.172*** (4.08)
<i>State GDP growth</i>	-0.453 (-1.30)	0.168 (1.28)	-0.070 (-0.63)	-0.316* (-1.95)
<i>Political balance</i>	0.065 (0.99)	-0.044 (-1.58)	0.003 (0.18)	-0.165*** (-5.64)
<i>Strength of CNCs</i>	0.033* (1.73)	0.001 (0.08)	-0.005 (-0.96)	0.024** (2.01)
<i>CEO ownership</i>	-0.177 (-1.16)	-0.204** (-2.27)	0.023 (0.59)	-0.243*** (-3.12)
Firm & Year FE	Yes	Yes	Yes	Yes
Observations	29,167	29,167	29,167	29,167
Adjusted R ²	0.838	0.685	0.758	0.885

Table 4

Adopting IDD and index measures of antitakeover provisions.

This table reports difference-in-differences estimates from OLS regressions of the governance indices, G-index, E-index and O-index on IDD adoption in columns (1), (2), and (3) respectively. Standard errors are clustered at the state and year level. Regressions of the G-index and O-index are for the subsample period 1990-2006. ***, **, and * indicate coefficients are statistically different from zero at the 1%, 5%, and 10% level. All variables are defined in Appendix C.

	G-index	E-index	O-index
	(1)	(2)	(3)
<i>IDD</i>	-0.003 (-0.10)	-0.020 (-1.32)	0.027 (1.24)
<i>Firm size</i>	0.111*** (4.36)	0.025** (2.01)	0.094*** (5.04)
<i>Market-to-book</i>	-0.001 (-0.20)	-0.008* (-1.96)	0.003 (1.02)
<i>Return on assets</i>	-0.214* (-1.89)	-0.169*** (-2.80)	-0.146* (-1.92)
<i>Leverage</i>	0.019 (0.29)	-0.102*** (-2.76)	0.129** (2.49)
<i>Cash ratio</i>	0.037 (0.37)	-0.202*** (-4.37)	0.221*** (2.80)
<i>R&D intensity</i>	-0.564** (-2.14)	-0.158 (-1.05)	-0.272 (-1.26)
<i>Property ratio</i>	0.067 (1.01)	0.001 (0.04)	0.150*** (3.13)
<i>Sales growth</i>	-0.096*** (-3.99)	0.001*** (9.34)	-0.052*** (-3.66)
<i>Abnormal return</i>	-3.973 (-1.17)	3.518 (1.53)	-5.533** (-2.48)
<i>Firm risk</i>	-1.989** (-2.36)	-2.695*** (-5.08)	-0.714 (-1.28)
<i>Bid-ask spread</i>	0.882 (1.29)	0.656 (1.53)	0.919* (1.70)
<i>Delaware incorporation</i>	0.525*** (3.20)	0.154*** (4.05)	0.352*** (2.61)
<i>State GDP growth</i>	0.211 (0.58)	-0.020 (-0.09)	0.139 (0.51)
<i>Political balance</i>	-0.250*** (-3.17)	-0.102*** (-2.66)	-0.142*** (-2.66)
<i>Strength of CNCs</i>	-0.009 (-0.31)	0.015 (1.07)	-0.022 (-0.95)
<i>CEO ownership</i>	-0.245 (-1.11)	-0.015 (-0.13)	-0.378** (-2.29)
Firm & Year FE	Yes	Yes	Yes
Observations	22,523	22,523	22,523
Adjusted R ²	0.907	0.873	0.898

Table 5

IDD and individual antitakeover provisions.

This table reports the difference-in-differences estimates from OLS regressions of individual antitakeover provisions on IDD adoption by state courts. All regressions include firm and year fixed effects. Standard errors are clustered at the state and year level. ***, **, and * indicate significance at the 1%, 5%, and 10% level. All variables are defined in Appendix C.

	Written consent	Classified board	Blank check	Directors' duties	Silver parachute	Pension parachute	Unequal voting	Special meeting	Super- majority	Poison pill	Fair price
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>IDD</i>	0.036*** (3.76)	0.015*** (3.50)	0.012*** (2.81)	0.008*** (3.60)	0.008*** (4.25)	0.007*** (2.99)	0.004** (2.39)	0.022 (1.17)	0.000 (0.06)	-0.010 (-1.31)	-0.011*** (-3.15)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	29,167	29,167	29,167	29,167	29,167	29,167	29,167	29,167	29,167	29,167	29,167
Adjusted R ²	0.670	0.903	0.828	0.935	0.716	0.739	0.786	0.500	0.885	0.775	0.919

Table 6

Cross-sectional partitions.

This table reports the difference-in-differences estimates from OLS regressions of takeover defense provisions on IDD adoption by state courts. In this regression, β_1 (β_2) is the coefficient on the interaction of *IDD* \times *High* (*IDD* \times *Low*) indicator. All regressions include firm and year fixed effects. Standard errors are clustered at the state and year level. ***, **, and * indicate significance at the 1%, 5%, and 10% level. All variables are defined in Appendix C.

	Number of rivals	Strength of CNCs	Knowledge workers	R&D intensity	Intangible asset intensity	CEO tenure	Block holders	CEO PPS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>IDD</i> \times <i>High</i> number of rivals	0.199*** (3.67)							
<i>IDD</i> \times <i>Low</i> number of rivals	0.081** (2.53)							
<i>IDD</i> \times <i>High</i> CNC enforcement		-0.088** (-2.55)						
<i>IDD</i> \times <i>Low</i> CNC enforcement		0.165*** (4.07)						
<i>IDD</i> \times <i>High</i> innovation			0.231*** (4.39)	0.124*** (3.61)	0.149*** (3.53)			
<i>IDD</i> \times <i>Low</i> innovation			0.051* (1.71)	0.037 (1.00)	0.068** (2.19)			
<i>IDD</i> \times <i>High</i> entrenchment						0.045 (1.22)	0.075 (1.45)	0.085*** (2.58)
<i>IDD</i> \times <i>Low</i> entrenchment						0.092*** (2.65)	0.091** (2.41)	0.073* (1.67)
<i>High</i> number of rivals	-0.093*** (-2.95)							
<i>High</i> CNC enforcement		-0.085** (1.72)						
<i>High</i> innovation			0.007 (0.22)	-0.024 (-0.79)	-0.058*** (-3.09)			
<i>High</i> entrenchment						-0.023 (-0.98)	0.002 (0.09)	0.001 (0.04)
<i>F</i> -test ($\beta_1 = \beta_2$)	6.58***	23.27***	22.02***	7.94***	9.13***	2.11	0.22	0.11
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	29,167	29,167	29,167	29,167	29,167	23,477	21,410	23,113
Adjusted R ²	0.838	0.838	0.838	0.838	0.838	0.827	0.832	0.830

Table 7

Long-term innovation post-IDD.

This table reports the difference-in-differences estimates from OLS regressions of long-run innovation after partitioning firms based on changes in takeover defense provisions. *Defense Up* takes the value of one if the firm experiences an increase in the total value of takeover defense as compared to the prior year. The variable *Defense Not Up* is equal to $(1 - \textit{Defense Up})$. In this regression, β_1 (β_2) is the coefficient on the interaction of $\textit{IDD} \times \textit{Defense Up}$ ($\textit{IDD} \times \textit{Defense Not Up}$) indicator. We report the number of patents in Panel A and the citation-weighted patent value in Panel B. Since ISS data on takeover defense provisions start in 1990, all tests are for the period 1991 to 2011. In Panel C, the dependent variable is the natural log of one plus the number of times a firm references “trade secrets” or “trade secrecy” in its annual SEC Form 10-K filing. These tests for the period 1997 to 2011. All regressions include firm and year fixed effects. Standard errors are clustered at the state and year level. ***, **, and * indicate significance at the 1%, 5%, and 10% level. All variables are defined in Appendix C.

Panel A: Patent count

	Patents 1-year	Patents 2-years	Patents 3-years	Patents 4-years	Patents 5-years
	(1)	(2)	(3)	(4)	(5)
<i>IDD</i> × <i>Defense Up</i>	0.161*** (2.62)	0.126** (2.30)	0.116** (2.12)	0.053 (0.96)	0.110* (1.95)
<i>IDD</i> × <i>Defense Not Up</i>	0.023 (0.69)	0.005 (0.16)	0.002 (0.06)	−0.017 (−0.62)	−0.026 (−0.99)
<i>Defense Up</i>	−0.112*** (−2.65)	−0.100*** (−2.65)	−0.074* (−1.95)	−0.045 (−1.26)	−0.062* (−1.69)
<i>F</i> -test ($\beta_1 = \beta_2$)	6.13**	5.31**	3.72*	2.88*	10.73***
Controls	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	9,207	9,813	9,847	9,691	9,421
Adjusted R ²	0.868	0.894	0.911	0.924	0.937

Panel B: Patent citations

	Patent citations 1-year	Patent citations 2-years	Patent citations 3-years	Patent citations 4-years	Patent citations 5-years
	(1)	(2)	(3)	(4)	(5)
<i>IDD</i> × <i>Defense Up</i>	0.175** (2.54)	0.098* (1.65)	0.113* (1.94)	0.052 (0.93)	0.115* (1.93)
<i>IDD</i> × <i>Defense Not Up</i>	0.026 (0.69)	0.007 (0.21)	0.002 (0.07)	−0.016 (−0.56)	−0.024 (−0.87)
<i>Defense Up</i>	−0.109** (−2.21)	−0.064 (−1.57)	−0.058 (−1.43)	−0.030 (−0.81)	−0.052 (−1.33)
<i>F</i> -test ($\beta_1 = \beta_2$)	5.64**	2.91*	4.40**	1.79	6.22**
Controls	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	9,207	9,813	9,847	9,691	9,421
Adjusted R ²	0.857	0.890	0.909	0.923	0.932

Table 7 (continued)

<i>Panel C: Trade secrets</i>					
	Count	Count	Count	Count	Count
	1-year	2-years	3-years	4-years	5-years
	(1)	(2)	(3)	(4)	(5)
<i>IDD</i> × <i>Defense Up</i>	−0.036 (−0.58)	−0.073 (−1.31)	−0.018 (−0.33)	0.003 (0.07)	0.046 (0.94)
<i>IDD</i> × <i>Defense Not Up</i>	−0.101** (−2.36)	−0.103** (−2.54)	−0.083** (−2.15)	−0.053 (−1.38)	−0.026 (−0.70)
<i>Defense Up</i>	−0.020 (−0.54)	0.014 (0.50)	0.005 (0.19)	0.001 (0.03)	−0.003 (−0.11)
<i>F</i> -test ($\beta_1 = \beta_2$)	1.91	0.63	3.41*	1.61	2.94*
Controls	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	7,518	10,062	11,392	12,396	13,173
Adjusted R ²	0.441	0.568	0.641	0.682	0.713

Table 8

Probability of being acquired.

This table reports regression estimates of the probability of being acquired after partitioning firms based on changes in takeover defense provisions. *Defense Up* takes the value of one if the firm experiences an increase in the total value of takeover defense as compared to the prior year. The variable *Defense Not Up* is equal to $(1 - \textit{Defense Up})$. In this regression, β_1 (β_2) is the coefficient on the interaction of *IDD* \times *Defense Up* (*IDD* \times *Defense Not Up*) indicator. The *IDD* indicator takes the value of one if IDD is adopted by a firm's headquarter state in the year of IDD adoption. All regressions include firm and year fixed effects. Standard errors are clustered at the state and year level. ***, **, and * indicate significance at the 1%, 5%, and 10% level. All variables are defined in Appendix C.

	1-year	2-years	3-years	4-years	5-years
	(1)	(2)	(3)	(4)	(5)
<i>IDD</i> \times <i>Defense Up</i>	-0.049*** (-3.10)	-0.039* (-1.90)	-0.054** (-2.15)	-0.046 (-1.48)	-0.020 (-1.23)
<i>IDD</i> \times <i>Defense Not Up</i>	-0.004 (-0.38)	-0.014 (-0.94)	-0.011 (-0.58)	-0.002 (-0.10)	-0.002 (-0.18)
<i>Defense Up</i>	-0.000 (-0.03)	0.001 (0.15)	0.003 (0.57)	0.001 (0.12)	0.000 (0.10)
<i>F</i> -test ($\beta_1 = \beta_2$)	6.61***	1.13	2.99*	1.62	0.90
Controls	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	25,440	25,440	25,440	25,440	25,440
Adjusted R ²	0.144	0.383	0.536	0.656	0.745

Appendix A: Definitions of antitakeover provisions

This appendix describes the antitakeover provisions in the ISS database based on the categories used in the paper. The descriptions are based heavily on the definitions in Gompers et al. (2003) and Bebchuk et al. (2008). One can refer to these papers for more detailed definitions of the provisions.

Takeover Defenses

Limits to written consent: a provision limiting shareholders' ability to act via written consent (as opposed to acting through a vote at the shareholders' meeting).

Classified board: a board in which directors are divided into separate classes (typically three) with each class being elected to overlapping terms.

Blank check: this is a type of preferred stock that, when authorized, gives the board broad discretion in establishing the stock's voting, dividend, and other rights when issued.

Directors' duties: a provision that permits the board to consider non-shareholder interests in evaluating a possible change in control.

Silver parachute: a severance agreement that provides benefits to a large number of firm employees in the event of firing, demotion, or resignation following a change in control.

Pension parachute: provisions that limit the ability of an acquirer from using surplus money in a pension plan to fund the acquisition.

Unequal voting: a provision by which voting power changes based on certain conditions.

Limits to special meeting: a provision limiting shareholders' ability to act by calling a special meeting (as opposed to waiting for the regularly scheduled shareholders' meeting).

Supermajority: requirement that requires more than a majority of shareholders to approve a merger.

Poison pill: a shareholder right that is triggered in the event of an unauthorized change in control that typically renders the target company financially unattractive or dilutes the voting power of the acquirer.

Fair price: a requirement that a bidder pays all shareholders a fair price, typically the highest price paid by a bidder prior to a tender offer being made.

Compensation

Golden parachutes: a severance agreement that provides benefits to management/board members in the event of firing, demotion, or resignation following a change in control.

Compensation plans: a plan that accelerates benefits in the event of a change in control. Compensation plan data are not available in IRRC after 2006. The results for the Compensation category are similar when we restrict our tests to the relevant sample period.

State Laws³⁶

Business combination law (net): a law that limits the ability of an acquirer to conduct certain transactions with the acquired company post-acquisition.

³⁶Unlike IDD, which is based on headquarter state, these state laws are based on incorporation state. Thus, we only examine the choice to opt-in or opt-out of state laws and present the net value (opt-in minus opt-out) when both are available.

Fair price law (net): the fair price law works similar to the firm-level provision.

Control share acquisition law (net): These are similar to supermajority provisions. These laws require a majority of disinterested shareholders to vote on whether a newly qualifying large shareholder has voting rights.

Cash out law (opt-out): a provision that enables shareholders to sell to a controlling shareholder, usually at the highest price recently paid by the controlling shareholder.

Directors' duties (opt-out): the directors' duties laws allow similar expansion of constituencies when evaluating a takeover.

Recapture of profits (opt-out): this law is similar to anti-greenmail provision, and it enables firms to recapture raiders' profit earned in the secondary market.

Takeover Neutral

Severance agreements: a contract that ensures executives some income protection in the event of losing their positions.

Director liabilities: a provision that limits the personal liability of its directors.

Director indemnification: a charter or bylaw provision indemnifying the firm's officers and directors against certain legal expenses and judgments as a result of their conduct.

Director indemnification contracts: a contract with individual officers and directors promising indemnification against certain legal expenses and judgments as a result of their conduct.

Limits to amend bylaws: a provision that constrain shareholders' ability to amend the governing documents of the corporation. Common limitations include a supermajority vote requirement for bylaw amendments and the total elimination of the ability of shareholders to amend the bylaws.

Limits to amend charter: a provision that limits shareholders' ability to amend the governing documents of the corporation. A common limitation requires a supermajority vote for charter amendments.

Cumulative voting: a provision that permits shareholders to apportion the total number of votes they are entitled to cast in the election of directors in any fashion they desire. To be consistent with the rest of the provisions, i.e., such that higher values reflect lower shareholder power, we rescale this provision to have a higher value if this provision does not exist and call it Anti-cumulative voting.

Secret ballot: a system of voting that ensures management does not look at individual proxy cards. To be consistent with the rest of the provisions, i.e., such that higher values reflect lower shareholder power, we rescale this provision to have a higher value if this provision does not exist and call it Anti-secret ballot.

Anti-greenmail: a provision that prevents an entity from acquiring a block of stock in a company and selling it back to the company at an above-market price.

Appendix B: Staggered court decisions of the Inevitable Disclosure Doctrine

This table provides the dates of Inevitable Disclosure Doctrine (IDD) adoption or rejection based on state court decisions. See Klasa et al. (2018) for a full list of precedent-setting cases by state.

State	Precedent-setting court decision date	Court decision year	Court decision
New York	12/5/1919	1919	Adopt
Florida	7/11/1960	1960	Adopt
Delaware	5/5/1964	1964	Adopt
Michigan	2/17/1966	1966	Adopt
North Carolina	6/17/1976	1976	Adopt
Pennsylvania	2/19/1982	1982	Adopt
Minnesota	10/10/1986	1986	Adopt
New Jersey	4/27/1987	1987	Adopt
Illinois	2/9/1989	1989	Adopt
Texas	5/28/1993	1993	Adopt
Massachusetts	10/13/1994	1994	Adopt
Indiana	7/12/1995	1995	Adopt
Connecticut	2/28/1996	1996	Adopt
Iowa	4/1/1996	1996	Adopt
Arkansas	3/18/1997	1997	Adopt
Washington	12/30/1997	1997	Adopt
Utah	1/30/1998	1998	Adopt
Georgia	6/29/1998	1998	Adopt
Ohio	9/29/2000	2000	Adopt
Missouri	11/2/2000	2000	Adopt
Florida	5/21/2001	2001	Reject
Michigan	4/30/2002	2002	Reject
Texas	4/3/2003	2003	Reject
Kansas	2/2/2006	2006	Adopt

Appendix C: Variable Definitions

Variable	Definition
Abnormal return	The daily stock return of the firm's common stock less the returns of the CRSP equal-weighted index averaged over the year.
Bid-ask spread	The CRSP closing ask price less closing bid price divided by the midpoint of the closing ask and bid price averaged over the year.
Blockholder	An indicator variable equal to one if the firm has at least one outside institutional owner holding more than 5% of outstanding shares in the Thomson Reuters 13F Institutional Holdings database.
Cash ratio	Cash and short-term investments divided by total assets, from Compustat.
CEO pay-performance sensitivity (PPS)	The sensitivity of a CEO's wealth to stock price changes, measured as delta, or the change in the dollar value of the executive's stock and options for a 1% change in the stock price Execucomp following Coles et al. (2006).
CEO ownership	The percent of shares outstanding owned by the CEO excluding options from Execucomp divided by common shares outstanding from Compustat. Missing values are set to zero.
Delaware incorporation	An indicator variable which equals one if the firm is incorporated in Delaware, and zero otherwise.
Firm risk	The standard deviation of daily abnormal returns averaged over the year. Abnormal returns are calculated using the CRSP equal-weighted index.
Firm size	The natural log of the book value of total assets, from Compustat.
CEO tenure	The number of years the CEO has held their position, from Execucomp.
IDD	An indicator variable which equals one if the state recognizes the IDD, and zero otherwise.
IDD ^{+/- n}	The superscript denotes the number of years (n) before or after the state recognized the IDD.
Intangible asset intensity	Intangible assets divided by total assets, from Compustat. Intangible assets include items such as copyrights, engineering drawings, goodwill, licenses, patents, trademarks, computer software, etc.
Knowledge workers	The fraction of knowledge workers among all workers in a firm, from the Integrated Public Use Microdata Series (IPUMS) database.

Appendix C: Continued

Variable	Definition
Leverage	Total debt divided by total assets, from Compustat.
Market-to-book	Market value of equity and debt divided by total assets, from Compustat.
Number of rivals	The number of rivals is the natural log of one plus the number of Compustat firms headquartered in the same state that operate in the same 3-digit Standard Industrial Classification (SIC) code during the year.
Patent citations	The yearly number of forward patent citations scaled by book value of assets.
Patent count	The yearly number of patents.
Political balance	The proportion of a state's congress members in the U.S. House of Representatives that belong to the Democratic Party, which captures the political leaning in the state. ³⁷
Property ratio	The gross property, plant and equipment (PPE) value divided by total assets. We use the net PPE value for observations with missing gross PPE in Compustat.
R&D Intensity	The research and development (R&D) expenses divided by total assets, from Compustat. Missing values of R&D are set to zero.
Return on assets	Operating income divided by total assets, from Compustat.
Sales growth	The average growth in total sales over the past three years, from Compustat.
State GDP growth	The one-year growth rate of the annual state gross domestic product (GDP), from the Bureau of Economic Analysis.
Strength of CNCs	The Bird and Knopf (2015) index of the enforceability of covenants not to compete. The index takes the value of 0 to 9, where larger values represent a higher level of noncompetition agreement enforceability in each state.
Trade secrets	The number of times a firm references "trade secrets" or "trade secrecy" in its annual SEC Form 10-K filing.

³⁷ For firms headquartered in the District of Columbia (DC), we set this variable equal to one. Although DC residents have no voting representation in the U.S. House of Representatives, their citizens always elect a Democratic non-voting delegate to the U.S. House of Representatives during our sample period.