Playing it Safe?
Managerial Preferences, Risk, and Agency Conflicts*

Todd A. Gormley† and David A. Matsa‡

December 18, 2015

Abstract

This paper examines managers' incentive to "play it safe." We find that, after managers are insulated by the adoption of an antitakeover law, managers take value-destroying actions that reduce their firms' stock volatility and risk of distress. To illustrate one such action, we show that managers undertake diversifying acquisitions that target firms likely to reduce risk, have negative announcement returns, and are concentrated among firms whose managers gain the most from reducing risk. Our findings suggest that instruments typically used to motivate managers, like greater financial leverage and larger ownership stakes, exacerbate risk-related agency challenges.

(*JEL* D22, D81, G32, G34, K22)
Keywords: risk, managerial preferences, agency conflicts, acquisitions

* For helpful comments, we thank Jie Cai, David Cicero, Jonathan Cohn, Alex Edmans, Eliezer M. Fich, Jonathan Karpoff, E. Han Kim, Stefan Lewellen, Doron Levit, Gregor Matvos, Ernst Maug, Kasper Nielsen, Michael Roberts, Wei Wang, and seminar participants at the Florida State University SunTrust Conference, HKUST Finance Symposium on Corporate Finance, Jackson Hole Finance Group, IDC Herzliya Annual Conference on Financial Economics, Midwest Finance Association, NBER Summer Institute, Case Western Reserve University, Drexel University, Harvard University, McGill University, Pennsylvania State University Harrisburg, University of Miami, University of Colorado, University of Melbourne, University of New South Wales, University of Pennsylvania, University of Sydney, University of Technology Sydney, and University of Virginia. We are grateful to Moshe Cohen, Peter Cziraki, Jonathan Karpoff, James S. Linck, Angie Low, Dimitris Papanikolaou, Moqi Xu, and David Yermack for providing data used in this study. Grant Clayton, Matthew Denes, and Christine Dobridge provided research assistance. Gormley thanks the Rodney L. White Center for Financial Research and the Brandywine Global Investment Management Research Fellowship for financial support.
† The Wharton School, University of Pennsylvania, 3620 Locust Walk, Suite 2400, Philadelphia, PA, 19104. Phone: (215) 746-0496. Fax: (215) 898-6200. E-mail: tgormley@wharton.upenn.edu
‡ Kellogg School of Management, Northwestern University, and NBER, 2001 Sheridan Road, Evanston, IL 60208. Phone: (847) 491-8337. Fax: (847) 491-5719. E-mail: dmatsa@kellogg.northwestern.edu

> *"The dangers of taking too much risk are very clear. We're reminded of them in the news every day…Unfortunately, we rarely hear any warnings about playing it safe…The dangers of playing it safe aren't sudden, obvious, and dramatic. They don't make headlines…The dangers of playing it safe are hidden, silent killers."*
>
> — *Taking Smart Risks*, by Doug Sundheim

Existing studies largely focus on two aspects of managerial preferences that lead managers to act against the best interest of shareholders: private benefits and costly effort. First, managers have an incentive to undertake value-destroying activities that create private benefits for themselves, such as in "empire building" (Baumol, 1959; Marris, 1964; Williamson, 1964). Second, managers are tempted to "enjoy the quiet life" by exerting less effort than shareholders desire (Holmström, 1979; Grossman and Hart, 1983; Bertrand and Mullainathan, 2003). This paper sheds light on a third, often ignored agency conflict: motivated by risk aversion or career concerns, managers have an incentive to take on less risk than is desired by a diversified shareholder or even undertake value-destroying actions that reduce the firm's risk (Jensen and Meckling, 1976; Amihud and Lev, 1981; Smith and Stulz, 1985; Holmstrom, 1999). This "playing it safe," as its described in Doug Sundheim's business book *Taking Smart Risks* (see above), reduces the incidence of negative corporate outcomes that are personally costly to the manager. Although risk-related conflicts are pervasive in agency theory, their empirical relevance is unclear. This paper shows that such risk-related conflicts are in fact widespread.

Risk-related agency conflicts have important implications for optimal corporate policies and likely the macroeconomy. As we illustrate below in a simple agency model of corporate investment, the corporate policies and compensation structures that maximize shareholder value are quite different when risk, rather than costly effort or private benefits, is the dominant driver of managerial preferences. For example, although increasing a firm's leverage can induce managerial effort and curtail wasteful expenditures (Jensen, 1986), it can also amplify risk-related conflicts by increasing the manager's equity risk (Parrino, Poteshman, and Weisbach, 2005). Likewise, the increasingly widespread use of equity-based executive compensation (Frydman and Jenter, 2010) and the termination of CEOs for poor corporate performance (Jenter and Lewellen, 2015) exacerbate, rather than alleviate, risk-related agency conflicts because they increase the manager's incentive to reduce the firm's risk. By preventing individual firms from taking on risk, risk-related agency conflicts can also hamper aggregate investment and economic growth. Indeed, observers have argued that an increasingly risk-averse culture among U.S. firms is slowing the long-term growth of the U.S. economy (Casselman, 2013).

To assess the importance of agency conflicts arising from managers' risk preferences, we exploit anti-hostile takeover laws as a source of variation in external shareholder governance. Because hostile takeovers usually involve replacing the manager, an active market for corporate control is thought to play an important role in corporate governance (Manne, 1965; Jensen and Meckling, 1976; Scharfstein, 1988). By making it more difficult to remove a manager who engages in value-destroying activities, such laws weaken shareholder governance and increase the scope for managerial agency conflicts. Specifically, we examine the effects of "business combination" (BC) laws and exploit their staggered adoption across U.S. states using a difference-in-differences estimation strategy, similar to that of Bertrand and Mullainathan (2003) and others, that compares changes in the behavior of firms incorporated in states that enact BC laws to that of firms incorporated elsewhere. We control for both unobserved, time-invariant differences across firms and unobserved, time-varying differences across industries; and because many firms are incorporated in a different state than where they are located, we are also able to control for unobserved time-varying, state-level conditions that coincide with the laws' adoption.

We chose to focus the analysis in this paper on BC laws because they have been heavily studied and are known to reveal managers' underlying preferences. In particular, this paper seeks to establish the importance of playing it safe preferences in the same empirical setting that was used to establish managers' preference for a quiet life (Bertrand and Mullainathan, 2003). In other words, we ask: do managers *also* have a preference to play it safe? By reducing the disciplining threat of a takeover but not otherwise affecting managers' personal exposure to volatility and distress risk, BC laws can increase managers' willingness to take value-destroying, risk-reducing actions that are typically stifled by takeover pressure.

We find that firms indeed reduce their risk when the threat of a hostile takeover declines. As shown in our theoretical framework below, managers benefit most directly from reducing their firm's stock volatility (because of their undiversified holdings) and distress risk (because it puts their private benefits at risk). After a BC law is adopted in a firm's state of incorporation, stock volatility and distress risk decrease. Average stock volatility declines by roughly 7.5 percent of a standard deviation, and the likelihood of bankruptcy, liquidation, or other negative performance-related firm exit declines by about 25 percent of a standard deviation. Both of these decreases are measured relative to firms headquartered in the same state and operating in the same 4-digit SIC industry and both effects are statistically significant at the 1 percent level.

Although these results imply that agency costs lead managers to reduce their firms' risk,

it does not clarify the source of this conflict. Managers' risk preference could be motivating them to play it safe and intentionally reduce their firms' risk. Alternatively, managers' reluctance to exert effort could lead them to take to fewer risky investments. To investigate the nature of the agency conflict, we analyze firms' acquisition activity. We focus on acquisitions for three reasons. First, prior evidence suggests that managers use diversifying acquisitions as a way to reduce their firms' risk (Amihud and Lev, 1981; May, 1995; Cai and Vijh, 2007; Acharya, Amihud, and Litov, 2011; Gormley and Matsa, 2011). Second, acquisitions have the potential to destroy substantial shareholder wealth (Moeller, Schlingemann, and Stulz, 2005). Third, any observed increase in acquisitions would *not* be consistent with managers simply exerting less effort when governance is weakened.[1]

Consistent with managers exerting more effort to reduce their firms' risk, we find that firms sharply increase their diversifying acquisitions. Firms facing the reduced takeover threat undertake, on average, 27 percent more acquisitions, two-thirds of which diversify the firms into new industries. These deals appear to destroy shareholder value: the acquirers' average cumulative abnormal announcement return is −5.6 percent, which is significantly lower than acquisitions undertaken before the BC laws' adoption.[2] Consistent with a managerial motive to reduce risk, the additional deals are funded largely with equity rather than cash, disproportionately target firms likely to reduce stock volatility and distress risk, and are indeed associated with subsequent declines in both stock volatility and distress.

Cross-sectional heterogeneity in firms' response to BC laws suggests that the increase in diversifying acquisitions is driven by managers playing it safe rather than managers engaging in empire-building. Theory predicts empire building motives to be stronger at firms with high cash flow, low leverage, and low distress risk (Jensen, 1986) and risk-reducing motives to be stronger at firms with low cash flow, high leverage, and a greater potential to reduce distress risk (Jensen and Meckling, 1976; Parrino, Poteshman, and Weisbach, 2005). Consistent with managers playing it safe, the increase in diversifying acquisitions is concentrated among firms with lower

[1] While an increase in acquisitions after passage of an anti-takeover law might seem counterintuitive, it is important to recognize that the BC laws only make *hostile* takeovers of target firms *incorporated* in that state more difficult; friendly mergers are unaffected by the law, as are hostile takeovers of firms incorporated elsewhere, even when the acquirer is incorporated in the affected state.

[2] These negative average announcement returns, which are weighted by deal value, compliment the large body of existing evidence finding that state-level antitakeover laws increase the scope for managerial activities that destroy shareholder value. For example, the stock prices of firms affected by such laws decrease in reaction to the laws' initial press announcement (Karpoff and Malatesta 1989) but recover if they exempt themselves from the statute (Szewczyk and Tsetsekos 1992).

cash flow, greater leverage, and greater distress risk. Affected firms with below median cash flow or above median leverage immediately before a BC law is adopted undertake 25–30 percent more diversifying acquisitions afterwards than non-affected firms with similar cash flow or leverage. We find no increase in the number of acquisitions by firms with above median cash flow or below median leverage. We obtain similar findings using other measures of distress risk, such as high stock volatility, high operating asset volatility, and low cash.

We also explore the underlying sources of managers' preference to play it safe. In theory, such preferences may be motivated by both risk aversion and career concerns, and indeed, we find evidence for both mechanisms. Consistent with managerial risk aversion, we find that holding a large ownership stake makes managers *more* likely to play it safe, because managers of these firms have more of their financial wealth tied to the firms' success. After a BC law is adopted, affected firms with an above median share of inside ownership increase diversifying acquisitions by about 28 percent more than unaffected firms with similar ownership levels. We observe no increase in diversifying acquisitions among firms with below median inside ownership. Consistent with career concerns also being an important factor, we find that younger managers, who have stronger career-related incentives, are more likely to play it safe. Specifically, the increase in diversifying acquisitions is strongest among CEOs that are less than 55 years old when a BC law is adopted in their firm's state of incorporation.

Various additional tests help to exclude alternative interpretations of the estimates. First, we find no measureable differences in the ex ante characteristics of firms incorporated in states adopting the laws. Second, there are no pre-existing trends in acquisitions or the other dependent variables before the laws come into effect. Third, the location state-by-year and industry-by-year fixed effects control for political economy or business cycle factors that may have coincided with or led to the laws' passage. Fourth, excluding firms that lobbied for state-level takeover protections and controlling for other state-level legal changes and court rulings pertaining to takeovers (see Karpoff and Wittry, 2014) does not alter our findings. Fifth, we estimate similar effects on firms incorporated in states adopting BC laws whether they operate in the state or elsewhere. All five of these results suggest that our findings are not explained by legislative endogeneity. Sixth, cross-sectional tests suggest that the decline in risk-taking is driven by managerial preferences as opposed to the interests of unions or debt holders. Finally, our findings are robust to alternative samples, time periods, and empirical specifications, including excluding firms incorporated in Delaware (50 percent of observations), or individually excluding any of the 32 other states that adopted a BC law.

Although our analysis focuses on acquisitions to illustrate the importance of managers playing it safe, acquisitions are only one of many corporate outcomes likely to be affected. For example, playing it safe likely motivates managers to forgo risky investments in research and development (R&D). Indeed, BC laws have been associated with reductions in patenting (Atanassov, 2013). Nevertheless, our analysis focuses on acquisitions because, for most corporate outcomes, including R&D expenditures, pursuing the quiet life and playing it safe are observationally equivalent. By analyzing acquisitions, we provide evidence of managers playing it safe in a way that can be distinguished empirically from them pursuing the quiet life.

Overall, our evidence suggests that avoiding empire building and motivating managerial effort are not the only challenges shareholders face. While prior research links weakened governance to managers exerting less effort (Bertrand and Mullainathan, 2003), we show that weakened governance also leads many managers to play it safe by actively working to reduce their firms' risks. We complement the existing literature by showing that various aspects of managerial preferences manifest when governance is weakened and that which aspect is the most salient varies across firms in ways consistent with theoretical predictions.

The multiplicity of managerial agency conflicts implies that there are tradeoffs in how leverage and inside ownership affect agency conflicts within firms. Although we find that both exacerbate managers' incentive to play it safe, they can mitigate other agency conflicts. Indeed, we confirm that firms with little leverage or inside ownership tend to suffer reductions in ROA after a BC law's adoption, which is consistent with leverage and inside ownership motivating managerial effort. These findings support agency theories that highlight how inside ownership can both create shareholder value by encouraging effort *and* destroy shareholder value by discouraging risk-taking (e.g., Holmström, 1999). Debt's tendency to magnify risk-related managerial agency conflicts is less developed in economic theory. We illustrate this managerial agency cost of debt in a simple model of corporate investment, and our empirical findings suggest that it is economically important and affects firms' optimal capital structures.[3]

Our paper contributes to the growing literature on how managers' exposure to risk affects the way that they manage their firms. In a seminal paper, Chevalier and Ellison (1999) show that career concerns affect mutual fund managers' portfolio choices. We apply a similar idea to corporate leadership. Related work shows that career concerns affect project choices and

[3] Note that this agency cost of debt refers to a different concept than manager's tendency to act in the interests of shareholders over bondholders when the two's interests diverge, which is often referred to as the "agency cost of debt" (Jensen and Meckling, 1976).

strategic alliances in the motion picture industry (Ravid and Basuroy, 2004; Palia, Ravid, and Reisel, 2008) and the willingness of acquisition targets' CEOs to agree to a takeover (Jenter and Lewellen, 2015). Other research finds that CEOs' risk preferences affect their firms' responses to changes in the firms' risk environment (Gormley and Matsa, 2011; Panousi and Papanikolaou, 2012) and that executives' compensation and contracts affect how managers act on their risk preferences (e.g., Hirshleifer and Suh, 1992; Tufano, 1996; Core, 1999; Coles, Daniel, and Naveen, 2006; Acharya and Bisin, 2009; Low, 2009; Kim and Lu, 2011; Cziraki and Xu, 2014; Brisley, Cai, and Nguyen, 2015). We build on this literature by showing that managers have an underlying preference to take on too little risk when governance is weakened, by investigating the underlying determinants of this preference (managerial risk aversion and career concerns), and by establishing that inside ownership, financial leverage, volatility, and corporate distress aggravate this risk-related agency conflict.

Our paper also builds on the literature studying the importance of BC and other anti-takeover laws by providing an entirely new perspective on what motivates managerial responses to these laws. Although papers have found evidence of firms and managers reducing their exposure to risk following a BC law's adoption, these findings could be consistent with many explanations, and none of these papers directly test the possibility that a managerial preference to reduce risk drives their findings.[4] Our paper is the first to show that the reduction in risk is *not* merely a side effect of managers exerting less effort but instead seems to reflect managers' risk preferences. Our analysis also illustrates how this tendency to play it safe varies across firms. In this regard, our paper is also similar to Giroud and Mueller (2010), John, Li, and Pang (2010), and Atanassov (2013), who find that agency conflicts arising from costly effort are likely to be more severe for firms in less competitive industries, with greater cash flow, and with less leverage. In contrast, we show that the agency conflict arising from managers' risk preferences is more severe among firms that have traditionally been viewed as *less* prone to agency conflicts—firms with *lower* cash flow, *greater* leverage, and *higher* inside ownership.

Finally, our paper illustrates the importance of properly accounting for unobserved

[4] For example, Garvey and Hanka (1999) find that firms reduce their leverage; Yun (2009) finds that firms increase their cash holdings relative to lines of credit; Francis, Hasan, John, and Waisman (2010) find that bond values increase; and Atanassov (2013) finds that patenting declines. However, neither Yun (2009), Francis, et al (2010), nor Atanassov (2013), even discusses the possibility of a managerial preference to reduce risk as an explanation for their findings; instead, they attribute their findings to, respectively, managerial opportunism and a private benefit of discretion, BC laws shielding bondholders from expropriation in takeovers, and a managerial preference to shirk. While Garvey and Hanka (1999) do mention the possibility of a managerial preference to reduce risk, they never attempt to differentiate this possible explanation from alternative agency conflict explanations proposed in their paper.

heterogeneity and of avoiding endogenous controls. The existing literature's focus on agency conflicts arising from costly effort is largely driven by the lack of evidence that firms increase their acquisitions when takeover threats are reduced. We show that the failure to detect this increase in acquisitions was driven by two errors in the workhorse empirical specification relied on in this literature: the average effects (AvgE) estimator (Gormley and Matsa, 2014) and endogenous controls (Angrist and Pischke, 2009). Our findings illustrate how these flawed approaches can confound researchers' inferences.

1. Theoretical Framework

> *"Nobody likes to fail but failure is an essential part of life and learning. If your uniform isn't dirty, you haven't been in the game."*
> — Federal Reserve Chairman Ben Bernanke, June 2, 2013

To illustrate the foundations of managers' incentive to play it safe, we write down a simple model of corporate investment, adapted from Coles, Lemmon, and Meschke (2012) and Maug (2015). Suppose that a manager with constant absolute risk aversion (CARA) holds an ownership share, α, of his firm, whose equity value V is stochastic and has a normal distribution with mean μ and variance σ^2. Assume that the manager expends unobservable and costly effort, e, running the firm, which also confers additional private benefits, b, if the firm avoids distress (i.e., if $V \geq V^*$).[5] To encourage the manager to exert effort, the firm restricts the manager from divesting his or her ownership stake (Hall and Liebman, 1998). Expressing both e and b in monetary units, the manager's utility is thus

$$U = -e^{-\rho(w+\alpha V-e+1(V>V^*)b)}, \tag{1}$$

where ρ is the coefficient of absolute risk aversion and w is the manager's other accumulated wealth. Maximizing the manager's expected utility is thus equivalent to maximizing

$$w + \alpha\mu - \tfrac{1}{2}\rho\alpha^2\sigma^2 - e + (1-\pi)b, \tag{2}$$

where $\pi = \Phi\left(\frac{V^*-\mu}{\sigma}\right)$ is the probability of distress.

Suppose that the firm has access to a project that would change μ by $\Delta\mu$, σ by $\Delta\sigma$, and b by Δb, and would require the manager to expend effort Δe to implement it. Without loss of generality, assume that $\Delta\sigma$ is entirely idiosyncratic, so that the project's net present value (NPV)

[5] Indeed, empirical research finds that managers experience large personal costs when their firms default (Gilson, 1989; Eckbo, Thorburn, Wang, 2015), even if the poor corporate performance is caused by factors beyond their control (Jenter and Kanaan, 2015).

to a diversified shareholder is $\Delta\mu$. Although shareholders want the firm to take the project so long as its NPV is positive, a manager maximizing his or her own utility will take the project only if

$$NPV > \underbrace{\frac{1}{2}\rho\alpha\Delta\sigma^2}_{\text{playing it safe}} + \frac{\Delta e}{\alpha} - \left(\frac{(1-\pi')\Delta b}{\alpha} \underbrace{- \frac{\Delta \pi b}{\alpha}}_{\text{playing it safe}}\right). \quad (3)$$

where π' is the probability of distress after taking the project and $\Delta\pi = \pi' - \pi$.

The three terms on the right-hand side of Eq. (3) represent three distinct agency conflicts. First, exposure to the firm's idiosyncratic risk leads the risk-averse manager to require the project to achieve a higher NPV for a given level of risk.[6] Second, the manager is reluctant to exert costly effort. Third, private benefits influence the manager's decision in two ways. First, managers are more likely to take projects that increase their private benefits, for example by increasing their perquisites (Jensen and Meckling, 1976), span of control (i.e., "empire building"; see Baumol, 1959; Marris, 1964; Williamson, 1964), or career prospects (Holmström, 1999), and less likely to take projects that decrease them. Second, to protect these private benefits, managers are more likely to take projects that decrease the firm's probability of distress (i.e., those with lower $\Delta\pi$; see Jensen and Meckling, 1976; Amihud and Lev, 1981).

We refer to managers as "playing it safe" when they either forgo a positive-NPV project because it increases risk or take a negative-NPV project because it decreases risk. As highlighted by the arrows under Eq. (3), managers have two incentives to play it safe: (i) to reduce their financial exposure to the firm's idiosyncratic risk and (ii) to protect their private benefits and career prospects. While related, these two incentives have different theoretical underpinnings and subtle differences in their implications for managerial behavior. For example, the private benefit incentive to play it safe, which is often referred to as "career concerns," exists even in the absence of managerial risk aversion or idiosyncratic risk. The two underlying incentives also promote different objectives: the first encourages managers to reduce volatility, σ, while the second encourages managers to reduce distress risk, π, which may be increasing or decreasing in σ, depending on how close the firm is to distress.

Although the various agency conflicts are easy to identify in Eq. (3), they are much harder to distinguish empirically. When a manager forgoes a risk-increasing positive-NPV

[6] Consistent with this phenomenon, Jaganathan et al. (2015) find that managers at firms with greater exposure to idiosyncratic risk use higher hurdle rates in capital budgeting.

project, is this because the project increases volatility ($\Delta\sigma > 0$), distress risk ($\Delta\pi > 0$), or effort ($\Delta e > 0$)? Although empirical papers often attribute forgone investments to managers avoiding exerting effort rather than to them playing it safe, the two explanations are typically observationally equivalent. To distinguish between these motivations, our empirical analysis focuses on managers' decisions to take risk-reducing negative-NPV projects, which decrease risk (either $\Delta\sigma < 0$ or $\Delta\pi < 0$) but require effort ($\Delta e > 0$). We also exploit cross-sectional variation in α, b, $\Delta\sigma$, and $\Delta\pi$ to assess which of the various agency conflicts are most empirically relevant.

Managers' tendency to play it safe has important implications for optimal corporate policies. Eq. (3) shows that financial leverage and managerial ownership, which are often associated with reducing agency conflicts, exacerbate managers' desire to play it safe. Although leverage discourages managers from indulging in private benefits Δb, such as empire building, by increasing π' (a la Jensen, 1986), it exacerbates risk-related agency conflicts by concentrating the firm's risk on a smaller equity base, thereby increasing $\Delta\sigma$ (Parrino, Poteshman, and Weisbach, 2005).[7] Increasing managerial share ownership, α, also cuts both ways. While it reduces the influence of effort and private benefits over managerial decision making in Eq. (3), managerial share ownership increases the manager's exposure to the firms' risk, which magnifies their incentive to play it safe (e.g., Grossman and Hart, 1983; Brick, Palmon, and Wald, 2012).

This simple theoretical framework thus yields the following straightforward, testable predictions: absent strong governance, managers have an incentive to undertake value-destroying actions so as to reduce their firms' volatility or distress risk; and increased leverage and inside ownership amplify this incentive. With this theoretical framework and these predictions in mind, we now turn to analyzing whether managers indeed have an underlying preference to play it safe and how firms can mitigate this conflict.

2. Empirical framework

We start by examining the cross-sectional correlation between shareholder governance and corporate risk-taking. Figure 1 plots the correlations between various measures of firms' risk-taking and the governance index from Gompers, Ishii, and Metrick (2003), a standard proxy for firms' external shareholder governance. The figure shows that weaker shareholder governance (i.e., a higher governance index score) is associated with lower stock volatility,

[7] Leverage further increases managers' motive to play it safe when it magnifies the change in distress risk, $\Delta\pi$, that occurs for any given $\Delta\sigma$. The playing it safe motive is amplified through this channel whenever distress risk, π, is an increasing and convex function of firm volatility, σ.

lower cash flow volatility, more cash holdings, and more diversifying acquisitions. The magnitudes of these correlations are sizable. Relative to the sample averages, a one standard deviation decrease in shareholder governance is associated with a 9 percent decline in stock volatility (t = 12.3, adjusted for clustering at the firm level), a 6 percent reduction in cash flow volatility (t = 4.0), a 13 percent increase in cash holdings (t = 3.9), and a 9 percent increase in diversifying acquisitions (t = 2.4). These correlations are consistent with managers playing it safe when external governance is weaker.

These statistical relations, however, might not reflect causal relations. Standard proxies for governance, such as the governance index, institutional ownership, and board size, might be correlated with factors, such as firm size or investment opportunities, that directly affect a firm's risk and confound the relations illustrated in Figure 1. Simultaneity bias could also distort these relations, as a firm's governance and risk are jointly determined; for example, firms that operate in riskier environments might elicit stronger shareholder governance, all else equal.

2.1. Business combination laws

To overcome these challenges and to determine the importance of playing it safe motives, we follow Bertrand and Mullainathan (2003) and use U.S. states' passage of antitakeover laws as a negative shock to firms' shareholder governance. The idea behind this identification strategy is that the threat of a takeover reduces agency conflicts between managers and shareholders. The market for corporate control disciplines managers because value-destroying activities, such as taking either too much or too little risk, impair the firm's stock value and invite a potential takeover that would result in the manager's termination (e.g., see Manne, 1965; Jensen and Meckling, 1976; Scharfstein, 1988). When the threat of a takeover is weakened, managers will be freer to act upon their underlying preferences that do not align with shareholders' interests. Consistent with this, Karpoff and Malatesta (1989) and others find that the initial press announcement of antitakeover legislation in a state is associated with a negative stock price reaction for affected firms, and Lel and Miller (2015) find that CEO turnover is more sensitive to poor firm performance after countries adopt laws that reduce barriers to takeover activity.[8]

[8] Although takeover threats could foster "managerial myopia" by discouraging profitable investments that are undervalued by equity markets (Stein, 1988), empirical research has found no evidence that the antitakeover legislation we analyze had this effect. In addition to the negative stock price reaction to these laws (e.g., Karpoff and Malatesta, 1989), the laws are associated with reduced total factor productivity (Bertrand and Mullainathan, 2003). The investments focused on in our analysis—whole-firm acquisitions—are also subject to robust public scrutiny, unlike the actions typically focused on in theories of managerial myopia, such as asset sales and long-term capital investments (Auletta, 1986).

Although antitakeover laws reduce takeover risk, they do not insulate a firm (or its manager) from distress risk or other sources of volatility. As shown in Section 1, a manager prefers for the firm to avoid risk when the manager has concentrated personal wealth tied to the firm or when the firm's distress would put the manager's private benefits at risk. Although the manager has these incentives to avoid volatility and distress irrespective of takeover pressure, the manager is hesitant to destroy shareholder value by acting on these incentives when doing so is more likely to trigger a hostile takeover.

We focus on the adoption of business combination (BC) laws across states as a source of variation in takeover threats. BC laws, also known as freeze-out laws, were adopted by 33 states between 1985 and 1997 and were upheld by the Supreme Court in 1987 (*CTS v. Dynamics Corp.*); the timing of states' adoption can be found in Appendix Table A.1.[9] Although the provisions of BC laws vary across states, they typically prevent a wide range of business combination transactions—including asset sales, mergers, share exchanges, and spinoffs—between a target firm and an interested acquirer for three to five years unless the target's board of directors approves the transaction *prior* to the acquirer owning more than 10−20 percent of the target. These state laws applied only to target firms incorporated in the state. Consistent with BC laws making hostile takeovers more difficult to execute, their passage is associated with a reduction in hostile takeovers (Cain, McKeon, and Solomon 2014) and an increase in takeover premiums (Comment and Schwert 1995).

Political economy or business cycle factors are unlikely to confound our analysis of BC laws' effect on corporate outcomes. Romano (1987) and Bertrand and Mullainathan (2003) find that the passage of these laws typically did *not* result from the pressure of a large coalition of economic players in the state and conclude that an omitted economic variable is unlikely to explain measured effects of the law. Indeed, we find no measureable differences in the characteristics of firms incorporated in states adopting the laws before the laws come into effect. Nevertheless, we control for political economy or business cycle factors that may have coincided with or led to the passage of the antitakeover law by including both location state-by-year and industry-by-year fixed effects in our analysis. We also examine the timing of the effects and find that the law's adoption precedes the effects we assign to it rather than the other way around.

[9] Other antitakeover laws passed at the time included fair price, control share, poison pill, and directors' duties laws. For detailed discussions of these laws and related court rulings, see Romano (1987), Karpoff and Malatesta (1989), Bertrand and Mullainathan (2003), and Karpoff and Wittry (2014).

Finally, we estimate similar effects on firms incorporated in states adopting BC laws whether they operate in the state or elsewhere, casting further doubt that the observed effects are driven by an omitted state-level shock or policy endogeneity.

2.2. Empirical specification

Using a difference-in-differences estimator, we compare changes among firms located in states that pass a BC law to changes among firms incorporated elsewhere. The underlying identification assumption is that, but for the law, the two sets of firms would follow parallel trends; that is, the change in outcome y for firms incorporated in the states that pass a BC law would have been the same as for firms incorporated in states that did not pass a BC law.

Specifically, we estimate:

$$y_{ijlst} = \beta_1 BC_{st} + f_i + \omega_{lt} + \lambda_{jt} + \eta_{ijlst}, \quad (4)$$

where y is the outcome of interest for firm i, in industry j, located in state l, incorporated in state s, in year t; BC is an indicator that equals 1 if state s has passed a BC law by year t; f_i are firm fixed effects; ω_{lt} are state-by-year fixed effects; and λ_{jt} are 4-digit SIC industry-by-year fixed effects. The firm fixed effects control for unobserved, time-invariant differences across firms; state-by-year fixed effects control for unobserved, time-varying differences across states; and industry-by-year fixed effects control for unobserved, time-varying differences across industries. Finally, we adjust the standard errors for clustering at the state-of-incorporation level.

The inclusion of state-by-year and industry-by-year fixed effects ensures that our difference-in-differences estimates are robust to many types of unobservable omitted variables that might otherwise confound our analysis. We assign a firm's location based on the location of its headquarters, which is typically also where major plants and operations are located (Henderson and Ono, 2008). We are able to obtain estimates for the BC laws' effects even after including state-by-year fixed effects because more than 60 percent of our firms are incorporated and located in different states. Our estimates are identified by comparing the differential response of two firms that operate in the same state, l, but where only one of these firms is incorporated in a state, s, that passes a BC law. Thus, any unobserved, time-varying state-level factors, such as local business cycles, that might coincide with a BC law's adoption and affect our outcome of interest will not bias our findings. Including industry-by-year fixed effects further mitigates identification concerns by controlling for any potential differential trends across industries over time.

2.3. Sample, data sources, and descriptive statistics

We obtain firms' financial data from Compustat, excluding regulated utility firms (SIC codes 4900-4999), firms located or incorporated outside the U.S., and firm-year observations with either missing or negative assets or sales. Financial ratios are winsorized at the 1% level. To include at least 10 years of data before and after each law's adoption, our sample period is 1976–2006. Although this sample period is longer than the 1976–1995 time period examined by Bertrand and Mullainathan (2003), our findings are robust to using the shorter time frame and to excluding the three additional state laws reported in Pinnell (2000)—Oregon in 1991, and Iowa and Texas in 1997. Our data on acquisitions are from the Securities Data Company's (SDC) U.S. Mergers and Acquisitions Database, which begins in 1980.

We obtain information about firms' historical states of incorporation and headquarters location from Cohen (2012), who collected this information back to 1990 from the SEC disclosure CDs and Compustat back-tapes, and from SEC Analytics, which contains historical information back to 1994 from firms' SEC filings. For observations prior to 1990, we use the earliest incorporation and headquarters location information available for each firm. When information is missing entirely for a firm, such as for firms that stopped filing prior to 1990, we use the legacy version of Compustat to obtain this information. To avoid endogenous changes in whether a firm is subject to a BC law, we exclude firms that reincorporate from a state without a BC law to a state with a BC law or vice versa.[10]

Firms in states adopting BC laws are similar to firms in other states. Table 1 reports firms' average characteristics (and standard errors) in the three years before each law was adopted; statistics in Column (1) correspond to firms incorporated in states adopting a BC law, and statistics in Column (2) correspond to firms incorporated in states not adopting a BC law. The *p*-value from t-tests for statistical differences between the two samples is reported in Column (3). The firms are similar in terms of their size, return on assets (ROA), debt/assets, growth, average risk, as measured by either stock or cash flow volatility, and acquisition activity, as measured using an indicator for undertaking at least one acquisition or the number of diversifying acquisitions they complete.

[10] It turns out that our choice of data here does not have a significant impact on our estimates. Our conclusions remain the same if, similar to other researchers, we instead ignore endogenous relocations and just use the most recent version of Compustat, which only reports firms' most recent locations and states of incorporation. The lack of a significant change likely reflects that only a small fraction of firms reincorporate. Relative to the most recent version of Compustat, our historical data change the state of incorporation for about 6% of observations and change treatment status for only 2% of observations.

3. How takeover threats affect firms' risk-taking and acquisitions

Do managers have an underlying preference to play it safe? In this section, we investigate this question by examining how firms' risk-taking changes when external shareholder governance is weakened by the adoption of a BC law.

3.1. Stock volatility and distress risk

As shown in Section 1, managers' have incentives to decrease stock volatility to protect their undiversified holdings and to decrease distress risk to protect their private benefits. As a first test of these predictions, we examine whether stock volatility and distress risk are indeed reduced after a BC law is adopted. The results are reported in Table 2.

Stock volatility declines after a BC law is adopted. We calculate a firm's stock volatility from CRSP using the square root of the sum of squared daily stock returns over the year. Detailed definitions and summary statistics of all outcome variables can be found in Appendix Tables A.2 and A.3. As reported in Column (1), average stock volatility declines by about 2.3 percentage points among firms affected by a BC law relative to firms that operate in the same state and in the same industry but are unaffected by the law change. This drop in stock volatility, which is statistically significant at the 1 percent confidence level, corresponds to 4.3% of the pre-law sample mean from Table 1 and 7.5% of the pre-law standard deviation.

Distress risk also decreases after a BC law is adopted. To examine distress risk, we use CRSP delisting codes to construct an indicator variable that equals one when firms exit our sample because of bankruptcy, liquidation, or other performance-related reasons (as defined by Boualem, Gomes, and Ward (2015)). Consistent with a decline in future distress, we find that firms are 3.5 percentage points less likely to suffer a performance-related exit after a BC law is adopted [Column (2)]. This decrease in exits is economically large—measuring about a quarter of a standard deviation—and is statistically significant at the 1 percent confidence level.

The declines in stock volatility and distress could reflect reduced business risk (if the firms decrease operating asset volatility), reduced financial risk (if the firms decrease leverage or increase cash), or both. To test for a potential change in business risk, we approximate the volatility of a firm's returns on operating assets using the product of a firm's stock volatility and its market value ratio of equity to operating assets. This approximation holds exactly if both debt and cash are risk-free. We find similar results if we instead estimate firms' non-cash asset volatility using the Black-Scholes option pricing model, as in Levine and Wu (2014). We also examine cash flow volatility, defined as the annual standard deviation of a firm's quarterly ratio

of cash flow to assets, as an alternative measure of business risk.

The decline in stock volatility at least partly reflects a reduction in business risk. As reported in Column (3), operating asset volatility declines by 1.5 percentage points, on average, and the decline is statistically significant at the five percent confidence level. This decrease in volatility corresponds to about 4% of the pre-law sample mean. Cash flow volatility also decreases by about 4% of its pre-law sample mean, but is estimated less imprecisely and is not statistically significant at conventional confidence levels [Column (4)].

We find less evidence of a decline in financial risk. Average total cash holdings increase by 12.1 log points, or about 13 percent, after a BC law is adopted [Column (5)], but the increase in the ratio of cash to book assets is smaller and not significant (coefficient = 0.0023, standard error = 0.0034). Likewise, although firms are more likely to retire debt (coefficient = 2.9 percentage points, standard error = 0.8), the drops in firms' debt-to-equity ratio (coefficient = −0.063, standard error = 0.043), market leverage (coefficient = −0.002, standard error = 0.006) and net leverage (coefficient = −0.004, standard error = 0.009) are not statistically significant. This downward rigidity in leverage could possibly result from a leverage ratchet effect (Admati et al., 2013) and is reminiscent of Ljungqvist and Heider's (2015) finding that leverage responds to increases but not decreases in the corporate tax rate.

3.2. Acquisitions

Although the decline in stock volatility and decrease in distress risk are suggestive of managers playing it safe and reducing their firms' risk when the threat of a takeover is reduced, the evidence could also be consistent with managers exerting less effort. For example, if managers are avoiding risky R&D expenditures because these investments would entail effort, then we might observe decreases in firms' volatility and distress risk. Put in terms of Eq. (3), do these outcomes result from managers' motivations to decrease risk ($\Delta\sigma$ or $\Delta\pi$) or to decrease effort (Δe)?

To differentiate between these potential motivations for the observed decline in risk, we examine firms' acquisition activity. We focus on acquisitions because they are a way to reduce the firms' risk that requires managerial effort. There is a long tradition, dating back to Amihud and Lev (1981), if not before, of viewing diversifying mergers in this way. More recently, Gormley and Matsa (2011) find that when faced with an increase in left-tail risk, managers aggressively try to reduce risk through diversifying acquisitions and acquisitions of "cash cows" (firms with significant cash flow and payouts). Because initiating and completing an acquisition

requires managerial time and energy, one could safely conclude that an observed increase does *not* stem from managers' reluctance to exert effort.

We measure acquisitions using SDC's Mergers and Acquisitions Database. Following previous research, we exclude acquisitions meeting any of the following criteria: (1) the ratio of the deal size to market value of the acquirer's assets is less than 1%; (2) the acquiring firm controlled more than 50% of the target prior to the announcement date or less than 100% after the acquisition was completed; (3) the ultimate parent of the acquirer and the target are the same (i.e., consolidations within holding companies or buybacks); (4) either the acquirer or the target is a financial firm; or (5) the deal was not completed within 1,000 days of the announcement date. Our estimates for acquisitions are found in Table 3.

We find that firm's acquisition activity increases after the takeover threat is reduced. After a state adopts a BC law, firms incorporated in that state undertake 0.027 more acquisitions per year relative to other firms operating in the same state and in the same industry [Table 3, Column (1)]. This increase is economically large, averaging 27 percent of the pre-law level, and is statistically significant at the 5 percent level. Firms are also 12 percent more likely to undertake any acquisitions [0.009 more likely per year relative to the baseline likelihood of 0.076; Column (2)], and the total value of deals, normalized by the lagged market value of total assets, increases by 0.17 percentage points, a 12 percent increase over the average level of 0.014 before the law [$p < 0.05$, Column (3)]. This increase in deal value, however, is not as robust as our other findings regarding acquisitions (see Section 5 for details). This may not be surprising in that SDC does not report the value of many acquisitions in its sample. We calculate the total value of deals undertaken by a firm in a given year by summing over deals for which value is available and dropping observations for which none of the acquisitions reported by SDC include the value. Given this limitation, we have more confidence in our estimates of the likelihood of an acquisition and the number of acquisitions.

Many of the additional acquisitions are diversifying in nature. For a target firm, SDC lists a primary four-digit SIC industry classification and up to nine other four-digit SIC codes that represent "any small side lines the company is involved in" (Thomson Financial 1999). We define an acquisition as diversifying when the acquirer's primary SIC code does not coincide with any SIC code of the target firm. Of course, even when SIC codes match, an acquisition typically diversifies away some idiosyncratic risk. The effect of BC laws on diversifying acquisitions, which is reported in column (4) of Table 3, is large and statistically significant.

After a BC law is adopted, firms incorporated in that state undertake 0.018 more diversifying acquisitions annually ($p < 0.05$), representing a jump of about 25 percent relative to the pre-law average. Compared to the coefficient for the total number of acquisitions [Column (1)], we can see that two-thirds of the additional acquisitions are outside the acquirer's primary industry. This increase in diversifying acquisitions is consistent with the acquisitions being aimed at reducing firms' risk and likely contributes to the drop in firms' stock volatility documented above.

The timing of the increase in diversifying acquisitions coincides with the BC laws' adoption. Figure 2 plots point estimates from a modified version of Eq. (4), where we allow the effect of *BC* to vary annually in event time. There is no indication of an increase in diversifying acquisitions before the BC laws take effect, but afterwards, firms incorporated in the state tend to increase their diversifying acquisitions relative to firms that are operating in the same state and in the same industry but are incorporated elsewhere. The precise timing of this change suggests that the additional acquisitions are in fact caused by the reduced takeover threat.

3.2.1. Acquisition targets and financing

To shed some light on how the BC laws affect the types of firms being acquired, we examine the subsample of acquisitions for which the target firm's financial data are available in Compustat.[11] We examine characteristics of the target firms based on their most recent Compustat and CRSP data before the acquisition announcement using the following regression:

$$y_{ijlst} = \beta_2 BC_{st} + \varphi EverBC_i + \alpha_j + \theta_l + \delta_t + TargetBC_i + \nu_{ijlst} \quad (5)$$

where y is an ex ante characteristic of target firm i, for an acquisition undertaken by a firm located in industry j, operating in state l, incorporated in state s, and announced in year t. *BC* is defined as in Eq. (4). To ensure that our estimates maintain a difference-in-differences interpretation, we include an indicator, *EverBC,* that is equal to one if the firm is ever affected by the adoption a BC law. In earlier estimations, this control was absorbed by the firm fixed effect, but within-firm analysis is not possible in this setting because very few firms in our sample acquire public targets both before and after a BC law's adoption. We also include acquirer industry, acquirer state of location, and year fixed effects. To account for a potential effect of BC laws on target characteristics, we also control for whether a target is incorporated in a BC law

[11] We match the firms in SDC Platinum to Compustat using their CUSIPs. Because historical CUSIPs are not available in Compustat, we determine a firm's historical CUSIP by matching observations to CRSP using the CRSP/Compustat Merged Database, and then using the historical CUSIP reported by CRSP. When the historical CUSIP is missing, we use the CUSIP recorded in Compustat's header file.

state, *TargetBC*; however, our results are robust to excluding this control. Finally, we adjust the standard errors for clustering at the state of incorporation level.[12]

To examine whether firms are more likely to acquire targets that would help the acquirer reduce volatility and distress risk, as observed in Table 2, we begin by examining the following target characteristics: correlation of monthly stock returns between the acquirer and target in the five years before the acquisition; target's Altman's *z*-score; correlation of monthly operating asset returns between the acquirer and target; correlation of quarterly cash flow scaled by assets between the acquirer and target in the five years before the acquisition; and target's log cash. We measure a target's distress risk using Altman's *z*-score in this analysis because it is impossible to estimate it using realized exits. Acquiring targets with less correlated stock returns would decrease a firm's stock volatility, and acquiring firms with higher *z*-scores might also reduce distress risk. Acquiring targets with less correlated asset returns, less correlated cash flows, and greater cash holdings would also further both goals. The estimates are reported in Table 4.

Consistent with firms facing a lower takeover threat using acquisitions to reduce their stock volatility and distress risk, we find that these firms are more likely to acquire firms with which they have less correlated stock returns and which have less distress risk. On average, targets acquired by firms after a BC law's adoption have less correlated stock returns [Column (1)] and higher Altman's *z*-score [Column (2)]. Both estimates are economically sizeable, corresponding to 42 and 62 percent of their sample averages, respectively. These acquirers also target firms with less correlated operating asset returns and less correlated cash flows [Columns (3)-(4)]. For cash holdings, the estimate is positive but not statistically significant [Column (5)].

Firms facing a lower takeover threat also increasingly target firms that are likely to generate cash in the future, which is another way companies can reduce their risk of future distress (e.g., see Gormley and Matsa (2011)). To illustrate this, we analyze targets' three-year compounded annual growth rate of assets, the ratio of cash flow to assets, and the ratio of the total payout to assets. The estimates are reported in Columns (6)-(8) of Table 4. On average, targets exhibit an asset growth rate in the three years before being acquired that is 19.1 percentage points greater [Column (6)]. Firms incorporated in BC law states also tend to acquire

[12] The regressions are estimated by weighted least squares, using the target firms' total assets as weights. Given the magnitude of the size differences between deals, weighting gives the estimates a more meaningful interpretation: the estimated coefficients represent the effect of a BC law for the average dollar of transaction value (rather than for the average deal).

targets that generate and pay out greater cash flow per dollar of assets. Targets acquired by affected firms average 8.9 percentage point greater ratios of cash flow to assets [Column (7)] and 2.7 percentage point greater ratios of total payouts to assets [Column (8)]. Both of these estimates are statistically significant at the 1 percent level and correspond to increases of about 70 and 60 percent of their sample standard deviations, respectively.

Affected firms may also target firms with lower leverage. Using the same regression specification, we find that acquirers target firms with 4.9 percentage point lower market leverage ratios after a BC law is adopted (standard error = 3.4 percentage points). Although a target's pre-transaction leverage may not be closely connected to the acquirer's post-transaction distress risk because the acquirer can choose how to finance the acquisition, lower target leverage has been linked to lower takeover gains for the acquirer (Israel 1991), which we examine directly using stock returns below.

Because swapping cash for illiquid assets can be risky, we would expect these acquisitions to be financed with equity rather than with cash if they are driven by "playing it safe" motives. As reported in Table 5, firms in states that enact a BC law are indeed more likely to finance acquisitions with stock. Among the acquisitions analyzed in Table 4, equity accounts for 69.7 percent (standard error = 2.7) of deal financing for acquirers incorporated in a state with a BC law, which is 32 percentage points higher than for deals undertaken by acquirers not incorporated in those states. Regression analysis using Eq. (5) leads to similar conclusions: equity's share of deal financing increases by 21.2 percentage points [Table 5, Column (2)]. Based on a similar logic, another way to reduce the firms' distress risk would to issue equity but retain the proceeds as cash (instead of to fund an acquisition). We conjecture that managers avoid that approach because it would more readily arouse suspicion from investors and is linked empirically to proxy fights and executive turnover (Faleye 2004).

3.2.2. Announcement returns and additional evidence of value destruction

Investors appear to perceive the announcements of these acquisitions as bad news for the firms' shareholders. For the deals analyzed in Table 4, we use standard event study methods to estimate market model abnormal stock returns using CRSP equally weighted index returns and parameters estimated over the [−300, −46] day interval (see MacKinlay, 1997). For acquisitions undertaken by firms incorporated in states with a BC law, the acquirer's average cumulative abnormal return (CAR) over a three-day window [−1, +1] around the deals' announcement is

−5.6% (t = 7.4) on a deal value weighted basis and −1.3% (t = 9.8) on an equal weighted basis. This negative average return provides direct evidence that the average acquisition undertaken in BC states destroys value for the acquirer. This negative return is also consistent with the large body of literature that interprets managers' differential choices after a BC law's adoption as the outcome of agency problems and with the negative abnormal announcement return associated with the adoption of BC laws (e.g., Karpoff and Malatesta, 1989).

We do not control for deal characteristics when calculating the average announcement return because, conceptually, we are interested in whether these marginal deals create or destroy value for the acquirer as they are structured, not whether the deals create or destroy value after controlling for their endogenous characteristics. For example, diversifying acquisitions have long been associated with destroying shareholder value (e.g., Amihud and Lev, 1981). The goal of our analysis is not to ask whether the additional diversifying acquisitions undertaken after a BC law destroy more shareholder value than diversifying acquisitions undertaken at other times. Rather, the analysis aims to ask whether acquisitions undertaken after a BC law destroy shareholder value at all. See Angrist and Pischke (2009, pp. 64-68) for further discussion of why endogenous controls should be excluded from causal effects estimation.

We find, moreover, that acquisitions undertaken after a BC law's adoption have *even more negative* average announcement returns than what we observe for acquisitions undertaken at other times. As reported in Column (3) of Table 5, regression estimates suggest that acquisitions undertaken by firms incorporated in states with a BC law have 3.3 percentage point lower average CAR than acquisitions undertaken prior to enactment of the law and by firms not incorporated in a state with a BC law. The estimate is statistically significant at the 1 percent level and corresponds to about 40 percent of the sample standard deviation. The decline in average announcement returns is robust to using alternative windows to calculate the CAR, including [−3, +3] and [−2, +2] days. Consistent with firms paying more to complete these deals, we also find a positive, but imprecisely estimated, increase in the takeover premium paid over the target firm's market value (coefficient = 12.0 percentage points, standard error = 13.5).

The negative average announcement return is unlikely to reflect the market's learning that a firm is overvalued as opposed to the value of the deal itself. It is unclear why BC laws would either make firms more overvalued (in fact, the BC laws decreased valuations; see Karpoff and Malatesta, 1989) or increase managers' incentives to issue overvalued equity (if anything, the laws gave managers less incentive to maximize shareholder value). The

overvaluation hypothesis also does not square with the evidence. We find that, even if we control flexibly for the percent of the deal funded by equity using a third-order polynomial, the average announcement return of acquisitions undertaken after a BC law is still negative and statistically significant (−0.81%, t = 2.27), and the decline in announcement returns (estimated from a specification otherwise similar to the analysis reported in Column (3) of Table 5) also remains negative and statistically significant (−2.27%, t = 2.17).

3.2.3. Implications for firm risk

If the value-destroying acquisitions are driven by a managerial motive to play it safe, we would expect them to reduce firms' stock volatility and distress risk. To test this implication, we calculate, for firms incorporated in states adopting a BC law, the change in stock volatility and an indicator for performance-related exit over the ten years following the law's adoption. We then analyze whether volatility is lower and performance-related exit is less common among firms that increase acquisitions in the five years after a BC law is adopted relative to the five years before. The estimates are reported in Table 6.

Consistent with the acquisitions reducing risk, firms that increase acquisition activity after a BC law exhibit subsequent declines in stock volatility and performance-related exits. Relative to other firms, the change in stock volatility of firms that increase acquisition activity is 3.7 percentage points lower, which is roughly 7 percent of stock volatility's pre-law sample average [Column (1)]. The acquisitions appear to cut these firms' distress risk by more than half: firms that increase acquisitions have 4.2 percentage point lower rates of performance-related exit over the 10-year period following the laws' adoption relative to the average exit rate of 7.6 percent [Column (2)]. The various components of risk taking also appear to decrease. The change in cash flow volatility is 0.83 percentage points, or about 11%, lower [Column (4)], and the change in cash holdings is 34.5 log points, or about 41 percent, greater [Column (5)]. For operating asset volatility, the estimate is negative but not statistically significant [Column (3)].

3.3. Importance of including fixed effects and avoiding endogenous controls

Given that acquisitions are an important, well-studied corporate investment and have the potential to reflect agency conflicts (e.g., Amihud and Lev, 1981; Harford and Li, 2007) and to destroy significant shareholder value (Moeller, Schlingemann, and Stulz, 2005), why has the increase in acquisitions been overlooked in the literature on BC laws to date?

Acquisitions have likely been overlooked because of the estimation strategy used in previous analyses of BC laws, which differs from our strategy in two important ways. First, to account for state- and industry-specific trends, previous studies control for state-year and industry-year averages of the dependent variables in their regression specifications, which introduces a measurement error bias (Gormley and Matsa, 2014). Second, previous studies further augment the estimation to include a vector of time-varying controls that are thought to affect the outcome of interest, which introduces an additional bias when any of these controls are affected by the BC laws' passage (Angrist and Pischke, 2009). For example, prior studies of how BC laws affect firms' acquisition activity have included a time-varying control for firm size; but presumably, if passage of the BC law affects acquisitions, it will also affect firm size, making firm size an invalid control. Our estimation avoids these biases by estimating fixed effects instead of average effects and by excluding endogenous controls.

To illustrate this, we estimate the standard specification used in the prior literature:

$$y_{ijlst} = \beta_3 BC_{st} + \phi_1 StateYear_{lt} + \phi_2 IndustryYear_{jt} + f_i + \delta_t + \mathbf{\Gamma X}_{ijlst} + u_{ijlst}, \quad (6)$$

where y is a dependent variable, BC is defined as before, $StateYear$ is the average y for firms located in state l in year t, and $IndustryYear$ is the average y for firms in industry j in year t, and X_{ijlst} is a vector of time-varying controls that includes firm size (measured using the natural logarithm of assets), firm size squared, firm age (measured using the number of years that a firm has been in Compustat), and the Herfindahl-Hirschman index (HHI) of sales in the firm's three-digit SIC industry (computed using Compustat). These time-varying controls match those used by Giroud and Mueller (2010). So as to better match prior papers, we also use firm locations as reported in the legacy version of Compustat, restrict our sample to end in 1995, and code the BC laws as reported in Bertrand and Mullainathan (2003).

Using Eq. (6), we fail to detect a significant increase in acquisition activity. In analysis of the number of acquisitions, the estimated coefficient on the BC law indicator is 0.014 [Table 7, Column (1)]. When examining an acquisition indicator, the point estimate is 0.005 (standard error = 0.004), and when examining scaled deal value, the point estimate is 0.001 (standard error = 0.001). None of these point estimates are statistically significant at conventional levels, and they are similar to those reported in prior research. For example, Giroud and Mueller (2010) find no evidence of an increase in either the likelihood of an acquisition or the ratio of acquisition volume to market capitalization [see Table 9, Panel A, Columns (4) and (5) of their paper].

Our main specification [Table 3, Column (1)] differs from the standard specification

[Table 7, Column (1)] in only six ways, so our finding of an increase in acquisitions must be because of at least one of these six differences. The six differences are: (1) the longer sample period, which ends in 2006 rather than 1995; (2) the addition of the three additional states that adopted BC laws (Pinnell, 2000); (3) the 4-digit, rather than 3-digit, SIC industry controls; (4) the use of fixed effects (FE) to control for unobserved heterogeneity instead of industry-year and state-year averages of the dependent variable; (5) the exclusion of endogenous controls, like firm size; and (6) the updated data on firms' historical locations. In Columns (2)-(7) of Table 7, we implement each of these changes one at time to ascertain which changes affect our estimates.

Our ability to detect the increase in acquisitions comes from using FE and from excluding the endogenous control variables. Extending the sample period to 2006 [Column (2)] and including the additional BC law changes in Iowa, Oregon, and Texas [Column (3)] does not increase our estimate. Switching to 4-digit SIC controls (when calculating the *industry-year* control) also has no effect [Column (4)]. But once we control for industry-by-year and state-by-year fixed effects in place of industry-year and state-year averages of the dependent variable, we detect a statistically significant increase in the number of acquisitions that is more than 20 percent of the pre-law average of 0.099 and double the magnitude found using the previous specification [Column (5)]. The magnitude of the estimate further increases to more than 30 percent of the pre-law average when we drop the endogenous control variables [Column (6)]. Updating firms' historical locations and dropping firms that reincorporate from a state without a BC law to a state with one (and vice versa) slightly reduces the estimate's magnitude [Column (7)], suggesting that endogenous changes in treatment status positively bias the estimate, as we would expect: Given that switching is costly, managers that switch their firms' state of incorporation because of the BC law will be those who perceive the benefits of switching to be greatest and are the thus most likely to undertake actions, including the acquisitions, that were otherwise deterred by the takeover pressure.

Overall, our findings reported in Table 7 highlight the importance of researchers avoiding the use of dependent variable group means as controls, as discussed by Gormley and Matsa (2014), and excluding endogenous controls, as discussed by Angrist and Pischke (2009).

4. Interpretation and heterogeneity in responses

The value-destroying acquisitions and reduced risk-taking after BC laws are adopted indicate that motivating managerial effort is not the only challenge that shareholders face. After shareholder governance weakens, many managers actively reduce risk, which suggests that the

literature's focus on managerial effort overlooks a risk-related aspect of managerial preferences that is important for corporate outcomes and shareholder value.

But several questions remain: Is some of the observed increase in acquisitions driven by other type of agency conflicts, such as empire building, or by the increased influence of other stakeholders, like employees or debtholders? What is the relative importance of risk aversion and career concerns as determinants of managers' underlying preference to play it safe? And, is there evidence to support the dual roles of inside ownership and financial leverage in both exacerbating and mitigating managerial agency conflicts? To answer these questions, we now examine cross-sectional heterogeneity in firms' responses.

4.1. Specification for identifying heterogeneity in firms' responses

To examine heterogeneity in firms' responses, we modify our empirical specification so that we can compare firms' responses based on *ex ante* characteristics. We want to test whether firms with different characteristics in the year prior to passage of the law, denoted as year T–1, respond differently to a BC law's adoption. For example, do firms with high versus low cash flows respond differently? However, specification (4) is not amenable to such a test; because there are multiple dates on which BC laws are adopted, there is no unique T–1 period for each firm in the panel. This difficulty in testing for heterogeneous responses occurs whenever researchers are analyzing responses to multiple events that occur at different points in time.

To overcome this challenge, we use the matching difference-in-differences estimator proposed by Gormley and Matsa (2011). For each year that a new BC law is adopted, we identify firms incorporated in states that passed a BC law in that year, and we compare them to firms not incorporated in those states. We analyze firm-year observations in the ten years before and the ten years after the law's adoption. Firms are not required to be in the sample for the full twenty years around the law's adoption, and firms are allowed to be chosen as matches in multiple cohorts (i.e., we are matching with replacement). We then estimate a separate difference-in-differences coefficient for each BC law adoption year and report the average effect across all of these cohorts. By estimating the effect separately for each BC law cohort, we are able to identify the T–1 characteristics of each firm and test for heterogeneity in responses based on these T–1 characteristics. In practice, a separate estimation for each BC law is not necessary; instead, we pool the data across all BC laws and estimate the average effect using the following regression:

$$y_{cijlst} = \beta_4 BC_{st} + f_{ci} + \omega_{clt} + \lambda_{cjt} + \eta_{cijlst}, \tag{7}$$

where y is the outcome of interest for firm i in cohort c, industry j, state-of-location l, state-of-

incorporation *s*, and year *t*. *BC* is the same as before, but we now include firm-by-cohort fixed effects, f_{ci}, state-by-year-by-cohort fixed effects, ω_{clt}, and industry-by-year-by-cohort fixed effects, λ_{cjt}, to ensure that we separately estimate the impact of firm, state-year, and industry-year unobserved heterogeneities for each BC law cohort. Allowing the fixed effects to vary by cohort is more conservative than including simple fixed effects. To account for any covariance among outcomes within a state of incorporation (including covariance from multiple draws of the same comparison firm), we adjust the standard errors for clustering by state of incorporation.

Switching to the matching difference-in-differences estimator does not affect our earlier findings. Estimating Eq. (4), we again find a large increase in the number of acquisitions after passage of a BC law. The magnitude, 0.026 more acquisitions in a given year [Table 7, Column (8)], is similar to our earlier estimate of 0.027 [Table 7, Column (7)]. The small difference in estimates is due primarily to the different sampling periods of the two estimators. In our earlier estimation, firms that were affected by passage of a BC law prior to 1997 had more than 10 years of post data while firms affected by later events might have more than 10 years of pre data; in the matching estimation, each firm has at most 10 years each of pre and post data.

To test for heterogeneity in firms' responses, we estimate Eq. (7) separately for various subsamples of firms that are constructed using characteristics of firms in the year prior to the BC law's adoption. The approach allows us to examine heterogeneity in the effect of BC laws, even when the subsampling variable is itself affected by the laws. Moreover, by estimating Eq. (7) separately for each subsample, we also allow for different industry and state-of-location trends for firms with different ex ante characteristics by estimating separate industry-by-year and state-by-year fixed effects for each subsample of firms.

4.2. Relative importance of playing it safe versus empire building motives

To assess the importance of playing it safe versus empire building motives for the observed increase in acquisitions, we examine variation in how firms respond to BC laws based on their ex ante cash flows, leverage, distress risk, and inside ownership. As discussed in Section 1, theories of playing it safe and empire building have different predictions for among which firms, based on these characteristics, the different agency problems are likely to manifest.

4.2.1. Importance of cash flows

To start, the alternative theories lead to different predictions for the importance of a firm's cash flows. As illustrated by Eq. (3), managers' motive to empire build (i.e., increase *b*) is

greater when cash flow is abundant and distress risk (π') is low (Jensen, 1986), whereas managers' motive to play it safe is greater when cash flow is scarce and the acquisition has a greater potential to reduce distress risk ($\Delta\pi$) (Jensen and Meckling, 1976).

Consistent with a playing it safe motive, we find that the increase in acquisitions is concentrated among firms with low cash flow and not among firms with high cash flow. The median values used to split the sample in this and subsequent analyses are reported in Appendix Table A.4, and the resulting estimates are reported in Table 8. After a BC law is adopted, firms with a below median ratio of cash flow to assets average 0.026 more acquisitions a year than other firms with below median cash flow operating in the same state and in the same industry but that are incorporated in a state that does not pass a BC law [Panel A, Column (1)]. Most of these additional acquisitions are diversifying. Firms with a below median ratio of cash flow to assets average 0.018 more diversifying acquisitions a year after a BC law's adoption [Column (3)]. This amounts to a 32 percent increase in diversifying acquisitions relative to the subsample average of 0.056 diversifying acquisitions per year. Contrary to an empire building explanation, we find no increase in total or diversifying acquisitions among firms with above median cash flow [Panel B, Columns (1) and (3)], although the differences across subsamples are not statistically significant at conventional levels.

4.2.2. Importance of financial leverage and risk of distress

As discussed in Section 1, financial leverage also has opposite roles in the playing it safe and empire building theories. Whereas leverage increases π', which discourages empire building (Jensen, 1986), leverage also increases $\Delta\sigma$ and often $\Delta\pi$, which magnify managers' incentive to play it safe (Parrino, Poteshman, and Weisbach, 2005).

As a further indication that playing it safe explains our results, we find that the increase in acquisitions is concentrated among firms that have greater leverage when a BC law is adopted. These estimates are also reported in Table 8. Firms with above median leverage in year T–1 average 0.021 more diversifying acquisitions a year after a BC law's adoption [Column (4)]. This amounts to a 21 percent increase in diversifying acquisitions relative to the subsample average of 0.102. We find no increase in diversifying acquisitions among below median leverage firms; the point estimate is smaller and not statistically significant [Panel B, Column (4)]. Our findings for the total number of acquisitions are similar [Column (2)]. Although suggestive, the differences across subsamples are not statistically significant at conventional levels; the *p*-values for total and diversifying acquisitions are 0.112 and 0.328, respectively.

Consistent with the risk preferences motivating managers to diversify their firms through acquisitions, we find that the increase in acquisitions is also concentrated among firms with high stock volatility. These estimates are reported in Table 9. We find that firms with an above median stock volatility in year *T*–1, undertake 0.037 more acquisitions and 0.029 more diversifying acquisitions per year after a BC law is adopted than above median stock volatility firms incorporated other states [Panel A, Columns (1) and (5)]. This represents a 35 percent increase in the number of diversifying acquisitions relative to the subsample average of 0.083. We find less evidence of an increase in acquisitions among firms with below median stock volatility [Panel B, Columns (1) and (5)], and the difference in diversifying acquisitions across the two subsamples is statistically significant at the 10 percent level.

We find a similar pattern when we cut the sample based on the other measures of volatility and distress risk analyzed in Table 2—operating asset volatility, cash flow volatility, and cash holdings. Firms with above median operating asset volatility, above median cash flow volatility, and below median cash holdings undertake 0.038, 0.028, and 0.033 more diversifying acquisitions, respectively, representing increases of 35, 31, and 50 percent relative to the subsample averages of each estimation (0.101, 0.089, and 0.066, respectively) [Panel A, Columns (6)-(8)]. We find little evidence of an increase in diversifying acquisitions among firms with below median operating asset volatility, below median cash flow volatility, and above median cash holdings [Panel B, Columns (6)-(8)], and the differences in point estimates across the two subsamples are statistically significant at the 5 percent level for two of the three measures. The results for these other measures are also similar when analyzing total acquisitions [Columns (2)-(4)]. In additional analysis, we also examined whether firm size or past growth are related to the post-BC changes in acquisitions. Although neither difference is statistically significant, the increases in acquisitions and diversifying acquisitions are somewhat concentrated among firms with below median book assets but appear unrelated to the firm's asset growth from year *T*–2 to year *T*–1 prior to a BC law's adoption.

4.2.3. Importance of managers' ownership stake

Like cash flows and financial leverage, managerial ownership has opposite roles in the playing it safe and empire building theories. As shown in Eq. (3), share ownership α lessens managers' effort and private benefit motives but exacerbates managers' incentive to play it safe. To further assess which incentive underlies the increase in acquisitions after a BC law, we examine whether the acquisitions are associated with high or low inside ownership.

To sort firms based on inside ownership, we use the reported shares held by a firm's CEO as a fraction of the firm's total shares outstanding in the year prior to adoption of a BC law, as recorded by Yermack (1995). Similar to our other analyses, we classify firms based on whether this ratio is above or below the sample median. Although Yermack's data are available from 1984–1991, they cover only the approximately 800 firms listed by *Forbes* magazine as among the 500 largest U.S. public corporations in any of those years. When this ownership information is missing, we classify firms based on the senior management's ownership stake, as recorded by TFN Insider Filing Data. The share of inside ownership is calculated using the filings derived from Forms 3, 4, and 5 over the period 1986–2006. These filings originate from trades by firms' insiders that must be reported to the SEC. The measure of inside ownership reflects the total holdings of the inside officers at the end of the year. More details on the construction of these data are described in Panousi and Papanikolaou (2012). Even after combining information from the two datasets, our sample is limited to only about 35% of firms in our full sample.

Consistent with a playing it safe motive, we find that the increase in diversifying acquisitions is concentrated among firms with high inside ownership. The estimates are reported in Table 10. After a BC law is adopted, firms with above median inside ownership average 0.030 more diversifying acquisitions a year than other firms with above median inside ownership operating in the same state and in the same industry but incorporated in a state that does not pass a BC law [Panel A, Column (2)]. While the increase is only statistically significant at the 10 percent confidence level, it is considerably different than what we observe among the firms with low inside ownership (p-value = 0.021), and we find an even stronger relationship between BC laws and diversifying acquisitions among firms in the top tercile of inside ownership (see Appendix Table A.5). Contrary to what empire building theories would predict, we find no increase in diversifying acquisitions among firms with below median inside ownership; the point estimate is negative and statistically insignificant [Panel B, Column (2)]. These findings are also inconsistent with the idea that managers play it safe today solely as a means to achieve a quiet life of less managerial effort in the future, because higher inside ownership would also alleviate managers' incentive to reduce effort. Although neither estimate for total acquisitions is statistically significant, the point estimates are suggestive of an increase among firms with high but not among firms with low inside ownership [Column (1)].

These estimates may understate the true effect of inside ownership on risk taking for two reasons. First, BC laws might reduce takeover risk less for firms whose manager has enough

inside ownership to prevent a hostile takeover using their voting rights. This aspect of inside ownership works against us finding an effect of BC laws among firms with high inside ownership. Second, managers with a stronger preference for playing it safe are less likely to hold onto their vested equity positions. This selection also works against us finding a decrease in risk among high inside ownership managers. Our affirmative finding, despite these countervailing effects, implies that managers cannot satisfy their appetite for reducing risk entirely by selling shares, which is consistent with both there being restrictions that prevent managers from fully diversifying their inside ownership positions (Hall and Liebman, 1998) and with managers preferring to retain the control and entrenchment that comes with a large equity position.

Although our analysis focuses on managers' equity ownership, unvested options likely also increase managers' incentive to play it safe. Managers with an above median number of unvested options, calculated using data from Yermack (1995), are also more likely to increase diversifying acquisitions after a BC law's adoption. Although the sample size in this analysis is an order of magnitude smaller, limiting the potential for reliable inference, the difference in diversifying acquisitions between firms whose managers have above versus below median unvested options is statistically significant at the 10 percent level.

4.3. Managerial preferences or the influence of other stakeholders?

Employees and debtholders often also benefit when firms reduce risk. Given this, might firms be reducing risk after BC laws' adoption because of the increased influence of these stakeholders in addition to management's own interest in reducing risk? Additional heterogeneity in firms' responses, however, casts doubt on this hypothesis.

To examine the role of employees, we look at whether the increase in acquisitions is concentrated among unionized firms, whose employees may wield greater influence. Whether union coverage is measured at the state-year or industry-year level, there is no indication that the increase in diversifying acquisitions is concentrated among unionized firms. In fact, as reported in Appendix Table A.6, we find statistically significant increases in acquisitions only in industries and states with below median union coverage.

To examine the role of debtholders, we look at whether the increase in acquisitions is concentrated among firms with concentrated debt structures, whose debtholders may be able to exert greater influence. In an approach similar to that of Colla, Ippolito, and Li (2013), we measure the concentration of firms' long-term debt across its components that are reported in Compustat (i.e., debentures, notes, subordinated debt, convertible debt, capital leases, and other

long-term debt). Whether concentration is measured using a Herfindahl-Hirschman index (HHI) or an indicator for whether a single component accounts for at least 90% of all long-term debt, there is no indication that the increase in diversifying acquisitions is concentrated among firms with more concentrated debt. In fact, as reported in Appendix Table A.7 the point estimates are larger for firms with less concentrated debt.

Although these proxies for the influence of employees and debtholders are imperfect, the lack of association between them and firms' risk-taking after BC laws' adoption suggests that managerial preferences, rather than influential stakeholders, drive firms' reduced risk taking.

4.4. Underlying mechanisms: Managerial risk aversion and career concerns

The theoretical framework developed in Section 1 suggests two possible reasons why managers might take on less risk than is desired by a diversified shareholder or undertake value-destroying actions that reduce the firm's risk: managerial risk aversion and career concerns. The two arrows under Eq. (3) point to these two distinct channels. Our analysis suggests that both of these mechanisms motivate managers to play it safe.

First, our analysis of managers' ownership stakes, reported in the previous section, suggests that risk aversion contributes to managers' underlying preference to play it safe. Because managers with large ownership stakes α have more of their financial wealth tied to the firms' success, their risk aversion gives them less appetite for idiosyncratic risk than a diversified shareholder. Indeed, using a market model to separate systematic and idiosyncratic risk, we find that 88% of the reduction in stock variance is accounted for by a decline in idiosyncratic risk.

Second, to assess whether career concerns also motivate managers to play it safe, we test for heterogeneity based on CEOs' age. Because younger individuals are further from retirement, they have greater career benefits, b, from avoiding poor performance (e.g., Chevalier and Ellison, 1999). We use the Disclosure database (Linck, Netter, and Yang, 2008) to sort firms based on their CEO's age, and we restrict the sample to observations where those same CEOs are in office. We then separately estimate the effect of BC laws on CEOs aged above or below 55 years in the year before a BC law's adoption. Age 55 is typically about ten years before retirement and close to the median, which is 53. The estimates are reported in Table 11.

The results suggest that career concerns contribute to managers' incentive to play it safe. We find that the increase in diversifying acquisitions is concentrated among firms with younger CEOs. After a BC law is adopted, firms with a CEO that is 55 or younger average 0.203 more diversifying acquisitions a year than other firms with a CEO that is 55 or younger operating in the same state and in the same industry but incorporated in a state that does not pass a BC law

[Table 11, Panel A, Column (2)]. The increase is statistically significant at the 1 percent confidence level and amounts to about a third of the sample standard deviation of 0.616. We find a similar increase in total acquisitions among firms with a younger CEO [Panel A, Column (1)]. We find no evidence, however, of an increase in acquisition activity among CEOs closer to retirement, who have less of a career incentive to reduce their firms' risk [Panel B].

In sum, both managerial risk aversion and career concerns appear to motivate managers to play it safe. The two mechanisms also have quantitatively similar effects. When we test for heterogeneity based on inside ownership on the same sample as our test for career concerns (i.e., restricted to CEOs in office when a BC law is adopted), we find a similar magnitude increase in diversifying acquisitions among high inside ownership firms as we find for firms with younger CEOs (see Appendix Table A.8).[13]

4.5. Different prescriptions for different agency problems

Our findings imply that boards must balance conflicting incentives when choosing leverage and inside ownership. As illustrated in Section 1, these corporate policies have opposite effects on the different agency problems. Although these instruments aggravate managers' incentives to play it safe, they can also help prevent other agency problems by eliciting managerial effort (Jensen, 1986). Indeed, Bertrand and Mullainathan (2003) and others have shown that many managers reduce effort and "enjoy the quiet life" after a BC law is adopted.

To examine the dual role of inside ownership and financial leverage in both exacerbating and mitigating different managerial agency conflicts, we analyze heterogeneity in the response of firms' return on assets (ROA) to BC laws. Following Giroud and Mueller (2010) and others, we examine ROA as a test for managers' enjoying the quiet life, because ROA declines when managers fail to exert the effort necessary to grow revenues and hold down expenses. Indeed, Giroud and Mueller (2010) find that the average firm's ROA declines after BC laws are adopted.

Consistent with inside ownership and financial leverage encouraging managerial effort, we find that ROA declines only among firms with low leverage and low inside ownership. The estimates are reported in Table 12. Among firms with below median leverage, ROA declines by 2.3 percentage points, on average, after a BC law is adopted relative to other firms with below median leverage operating in the same state and same industry but incorporated elsewhere [Panel

[13] The different magnitudes in Tables 10 and 11 reflect the difference in the sample selection criteria. The average and standard deviation for diversifying acquisitions is higher in the considerably smaller subsample of firms where we are able to identify CEO changes. See Section 5 for further evidence of our findings' robustness to restricting the sample to CEOs in office when a BC law is adopted.

B, Column (1)]. Likewise, we find statistically significant evidence of a decline in ROA among firms with below median inside ownership [Panel B, Column (2)].

The contrasting findings for ROA and diversifying acquisitions highlight that shareholders face multiple agency conflicts with managers and that these different conflicts call for different prescriptions. In fact, as illustrated by Eq. (3), the solution to one agency problem may often exacerbate another. Whether higher inside ownership or greater leverage will improve firm value depends on these inherent tradeoffs.

5. Robustness

Our findings are robust to a variety of alternative empirical specifications. In this section, we show that the decrease in risk and increase in acquisitions after a BC law's adoption hold under alternative samples and are not restricted to any specific state. The findings are also robust to controlling for other antitakeover laws and court rulings, as identified in Karpoff and Wittry (2014). These robustness tests confirm that confounding factors do not drive our findings.

5.1. Robustness to alternative samples

The declines in stock volatility and distress risk and increase in acquisition activity are robust to alternative sample selection criteria. Excluding financial firms (i.e., SIC codes 6000 through 6999) leaves our findings largely unchanged (see Appendix Table A.9). Likewise, ending our sample in 1995, as was done in the initial studies of BC laws, does not affect our findings: although the shorter sample period reduces the number of laws examined and the amount of post-period data for laws adopted in the early 1990s, we still find a decline in stock volatility and distress risk and increase in acquisitions (see Appendix Table A.10). The findings are also robust to excluding the twenty-six firms identified in Karpoff and Wittry (2014) as having lobbied for a BC law's adoption (see Appendix Table A.11). Finally, the findings are robust to limiting the sample of affected firms to observations where the same CEO is present as when the BC law was adopted, confirming that our findings reflect a change in CEO behavior, rather a change in the type of CEO hired after a BC law is adopted (see Appendix Table A.12).

5.2. Robustness to the source of within-state variation

Because we control for state-of-location-by-year fixed effects, our findings are estimated using only the differential responses to the passage of a BC law for firms located in the same state. This identification strategy is feasible because nearly 60 percent of firms in our sample are incorporated in a different state than where they are headquartered. By focusing on within-state

variation, we mitigate concerns that confounding local economic shocks might coincide with the adoption of BC laws. But what if firms incorporated locally and nonlocally face different economic shocks related to their difference in size, dependence on external finance, or other factor? If politicians are more sensitive to the shocks affecting firms operating within their borders than those affecting firms operating outside, then we might wonder if policy endogeneity still affects our results. We address this concern with an additional test.

The differential within-state response to BC laws that we isolate in our analysis could be coming from two sources: (1) the differential response of firms incorporated and located in state *A* that adopts a BC law, relative to other firms located in state *A* but incorporated elsewhere, or (2) the differential response of firms incorporated in state *A* but located in a different state *B* that does not adopt a BC law, relative to other firms located in state *B* but not incorporated in state *A*. The latter source of variation is not subject to the above concern about policy endogeneity to local economic shocks. To assess whether either or both types of variation contribute to our findings, we re-estimate the effect of BC laws in our base specification but allow for a differential effect for firms located and incorporated in the same state and for firms located and incorporated in different states. These estimates are reported in Appendix A.13.

The results are inconsistent with our findings being driven by local economic shocks. We find that the decrease in stock volatility and distress risk and the increase in acquisition activity are present for both types of affected firms. Although the increases in two of the four acquisition activity measures (deal value and the number of diversifying acquisitions) are not statistically significant for firms located and incorporated in the same state [Appendix Table A.13, Columns (8)-(9)], the point estimates are similar to those for firms located and incorporated in different states. These findings, particularly those for firms incorporated and located in different states, support the interpretation that the observed responses are not being driven by local political economy factors related to adoption of BC laws.

5.3. Robustness to controlling for other anti-takeover laws and court rulings

To highlight the importance of playing it safe motives, this paper examines the adoption of BC laws as our source of variation in external shareholder governance. A recent paper by Karpoff and Wittry (2014) questions whether BC laws were the most important legal development impacting corporate governance at the time. The analysis in our paper is not designed to address the question of which laws were more or less important. Rather, we aim to establish that a managerial preference to play it safe creates an important agency problem for shareholders. We study the adoption of BC laws to show that the same framework that provides

evidence of a managerial preference for a quiet life (Bertrand and Mullainathan, 2003) also provides evidence of a managerial preference to play it safe.

Nevertheless, as a robustness check, we repeat our analysis using the empirical specification recommended by Karpoff and Wittry (2014) for analyses of BC laws, and again confirm the importance of managers' playing it safe. Specifically, we add additional controls for other legal changes and court rulings that affect firms' threat of a hostile takeover during the sample period. These controls include the adoption of first-generation laws, poison pill laws, control share acquisition laws, directors' duties laws, fair price laws, and the *MITE*, *CTS*, *Amanda*, and *Unitrin* court decisions and interactions of these court decisions with indicators identifying firms incorporated in states that have one of the anti-takeover laws being validated or invalidated by the specific court ruling. For all variables, we follow the definitions in Karpoff and Wittry (2014). The results are reported in Appendix Table A.14.

Our findings are robust to using Karpoff and Wittry's preferred specification. After controlling for other state-level legal changes and court rulings, we find that adoption of a BC law remains significantly related to firms reducing stock volatility [Appendix Table A.14, Column (1)], experiencing fewer performance-related exits [Column (2)], and engaging in more acquisitions, particularly diversifying acquisitions [Columns (6)-(9)].

5.4. Robustness to excluding firms incorporated in Delaware or any other state

Our findings are also robust to excluding firms incorporated in Delaware, which account for about 50 percent of the observations in our sample and 80 percent of observations in which a firm is incorporated outside of their state of location. In analysis reported in Appendix Table A.15, we repeat the estimation after excluding observations for firms incorporated in Delaware. Although the decline in stock volatility is not statistically significant [Appendix Table A.15, Column (1)], the point estimate remains largely unchanged as do the decrease in distress risk and increase in acquisitions [Columns (2)-(9)]. These results mitigate concerns that some confounding event in Delaware in 1988, when its BC law was adopted, could explain our findings. In further tests, we confirm that our findings are also robust to individually excluding any of the 32 other states that adopted a BC law.

6. Conclusion

Based on data back to the 1980s, the *Wall Street Journal* recently declared that "long-running trends suggest the U.S. economy has turned soft on risk" and blamed the decreased risk-taking for contributing to the long-term slowing of the U.S. economy, increased corporate cash

holdings, and "sluggish economic recoveries" from recessions (Casselman, 2013). Multiple factors surely contribute to this trend. But interestingly, the decrease in risk-taking has coincided with increases in equity-based compensation (Frydman and Jenter, 2010) and the sensitivity of CEO turnover to corporate performance (Jenter and Lewellen, 2015), both of which give corporate leaders incentives to tread carefully. In this paper, we ask: might managers of U.S. firms be "playing it safe"?

We find that firms reduce risk-taking when shareholder governance is weakened by a state antitakeover law. Firms incorporated in these states reduce stock volatility and distress risk by about 7.5 percent and 25 percent of a standard deviation, respectively, relative to firms unaffected by the law operating in the same state and in the same industry. One way that managers reduce risk is by undertaking acquisitions that diversify the firm into new industries. The acquisitions follow (rather than precede) the laws' adoption, are funded largely with equity, destroy shareholder value, target firms likely to make their firms safer, and are concentrated among firms whose managers have a greater motive to reduce risk: firms with a greater volatility and distress risk; firms whose managers have greater exposure to their firms' risk through personal equity holdings; and firms with younger managers, who are more likely to be motivated by career considerations.

Understanding the relevance of various agency conflicts and how they vary across firms is crucial for designing incentive structures that mitigate their impact on shareholder value and potentially the aggregate economy.[14] If a manager fails to make risky investments out of a reluctance to exert costly effort, then shareholders might wish to increase the manager's ownership stake to better align their interests and encourage risk-taking. On the other hand, if the manager is forgoing these investments, particularly during periods of distress, either because she is risk-averse or because she worries about the potential impact of failure on her income and wealth, then increasing the managers' ownership stake in the firm will only worsen the agency conflict. In this case, increasing the convexity of the manager's payoff structure would be more appropriate (see Guay, 1999; Gormley, Matsa, and Milbourn 2013; and many others).

[14] Measuring the aggregate effects of playing it safe is an interesting area for future research. Unfortunately, this is not something our empirical setting allows us to test directly, because firms' accounting data do not separate investments, such as capital expenditures and R&D, between legacy and acquisition assets after a deal closes and because we do not observe investment expenditures at private targets before they are acquired. Analyzing the impact of the BC laws on aggregate state-level investment and long-term growth is also not straightforward, because available state-level economic data is aggregated based on firms' state of location, not the state of incorporation.

Understanding the agency conflict's source also has implications for a firm's optimal leverage, cash management, and other corporate policies. Although higher leverage, for example, can encourage managerial effort, it can exacerbate a manager's incentive to play it safe, which is an agency cost of debt highlighted by our findings. Our evidence therefore suggests that the primary challenge shareholders face may vary over time: a manager who exerts too little effort in normal times might be overly active in reducing risk in periods of distress. Managers' incentive to play it safe may also explain why empirical research finds little evidence of risk-shifting among firms in distress (e.g., Andrade and Kaplan, 1998; Rauh, 2009; Gilje, 2014); although risk-shifting is in shareholders' interest, managers' self interest in playing it safe may dominate.

Given managers' inclination to play it safe and the difficulty of detecting such behavior, boards must design governance and compensation contracts to motivate managers to take the risks necessary to maximize shareholder value. While our evidence highlights a visible manifestation of managers playing it safe, managers' risk-reducing choices are typically difficult to observe, even when they are pervasive. A manager faced with investment choices of varying risks, for example, might systematically choose investments of both lower risk and lower NPV, and because of information asymmetries, shareholders would typically have a hard time detecting such behavior. Similarly, managers may hoard cash under the ruse of "keeping the powder dry" for future investments, when, in reality, the manager is more concerned about avoiding distress that is personally costly. Other managers might mimic the actions of their peers to avoid standing out even when these actions are not best for their own company's shareholder value. If ignored, such actions could have important implications for shareholder value, and more broadly, aggregate investment and economic growth.

References

Acharya, Viral V., Yakov Amihud, and Lubomir Litov. 2011. Creditor Rights and Corporate Risk-Taking. *Journal of Financial Economics* 102(1): 150–166.

Acharya, Viral V., and A. Bisin. 2009. Managerial Hedging, Equity Ownership, and Firm Value. *RAND Journal of Economics* 40(1): 47–78.

Admati, Anat R., Peter M. DeMarzo, Martin F. Hellwig, Paul Pfleiderer. 2013. The Leverage Ratchet Effect. Working paper. Stanford University.

Amihud, Yakov, and Baruch Lev. 1981. Risk Reduction as a Managerial Motive for Conglomerate Mergers. *Bell Journal of Economics* 12(2): 605–617.

Atanassov, Julian. 2013. Do Hostile Takeovers Stifle Innovation? Evidence from Antitakeover Legislation and Corporate Patenting. *The Journal of Finance.* 68(3): 1097–1131.

Andrade, Gregor, and Steven N. Kaplan. 1998. How Costly is Financial (Not Economic) Distress? Evidence from Highly Leveraged Transactions that Became Distressed. *The Journal of Finance.* 53(5): 1443–1493.

Angrist, Joshua D., and Jorn-Steffen Pischke. 2009. *Mostly Harmless Econometrics*, Princeton University Press: New Jersey.

Aulette, Ken. 1986. *Greed and Glory on Wall Street: The Fall of the House of Lehman*. Random House: New York.

Baumol, William J. 1959. *Business Behavior, Value and Growth*. Macmillan: New York.

Bertrand, Marianne, and Sendhil Mullainathan. 2003. Enjoying the Quiet Life? Corporate Governance and Managerial Preferences. *Journal of Political Economy* 111(5): 1043–1075.

Boualam, Yasser, João F. Gomes, and Colin Ward. 2015. Understanding the Behavior of Distressed Stocks. Working paper. University of Pennsylvania.

Brick, Ivan E., Oded Palmon, and John K. Wald. 2012. Too Much Pay–Performance Sensitivity? *The Review of Economics and Statistics* 94(1): 287–303.

Brisley, Neil, Jay Cai, and Tu Nguyen. 2015. CEO Stock Ownership Requirements, Risk-taking, and Compensation. Working paper. Drexel University.

Cai, Jie, and Anand M. Vijh. 2007. Incentive Effects of Stock and Option Holdings of Target and Acquirer CEOs. *The Journal of Finance* 62(4): 1891–1933.

Cain, Matthew D., Stephen B. McKeon, and Steven Davidoff Solomon. 2014. Do Takeover Laws Matter? Evidence from Five Decades of Hostile Takeovers. Working paper. U.S.

Securities and Exchange Commission.

Casselman, Ben. 2013. Risk-Averse Culture Infects U.S. Workers, Entrepreneurs. *The Wall Street Journal*, June 2.

Chevalier, Judith, and Glenn Ellison. 1999. Career Concerns of Mutual Fund Managers? *The Quarterly Journal of Economics.* 114(2): 389–432.

Cohen, Moshe. 2012. Corporate Governance Law: Firm Heterogeneity and the Market for Corporate Domicile. Working paper. Columbia University.

Coles, Jeffrey L., Naveen D. Daniel, and Lalitha Naveen. 2006. Managerial incentives and risk-taking. *Journal of Financial Economics* 79(2): 431–468.

Coles, Jeffrey L., Michael L. Lemmon, and J. Felix Meschke. 2012. Structural Models and Endogeneity in Corporate Finance: The Link between Managerial Ownership and Corporate Performance. *Journal of Financial Economics* 103(1): 149–168.

Comment, Robert, and G. William Schwert. 1995. Poison or Placebo? Evidence on the Deterrence and Wealth Effects of Modern Antitakeover Measures. *Journal of Financial Economics* 39: 3–43.

Cziraki, Peter, and Moqi Xu. 2014. CEO job security and risk-taking. Working paper. University of Toronto.

Eckbo, Espen B.., Karin S. Thorburn, and Wei Wang. 2015. How costly is corporate bankruptcy for the CEO? *Journal of Financial Economics*. In press.

Francis, Bill B., Iftekhar Hasan, Kose John, and Maya Waisman. 2010. The Effect of State Antitakeover Laws on Firm's Bondholders. *Journal of Financial Economics* 96(1): 127–154.

Frydman, Carola, and Dirk Jenter. 2010. CEO Compensation. *Annual Review of Financial Economics* 2: 75–102.

Garvey, Gerald T., and Gordon Hanka. 1999. Capital Structure and Corporate Control: The Effect of Antitakeover Statutes on Firm Leverage. *The Journal of Finance.* 54(2): 519–546.

Gilje, Erik. 2014. Do Firms Engage in Risk Shifting? Empirical Evidence. Working paper. University of Pennsylvania.

Gilson, Stuart C. 1989. Management Turnover and Financial Distress. *Journal of Financial Economics* 25(2): 241–262.

Giroud, Xavier, and Holger M. Mueller. 2010. Does Corporate Governance Matter in Competitive Industries. *Journal of Financial Economics* 95: 312–331.

Gompers, Paul, Joy Ishii, and Andrew Metrick. 2003. Corporate Governance and Equity Prices. *The Quarterly Journal of Economics*, 118(1): 107–155.

Gormley, Todd A. and David A. Matsa. 2011. Growing Out of Trouble: Corporate Responses to Liability Risk. *Review of Financial Studies*, 24(8): 2781–2821.

Gormley, Todd A. and David A. Matsa. 2014. Common Errors: How to (and Not to) Control for Unobserved Heterogeneity. *Review of Financial Studies*, 27(2): 617–61.

Gormley, Todd A., David A. Matsa, and Todd Milbourn. 2013. CEO Compensation and Corporate Risk: Evidence from a Natural Experiment. *Journal of Accounting and Economics* 56: 79–101.

Grossman, Sanford J. and Oliver D. Hart. 1983. An Analysis of the Principal-Agent Problem. *Econometrica*, 51(1): 7–45.

Guay, W.R. 1999. The Sensitivity of CEO Wealth to Equity Risk: An Analysis of the Magnitude and Determinants. *Journal of Financial Economics* 53: 43–71.

Guimarães, P., and P. Portugal. 2010. A Simple Feasible Procedure to Fit Models with High-Dimensional Fixed Effects. *Stata Journal* 10: 628–49.

Harford, Jarrad, and Kai Li. 2007. Decoupling CEO Wealth and Firm Performance: The Case of Acquiring CEOs. *The Journal of Finance* 62(2): 917–949.

Heider, Florian, and Alexander Ljungqvist. 2015. As Certain as Debt and Taxes: Estimating the Tax Sensitivity of Leverage from Exogenous State Tax Changes. *Journal of Financial Economics*. In press.

Henderson, Vernon J., and Yukako Ono. 2008. Where Do Manufacturing Firms Locate Their Headquarters? *Journal of Urban Economics* 63(2): 431–50.

Hirsch, Barry T., and David A. Macpherson. 2003. Union Membership and Coverage Database from the Current Population Survey: Note. *Industrial and Labor Relations Review* 56(2): 349–54.

Hirsch, Barry T., David A. Macpherson, and Wayne G. Vroman. 2001. Estimates of Union Density by State. *Monthly Labor Review* 124(7): 51–55.

Hirshleifer, David, and Yoon Suh. 1992. Risk, Managerial Effort, and Project Choice. *Journal of Financial Intermediation* 2(3): 308–345.

Holmström, Bengt. 1999. Managerial Incentive Problems: A Dynamic Perspective. *Review of Economic Studies* 66(1): 169–182.

Israel, R. 1991. Capital Structure and the Market for Corporate Control: The Defensive Role of

Debt Financing. *The Journal of Finance* 46: 1391–409.

Jagannathan, Ravi, David A. Matsa, Iwan Meier, and Vefa Tarhan. 2015. Why Do Firms Use High Discount Rates? Working paper. Northwestern University.

Jensen, Michael C. 1986. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review* 76(2): 323–329.

Jensen, Michael C., and William H. Meckling. 1976. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics* 3(4): 305–360.

Jenter, D., and F. Kanaan. 2015. CEO Turnover and Relative Performance Evaluation. *The Journal of Finance*. In press.

Jenter, Dirk, and Katharina Lewellen. 2014. Performance-induced CEO Turnover. Working paper. Stanford University.

Jenter, Dirk, and Katharina Lewellen. 2015. CEO Preferences and Acquisitions. *The Journal of Finance.* In press.

John, Kose, Yuanzhi Li, and Jiaren Pang. 2010. When Does Corporate Governance Matter? Evidence from Anti-Takeover Legislation. Working paper. New York University.

Karpoff, Jonathan M., and Paul H. Malatesta. 1989. The Wealth Effects of Second-Generation State Takeover Legislation. *Journal of Financial Economics* 25: 291–322.

Kim, E. Han, and Yao Lu. 2011. CEO Ownership, External Governance, and Risk-Taking. *Journal of Financial Economics* 102: 272–292.

Levine, Oliver, and Youchang Wu. 2014. Asset Volatility and Financial Policy: Evidence from Corporate Mergers. Working paper. University of Wisconsin-Madison.

Linck, J. S., J. M. Netter, and T. Yang. 2008. The Determinants of Board Structure. *Journal of Financial Economics* 87: 308–28.

Lel, Ugur, and Darius P. Miller. 2015. Does Takeover Activity Cause Managerial Discipline? Evidence from International M&A Laws. *Review of Financial Studies* 28(6): 1588–1622.

Low, Angie. 2009. Managerial Risk-Taking Behavior and Equity-Based Compensation. *Journal of Financial Economics* 92(3): 470–490.

MacKinlay, A. Craig. 1997. Event Studies in Economics and Finance. *Journal of Economic Literature* 35(1): 13–39.

Mann, Henry G. 1965. Mergers and the Market for Corporate Control. *Journal of Political Economy* 73(2): 110–120.

Matsa, David A. 2010. Capital Structure as a Strategic Variable: Evidence from Collective Bargaining. *The Journal of Finance* 65(3): 1197–1232.

Maug, Ernst. 2015. Discussion at 12th Annual Conference in Financial Economics Research. Interdisciplinary Center, Herzliya, Israel.

Marris, Robin L. *The Economic Theory of Managerial Capitalism*. London: Macmillan, 1964.

May, Don O. 1995. Do Managerial Motives Influence Firm Risk Reduction Strategies? *The Journal of Finance* 50(4): 1291–1308.

Moeller, S. B., F. P. Schlingemann, and R. M. Stulz. 2005. Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave. *The Journal of Finance* 40(2): 757–82.

Palia, Darius, S. Abraham Ravid, and Natalia Reisel. 2008. Choosing to Cofinance: Analysis of Project-Specific Alliances in the Movie Industry. *Review of Financial Studies* 21: 483–511.

Panousi, Vasia, and Dimitris Papanikolaou. 2012. Investment, Idiosyncratic Risk, and Ownership. *Journal of Finance* 67(3): 1113–1148.

Parrino, Robert, Allen M. Poteshman, and Michael S. Weisbach. 2005. Measuring Investment Distortions When Risk-averse Managers Decide Whether to Undertake Risky Projects. *Financial Management* 32: 21–61.

Pinnell, Maria Carmen S. 2000. *State Takeover Laws* Washington, DC: Investor Responsibility Research Center Inc.

Rauh, Joshua D. 2006. Own Company Stock in Defined Contribution Pension Plans: A Takeover Defense? *Journal of Financial Economics* 81: 379–410.

Rauh, Joshua D. 2009. Risk Shifting versus Risk Management: Investment Policy in Corporate Pension Plans. *Review of Financial Studies* 22(7): 2687–2733.

Ravid, S. Abraham, and Suman Basuroy. 2004. Managerial Objectives, the R-Rating Puzzle, and the Production of Violent Films. *The Journal of Business* 77(2): S155–S192.

Romano, Roberta. 1987. The Political Economy of Takeover Statutes. *Virginia Law Review* 73: 111–199.

Scharfstein, David. 1988. The Disciplinary Role of Takeovers. *The Review of Economic Studies* 55(2): 185–199.

Smith, Clifford W., and Rene M. Stulz. 1985. The Determinants of Firms' Hedging Policies. *Journal of Financial and Quantitative Analysis* 20(4): 391–405.

Stein, Jeremy C. 1988. Takeover Threats and Managerial Myopia. *Journal of Political Economy* 96(1): 61–80.

Sundheim, Doug. 2013. *Taking Smart Risks: How Sharp Leaders Win When Stakes Are High*. McGraw Hill: New York.

Szewczyk, Samuel H., and George P. Tsetsekos. 1992. State intervention in the market for corporate control: The case of Pennsylvania Senate Bill 1310. *Journal of Financial Economics* 31: 3–23.

Thomson Financial. 1999. Mergers & Acquisitions Definitions. Securities Data Corporation.

Tufano, P. 1996. Who Manages Risk? An Empirical Examination of Risk Management Practices in the Gold Mining Industry. *Journal of Finance* 51(4): 1097–1137.

Williamson, Oliver E. 1964. *The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm*. Prentice-Hall: Englewood Cliffs, N.J..

Yun, Hayong. 2009. The Choice of Corporate Liquidity and Corporate Governance. *Review of Financial Studies.* 22(4): 1447–1475.

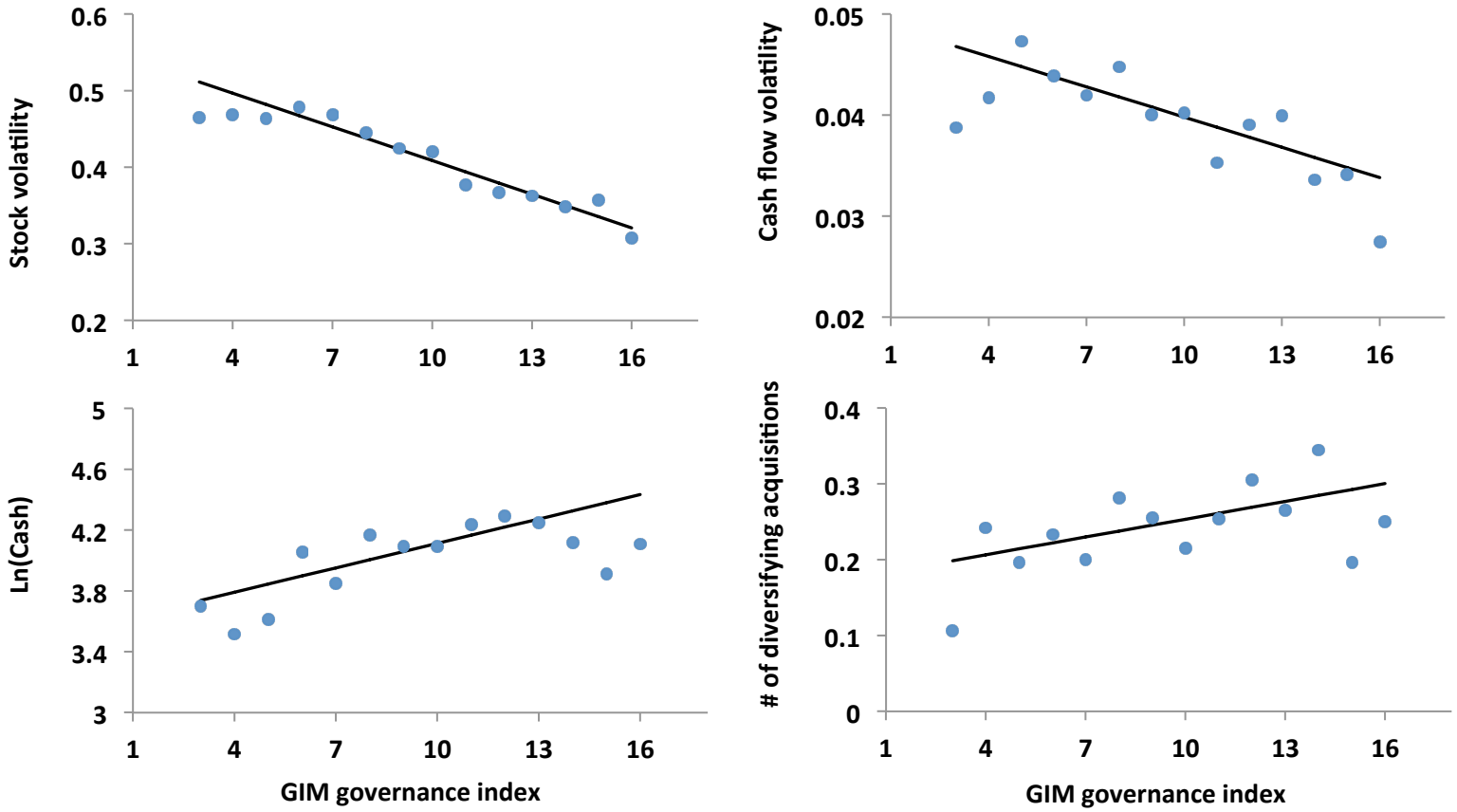

Figure 1

Correlations between standard proxies of firms' riskiness and the GIM governance index

This figure plots the average stock volatility, the volatility of quarterly cash flows to assets, log cash holdings, and the number of diversifying acquisitions against the GIM governance index for index scores with at least 50 observations and for all years in which the index is available from the Investor Responsibility Research Center. The regression lines shown are weighted based on the underlying number of observations.

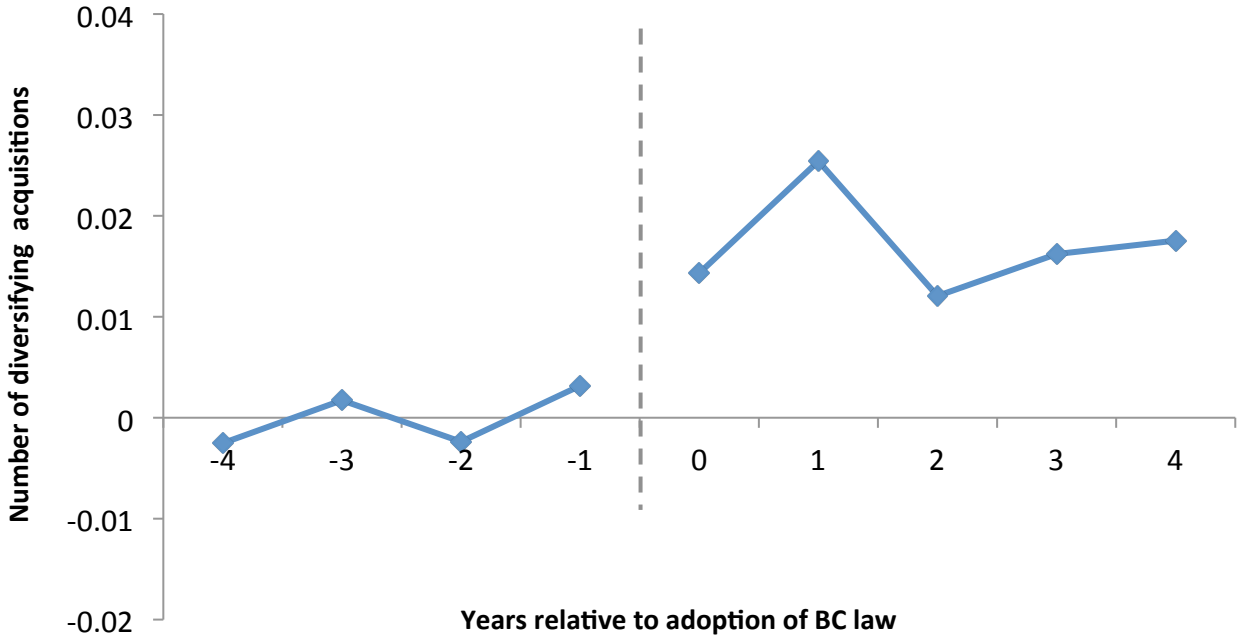

Figure 2

Timing of BC laws' effect on the number of diversifying acquisitions

This figure plots point estimates from a firm-panel regression of an indicator for undertaking an acquisition onto indicators for business combination (BC) laws, firm fixed effects, state of location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The specification is the same as that reported in Table 3, Column (4), except that the effect of BC laws is allowed to vary annually in event time.

Table 1

Firm characteristics before laws' adoption

This table reports summary statistics for firm characteristics in the three years before a new business combination (BC) law is adopted. The mean and standard deviation (in parentheses) for each variable are reported separately for two samples of firms. Column (1) reports estimates for firms incorporated in states that adopt a BC law in the following year. Column (2) reports estimates from the same year for firms incorporated in other states. Column (3) reports the *p*-value from a *t*-test of the difference between affected and unaffected firms, where the standard errors are adjusted for clustering at the state-of-incorporation level.

	BC Law	**No BC Law**	***p*-value of difference**
	(1)	(2)	(3)
Ln(Assets)	4.09	4.02	0.533
	(2.50)	(2.52)	
Return on assets	-0.032	-0.046	0.217
	(0.387)	(0.415)	
Debt / Assets	0.293	0.294	0.896
	(0.297)	(0.315)	
3-year asset CAGR (%)	13.54	13.83	0.824
	(31.78)	(36.64)	
Stock volatility	0.539	0.547	0.683
	(0.313)	(0.373)	
Cash flow volatility	0.077	0.077	0.948
	(0.095)	(0.099)	
Indicator for acquisition	0.076	0.088	0.276
	(0.265)	(0.283)	
# of diversifying acquisitions	0.070	0.086	0.148
	(0.351)	(0.424)	
Observations	5,187	44,771	

Table 2

Effect of BC laws on stock volatility and distress risk

This table reports coefficients from firm-panel regressions of a firm's stock volatility, distress risk, and related characteristics on an indicator for whether the firm's state of incorporation has adopted a business combination (BC) law, firm fixed effects, state of location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The dependent variables are volatility of daily stock returns [Column (1)], an indicator for being delisted because of liquidation, bankruptcy, or other performance-related reason [Column (2)], volatility of daily operating asset returns [Column (3)], volatility of quarterly ratios of cash flow to assets [Column (4)], and log cash holdings [Column (5)]. The sample includes firm-year observations from 1976 to 2006. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level.

Dependent variable =	**Stock volatility**	**Performance-related exit**	**Operating asset volatility**	**Cash flow volatility**	**Ln(Cash)**
	(1)	(2)	(3)	(4)	(5)
BC law	-0.023***	-0.035***	-0.015**	-0.0028	0.121**
	(0.008)	(0.011)	(0.006)	(0.0026)	(0.049)
Firm FE	X	X	X	X	X
State-year FE	X	X	X	X	X
Industry-year FE	X	X	X	X	X
N	132,494	195,895	120,401	100,893	172,739
R^2	0.66	0.22	0.78	0.534	0.83

Table 3

Effect of BC laws on acquisitions

This table reports coefficients from firm-panel regressions of acquisition activity on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm fixed effects, state of location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The dependent variables are the number of acquisitions [Column (1)], an indicator for undertaking an acquisition [Column (2)], the deal value of acquisitions scaled by the market value of the acquirer's assets in the previous year [Column (3)], and the number of diversifying acquisitions [Column (4)]. The sample includes firm-year observations from 1980 to 2006. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. **significant at the 5% level; *significant at the 10% level.

Dependent variable =	**Number of acquisitions**	**Any acquisition indicator**	**Deal value / (Acquirer assets in t-1)**	**Number of diversifying acquisitions**
	(1)	(2)	(3)	(4)
BC law	0.027**	0.009*	0.0017**	0.018**
	(0.011)	(0.005)	(0.0008)	(0.008)
Firm FE	X	X	X	X
State-year FE	X	X	X	X
Industry-year FE	X	X	X	X
N	192,133	192,133	152,970	192,133
R^2	0.38	0.33	0.27	0.35

Table 4

Effect of BC laws on target characteristics

This table reports coefficients from firm-panel regressions of target firm characteristics on an indicator for whether an acquiring firm's state of incorporation has adopted a business combination (BC) law, an indicator for whether the acquiring firm is ever subjected to a BC law, state of location fixed effects, 4-digit SIC industry fixed effects, year fixed effects, and a control for whether the target is incorporated in a state with a BC law. The dependent variables are ex ante target characteristics from Compustat and CRSP: correlation of monthly stock returns between the acquirer and target in the five years prior to the acquisition, Altman's *z*-score, correlation of monthly operating asset returns between the acquirer and target in the five years prior to the acquisition, correlation of quarterly cash flow scaled by assets between the acquirer and target in the five years prior to the acquisition, log total cash, assets' three-year compounded annual growth rate (CAGR), the ratio of cash flow to assets, and the ratio of the total payout to assets. The sample of acquisitions is the sample analyzed in Table 3 further restricted to mergers with non-missing observations for the target's assets and deal value. All estimations are weighted by deal value. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Dependent variable =	**Correlation of stock returns**	**Altman's *z*-score**	**Corr. of operating asset returns**	**Correlation of cash flow to assets**	**Ln(Cash)**	**3-year asset CAGR**	**Cash flow / Assets**	**Payout / Assets**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BC law	-0.194***	3.350**	-0.278***	-0.240*	1.123	0.191**	0.089***	0.027***
	(0.061)	(1.330)	(0.071)	(0.131)	(0.722)	(0.085)	(0.019)	(0.005)
N	922	1,925	798	1,174	1,804	1,721	2,001	2,093
R^2	0.79	0.63	0.81	0.60	0.67	0.49	0.46	0.61
Fixed effects:								
State	X	X	X	X	X	X	X	X
Industry	X	X	X	X	X	X	X	X
Year	X	X	X	X	X	X	X	X
Control for target being in BC state	X	X	X	X	X	X	X	X

Table 5

Effect of BC laws on acquisition characteristics

Panel A of this table reports the mean and standard error (in parentheses), weighted by deal value, of acquisition characteristics for acquisitions undertaken by firms incorporated in business combination (BC) law states after the laws' adoption. The acquisition characteristics are the percent of the deal value paid in equity and the acquirer's cumulative abnormal return (CAR) over a three-day window around the deal's announcement, computed using a market model and CRSP equally weighted index returns estimated over the [-300, -46] day interval. Both variables are winsorized at the one percent tails. Panel B reports the coefficients from firm-panel regressions of these characteristics on an indicator for whether an acquiring firm's state of incorporation has adopted a BC law, an indicator for whether the acquiring firm is ever subject to a BC law, state of location fixed effects, 4-digit SIC industry fixed effects, year fixed effects, and an indicator for whether the target is incorporated in a state with a BC law. In Panel B, the sample of acquisitions is the same as in Table 4, and the estimations are weighted by deal value. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. *** significant at 1% level.

Panel A. Average acquisition characteristics in BC law states

	(1)
Percent equity	69.7
	(2.66)
Acquirer announcement CAR [-1,1] (%)	-5.63
	(0.76)

Panel B. Effect of BC laws on acquisition characteristics

Dependent variable =	**Percent equity**	**Acquirer annoucement CAR [-1,1] (%)**
	(2)	(3)
BC law	21.2***	-3.26***
	(5.14)	(1.18)
N	1,978	1,987
R^2	0.61	0.51
Fixed effects:		
State	X	X
Industry	X	X
Year	X	X
Control for target being in BC state	X	X

Table 6

Effect of acquisitions on affected firms' stock volatility and distress risk

This table reports coefficients from firm-level regressions of measures of a firm's stock volatility, distress risk, and related characteristics on an indicator for whether the firm increases its acquisition activity after a business combination (BC) law is adopted. Only firms incorporated in a state that adopts a BC law are included in the regression. The dependent variables are: change in stock volatility [Column (1)], an indicator for being delisted because of liquidation, bankruptcy, or other performance-related reason [Column (2)], change in operating asset volatility [Column (3)], change in cash flow volatility [Column (4)], and change in log cash [Column (5)]. A firm's acquisition response to the adoption of a BC law is measured using the change in the number of acquisitions completed between the years t ϵ [-5, -1] and t ϵ [0, 4]; the median such change in the sample is zero. The changes in volatility and log cash are equal to the differences in volatility and log cash between the year prior to the BC law's adoption and ten years afterwards. All estimates include cohort fixed effects. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Dependent variable =	**Change in stock volatility [t-1,t+10]**	**Performance-related exit by t = 10**	**Change in operating asset volatility [t-1,t+10]**	**Change in cash flow volatility [t-1,t+10]**	**Change in Ln(Cash) [t-1,t+10]**
	(1)	(2)	(3)	(4)	(5)
Indicator for increase in acquisitions following BC law	-0.037**	-0.042***	-0.025	-0.0083*	0.345***
	(0.016)	(0.011)	(0.018)	(0.0043)	(0.107)
N	1,412	2,565	970	823	1,222
R^2	0.06	0.01	0.05	0.01	0.04

Table 7

Importance of including fixed effects and avoiding endogenous controls

This table reports coefficients from firm-panel regressions of the total number of acquisitions in a year on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law. Column (1) reports estimates from Equation (6)—the standard specification used in the existing literature, which includes controls for the state-year average of the dependent variable, the 3-digit SIC industry-year average of the dependent variable, firm fixed effects, time-varying controls for firm size (measured using log assets), size-squared, firm age (measured using the number of years a firm has been in Compustat), and the Herfindhal-Hirschman index of sales in the firm's 3-digit SIC industry—estimated using a sample window of 1976 to 1995. Each of the next six columns repeats the estimation from the previous column with the following changes: Column (2) extends the sample period to 2006; Column (3) adds the BC law changes for Iowa, Oregon, and Texas; Column (4) uses 4-digit industry-year averages of the dependent variable as controls in place of the 3-digit ones; Column (5) replaces the controls for the industry-year and state-year averages of the dependent variable with industry-by-year and state-by-year fixed effects; Column (6) drops the time-varying controls; and Column (7) uses historical state of locations rather than the locations provided by the legacy version of Compustat and drops firms that change their treatment status by reincorporating. The estimate in Column (7), which correspond to Equation (4), is the same as those reported in Column (1) of Table 3. Column (8) reports results from Equation (7)—the matching difference-in-differences estimator. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Dependent variable = Number of acquisitions

	Standard specification used in literature ***[Equation (6)]***	**First, extend sample to year 2006**	**Second, add BC law changes for IA, OR, and TX**	**Third, switch to 4-digit SIC controls**	**Fourth, properly control for FE**	**Fifth, drop endogenous controls**	**Sixth, drop endogenous movers** ***[Our final specification, Equation (4)]***	**Our matched diff-in-diff** ***[Equation (7)]***
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BC law	0.014	0.010	0.010	0.010	0.021**	0.031***	0.027**	0.026**
	(0.009)	(0.011)	(0.011)	(0.011)	(0.010)	(0.010)	(0.011)	(0.012)
N	109,168	193,071	193,071	192,809	193,075	198,206	192,133	545,212
R^2	0.35	0.32	0.32	0.32	0.39	0.38	0.38	0.45

Table 8

Heterogeneity with respect to cash flow and leverage

This table reports coefficients from firm-panel regressions of the number of acquisitions or number of diversifying acquisitions on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm-by-cohort fixed effects, state of location-by-year-by-cohort fixed effects, and 4-digit SIC industry-by-year-by-cohort fixed effects. The data include firm-year-cohort observations in the 10 years before and 10 years after the adoption of each new BC law. Panel A restricts the sample to firms with below median ratio of cash flow to assets [Columns (1) and (3)] or above median leverage [Columns (2) and (4)] in the year before a BC law's adoption. Panel B restricts the sample to firms with above median ratio of cash flow to assets or below median leverage. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level.

Dependent variable =	**Number of acquisitions**		**Number of diversifying acquistions**	
	(1)	(2)	(3)	(4)
Panel A: Firms with LOW cash flow or HIGH leverage in year T-1				
	Low cash flow / assets	**High leverage**	**Low cash flow / assets**	**High leverage**
BC law	0.026***	0.034***	0.018**	0.021**
	(0.008)	(0.012)	(0.008)	(0.010)
N	202,376	266,500	202,376	266,500
R^2	0.54	0.52	0.53	0.51
Panel B: Firms with HIGH cash flow or LOW leverage in year T-1				
	High cash flow / assets	**Low leverage**	**High cash flow / assets**	**Low leverage**
BC law	0.003	0.014	-0.004	0.011
	(0.021)	(0.013)	(0.018)	(0.010)
N	230,452	274,936	230,452	274,936
R^2	0.54	0.53	0.52	0.52
Firm-cohort FE	X	X	X	X
State-year-cohort FE	X	X	X	X
Industry-year-cohort FE	X	X	X	X
P-value of difference	0.268	0.112	0.213	0.328

Table 9

Heterogeneity with respect to volatility and distress risk

This table reports coefficients from firm-panel regressions of the number of acquisitions or the number of diversifying acquisitions on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm-by-cohort fixed effects, state of location-by-year-by-cohort fixed effects, and 4-digit SIC industry-by-year-by-cohort fixed effects. The data include firm-year-cohort observations in the 10 years before and 10 years after the adoption of each new BC law. Panel A restricts the sample to firms with greater volatility or distress risk before the BC law's adoption, as measured by having above median stock volatility in the year before adoption [Columns (1) and (5)], above median operating asset volatility in the year before adoption [Columns (2) and (6)], above median cash flow volatility in the three years before adoption [Columns (3) and (7)], or below median cash holdings in the year before adoption [Columns (4) and (8)]. Panel B restricts the sample to firms with below median stock volatility, below median operating asset volatility, below median cash flow volatility, or above median cash holdings. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level.

Dependent variable =	**Number of acquisitions**				**Number of diversifying acquisitions**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Firms with HIGH volatility and distress risk in year T-1								
	High stock volatility	**High operating asset volatility**	**High cash flow volatility**	**Low cash**	**High stock volatility**	**High operating asset volatility**	**High cash flow volatility**	**Low cash**
BC law	0.037***	0.052***	0.049**	0.050***	0.029***	0.038***	0.028**	0.033***
	(0.011)	(0.010)	(0.019)	(0.007)	(0.009)	(0.011)	(0.014)	(0.007)
N	198,119	167,774	165,270	208,933	198,119	167,774	165,270	208,933
R^2	0.49	0.49	0.59	0.52	0.47	0.45	0.58	0.50

Panel B: Firms with LOW volatility and distress risk in year T-1

	Low stock volatility	Low operating asset volatility	Low cash flow volatility	High cash	Low stock volatility	Low operating asset volatility	Low cash flow volatility	High cash
BC law	0.005	0.008	0.021	0.001	-0.001	-0.005	0.008	0.001
	(0.020)	-(0.020)	(0.019)	(0.020)	(0.016)	(0.015)	(0.009)	(0.017)
N	231,585	185,274	186,376	233,580	231,585	185,274	186,376	233,580
R^2	0.57	0.62	0.58	0.54	0.57	0.62	0.57	0.54
Firm-cohort FE	X	X	X	X	X	X	X	X
State-year-cohort FE	X	X	X	X	X	X	X	X
Industry-year-cohort FE	X	X	X	X	X	X	X	X
P-value of difference	0.128	0.059	0.382	0.011	0.078	0.022	0.233	0.042

Table 10

Heterogeneity with respect to inside ownership

This table reports coefficients from firm-panel regressions of the number of acquisitions or the number of diversifying acquisitions on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm-by-cohort fixed effects, state of location-by-year-by-cohort fixed effects, and 4-digit SIC industry-by-year-by-cohort fixed effects. The data include firm-year-cohort observations in the 10 years before and 10 years after the adoption of each new BC law. Panel A restricts the sample to firms with above median inside ownership in the year before a BC law's adoption. Panel B restricts the sample to firms with below median inside ownership. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. *significant at the 10% level.

Dependent variable =	**Number of acquisitions**	**Number of diversifying acquisitions**
	(1)	(2)
Panel A. Firms with ABOVE median inside ownership in year T-1		
BC law	0.017	0.030*
	(0.013)	(0.016)
N	104,014	104,014
R^2	0.62	0.60
Panel B. Firms with BELOW median inside ownership in year T-1		
BC law	0.005	-0.016
	(0.023)	(0.026)
N	99,729	99,729
R^2	0.68	0.67
Firm-cohort FE	X	X
State-year-cohort FE	X	X
Industry-year-cohort FE	X	X
P-value of difference	0.651	0.021

Table 11

Heterogeneity with respect to CEO age

This table reports coefficients from firm-panel regressions of the number of acquisitions and the number of diversifying acquisitions on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm-by-cohort fixed effects, state of location-by-year-by-cohort fixed effects, and 4-digit SIC industry-by-year-by-cohort fixed effects. The data include firm-year-cohort observations in the 10 years before and 10 years after the adoption of each new BC law. Panel A restricts the sample to firms with a CEO aged 55 years or younger in the year before a BC law's adoption. Panel B restricts the sample to firms with a CEO older than 55 years. In both panels, the sample includes only observations for which that CEO is in office. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level.

Dependent variable =	**Number of acquisitions**	**Number of diversifying acquisitions**
	(1)	(2)
Panel A. Firms with CEO age ≤ 55 in year T-1		
BC law	0.211***	0.203***
	(0.052)	(0.059)
N	73,522	73,522
R^2	0.67	0.64
Panel B. Firms with CEO age > 55 in year T-1		
BC law	0.109	0.035
	(0.091)	(0.050)
N	22,044	22,044
R^2	0.85	0.87
Firm-cohort FE	X	X
State-year-cohort FE	X	X
Industry-year-cohort FE	X	X
P-value of difference	0.216	0.020

Table 12

Heterogeneity in the effect of BC laws on ROA

This table reports coefficients from firm-panel regressions of return on assets (ROA), an outcome used in studies of the "quiet life" agency conflict, on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm-by-cohort fixed effects, state of location-by-year-by-cohort fixed effects, and 4-digit SIC industry-by-year-by-cohort fixed effects. The data include firm-year-cohort observations in the 10 years before and 10 years after the adoption of each new BC law. Panel A restricts the sample to firms with above median leverage [Column (1)] or above median inside ownership [Column (2)] in the year before a BC law's adoption. Panel B restricts the sample to firms with below median leverage [Column (1)] or below median inside ownership [Column (2)]. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. * significant at the 10% level.

Dependent variable =	**Return on assets**	
	(1)	(2)
Panel A: Firms with HIGH leverage or inside ownership in year T-1		
	High leverage	**High ownership**
BC law	0.003	-0.003
	(0.010)	(0.009)
N	254,889	100,488
R^2	0.63	0.70
Panel B: Firms with LOW leverage or inside ownership in year T-1		
	Low leverage	**Low ownership**
BC law	-0.023*	-0.016**
	(0.013)	(0.008)
N	262,662	97,321
R^2	0.60	0.68
Firm-cohort FE	X	X
State-year-cohort FE	X	X
Industry-year-cohort FE	X	X
P-value of difference	0.019	0.268

Appendix Table A.1

Business combination laws adopted by year and state

This table reports the states that adopted a business combination law and the year in which the law was adopted. To identify when BC laws were adopted in each state, we use the dates for 30 states that adopted laws between 1985 and 1991, as reported in Bertrand and Mullainathan (2003), and augment their list to account for the adoption of BC laws in the following three additional states reported in Pinnell (2000): Iowa, Oregon, and Texas.

Arizona (1987)	Nevada (1991)
Connecticut (1989)	New Jersey (1986)
Delaware (1988)	New York (1985)
Georgia (1988)	Oklahoma (1991)
Idaho (1988)	Ohio (1990)
Illinois (1989)	Oregon (1991)
Indiana (1986)	Pennsylvania (1989)
Iowa (1997)	Rhode Island (1990)
Kansas (1989)	South Carolina (1988)
Kentucky (1987)	South Dakota (1990)
Maine (1988)	Tennessee (1988)
Maryland (1989)	Texas (1997)
Massachusetts (1989)	Virginia (1988)
Michigan (1989)	Washington (1987)
Minnesota (1987)	Wisconsin (1987)
Missouri (1986)	Wyoming (1989)
Nebraska (1988)	

Appendix Table A.2
Variable definitions

State of incorporation and state of location for firms	Obtained from Cohen (2012), who collected information back to 1990 from the SEC disclosure CDs and Compustat back-tapes, and from SEC Analytics, which contains historical information back to 1994 from firms SEC filings. In cases where the two sources disagree, we use firms' historical 10Ks and *Moody's Manuals* to determine which is correct. For observations prior to 1990, we use the earliest incorporation and location information available for each firm, and when location information is missing entirely, such as for firms that stopped filling prior to 1990, we use locations reported in the legacy version of Compustat.
Stock volatility	Calculated from CRSP using the square root of the sum of squared daily returns over the year. To adjust for differences in the number of trading days, the raw sum is multiplied by 252 and divided by the number of trading days.
Performance-related exit	Indicator for firm exit because of a liquidation, bankruptcy, or performance-related reason, as identified using CRSP delisting codes 400-500, 550, 552, 560, 561, 572, 574, 580, and 584.
Operating asset volatility	*Stock volatility* × (E/(V − C)), where E/(V − C) is calculated from Compustat using (csho × prcc_f) / (lt + (csho × prcc_f) − ch).
Cash flow volatility	Calculated from Compustat using the annual standard deviation of firms' quarterly ratio of cash flow to assets.
Ln(Cash)	Calculated from Compustat using ln(ch).
Number of acquisitions	Calculated using SDC's Mergers and Acquisitions Database after excluding acquisitions meeting any of the following criteria: (1) the ratio of the deal size to market value of the acquirer's assets is less than 1%; (2) the acquiring firm controlled more than 50% of the target prior to the announcement date or less than 100% after the acquisition was completed; (3) the ultimate parent of the acquirer and the target are the same; (4) either the acquirer or the target is a financial firm; or (5) the deal was not completed within 1,000 days of the announcement date.
Any acquisition indicator	Indicator equal to one if the firm undertakes an acquisition. Calculated using SDC's Mergers and Acquisitions Database using the same filters applied when calculating the number of acquisitions.
Deal value / (Value of acquirer assets in t-1)	Deal value is calculated using SDC's Mergers and Acquisitions Database using the same filters applied when calculating the number of acquisitions. Market value of assets are calculated using Compustat, where market value of assets = csho × prcc_c + dltt + dlc.
Number of diversifying acquisitions	Number of acquisitions a firm undertakes for which its primary SIC industry does not coincide with any SIC code of the target firm. Calculated using SDC's Mergers and Acquisitions Database using the same filters applied when calculating the number of acquisitions.
Correlation of stock returns	Calculated from CRSP using the correlation of monthly stock returns between the acquirer and target firms in the five years prior to the acquisition.

Altman's *z*-score	Calculated from Compustat using (3.3 × oiadp + 0.999 × sale + 1.4 × re + 1.2 × wcap) / at + (0.6 × csho × prcc_f) / lt.
Correlation of operating asset returns	Calculated using the correlation of monthly operating asset returns between the acquirer and target firms in the five years prior to the acquisition, where operating asset returns equal r_f + [prc*(shrout/1000) / (lt + prc × (shrout/1000) − ch)]*(ret − r_f), r_f is the market yield on 1-year constant-maturity U.S. Treasury securities from the Federal Reserve Board, prc, ret, and shrout are from CRSP, and lt and ch are for the most recent quarter-end from Compustat.
Correlation of cash flow to assets	Calculated from Compustat using the correlation of quarterly ratios of cash flow to assets between the acquirer and target firms in the five years prior to the acquisition.
Ln(Assets)	Calculated from Compustat using ln(at).
3-year asset CAGR	Calculated from Compustat using $((at_t / at_{t-3})^{1/3} - 1) \times 100$.
Payouts / Assets	Dividends plus repurchases scaled by assets, calculated from Compustat using (dvc + prstkc) / at.
Percent equity	Percentage of consideration paid in stock (from SDC's Mergers and Acquisition Database).
Acquirer announcement CAR [-1,1] (%)	Acquirer's market model cumulative abnormal stock returns over a three-day window [−1, +1] around a deal's announcement using CRSP equally weighted index returns and parameters estimated over the [−300, −46] day interval (see MacKinlay, 1997).
Return on assets	Calculated from Compustat using ni/at.
Cash flow / Assets	Calculated from Compustat using $oiadp_t$ - $accruals_t$) / at_{t-1}, where $accruals_t = (act_t - act_{t-1}) - (che_t - che_{t-1}) - (lct_t - lct_{t-1}) + (dlc_t - dlc_{t-1}) - dp_t$.
Debt / Assets	Calculated from Compustat using (dltt + dlc)/at.
Inside ownership	Total ownership share of the CEO, as constructed by Yermack (1995), which covers firms listed by Forbes magazine as among the 500 largest U.S. public corporations in each of the years 1984-1991. When this information is missing, we use the total reported shares held by a firm's senior management as a fraction of the firm's total shares outstanding at the end of the year, as recorded by TFN Insider Filing Data and constructed by Panousi and Papanikolaou (2012). When classifying firms, we calculate the median value separately for each data source.
CEO age	Obtained from the Disclosure database, provided by James S. Linck.

* All financial ratios are winsorized at 1% tails

Appendix Table A.3

Summary statistics for outcome variables

This table reports the sample mean, median, and standard deviation for all outcome variables. Target and acquisition charateristics are weighted by deal value. Definitions for all variables can be found in Appendix Table A.2.

	Mean	Median	Standard deviation
	(1)	(2)	(3)
Stock volatility and distress risk			
Stock volatility	0.611	0.499	0.436
Performance-related exit	0.019	0.000	0.137
Operating asset volatility	0.400	0.289	0.369
Cash flow volatility	0.084	0.048	0.123
Ln(Cash)	1.145	1.253	2.700
Acquisition volume			
# acquistions	0.163	0.000	0.679
Indicator for acquisition	0.103	0.000	0.304
Deal value / (Acquirer assets in t-1)	0.013	0.000	0.061
# of diversifying acquisitions	0.107	0.000	0.509
Target characteristics			
Correlation of stock returns	0.456	0.487	0.205
Altman z-score	5.380	2.964	7.861
Correlation of operating asset returns	0.448	0.459	0.214
Correlation of cash flow to assets	0.043	0.083	0.419
Ln(Cash)	4.658	4.818	2.004
3-year asset CAGR	0.170	0.079	0.392
Cash flow / assets	0.139	0.145	0.121
Payouts / assets	0.037	0.022	0.046
Acquisition characteristics			
Percent equity	59.05	78.59	42.72
Acquirer announcement CAR [-1,1] (%)	-4.948	-4.401	8.225

Appendix Table A.4

Distribution of medians used to split the sample

This table reports the distribution of sample medians used to split the sample in Tables 8-10 and 12. For each year that a BC law is adopted, we estimate the difference-in-differences for that event by splitting the sample using the median value of the unaffected and affected firms in the prior year. Because BC laws are adopted in 1997 and every year from 1985-1991, there are 8 separate medians used to split the sample for each of the matched difference-in-differences estimations reported in Tables 8-10 and 12.

	Cash flow / assets [Table 8]	**Leverage** [Tables 8 and 12]	**Stock volatility** [Table 9]	**Operating asset volatility** [Table 9]	**Cash flow volatility** [Table 9]	**Cash in $ millions** [Table 9]	**Inside ownership from Yermack data** [Tables 10 and 12]	**Inside ownership from TFN Insider Filing data** [Tables 10 and 12]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Median by sample year								
1984	0.099	0.226	0.380	0.211	0.063	0.673	0.0017	.
1985	0.097	0.241	0.401	0.225	0.069	0.565	0.0019	.
1986	0.084	0.246	0.449	0.263	0.070	0.585	0.0017	0.0136
1987	0.084	0.244	0.610	0.333	0.072	0.803	0.0019	0.0421
1988	0.089	0.253	0.469	0.255	0.071	1.714	0.0018	0.0373
1989	0.103	0.266	0.443	0.241	0.069	1.916	0.0018	0.0350
1990	0.110	0.257	0.552	0.269	0.066	2.003	0.0019	0.0387
1996	0.100	0.178	0.542	0.346	0.069	4.545	.	0.0553
Distribution of medians								
Mean	0.096	0.239	0.481	0.268	0.069	1.600	0.0018	0.0370
Median	0.098	0.245	0.459	0.259	0.069	1.259	0.0018	0.0380
Min	0.084	0.178	0.380	0.211	0.063	0.565	0.0017	0.0136
Max	0.110	0.266	0.610	0.346	0.072	4.545	0.0019	0.0553

Appendix Table A.5

Robustness of inside ownership to cutting on terciles

This table reports coefficients from firm-panel regressions of the number of acquisitions or the number of diversifying acquisitions on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm-by-cohort fixed effects, state of location-by-year-by-cohort fixed effects, and 4-digit SIC industry-by-year-by-cohort fixed effects. The data include firm-year-cohort observations in the 10 years before and 10 years after the adoption of each new BC law. Panel A restricts the sample to firms with inside ownership in the top tercile in the year before a BC law's adoption. Panel B restricts the sample to firms with inside ownership in the bottom tercile. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. **significant at the 5% level.

Dependent variable =	**Number of acquisitions**	**Number of diversifying acquisitions**
	(1)	(2)
Panel A. Firms with inside ownership in TOP tercile in year T-1		
BC law	0.012	0.037**
	(0.018)	(0.018)
N	68,505	68,505
R^2	0.67	0.67
Panel B. Firms with inside ownership in BOTTOM tercile in year T-1		
BC law	0.007	-0.033
	(0.028)	(0.029)
N	65,042	65,042
R^2	0.73	0.73
Firm-cohort FE	X	X
State-year-cohort FE	X	X
Industry-year-cohort FE	X	X
P-value of difference	0.835	0.014

Appendix Table A.6

Heterogeneity with respect to union representation

This table reports coefficients from firm-panel regressions of the number of acquisitions or the number of diversifying acquisitions on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm-by-cohort fixed effects, state-of-location-by-year-by-cohort fixed effects, and 4-digit SIC industry-by-year-by-cohort fixed effects. The data include firm-year-cohort observations in the 10 years before and 10 years after the adoption of each new BC law. Panel A restricts the sample to firms likely to have a greater union representation in the year prior to a BC law being adopted, as measured by being headquartered in a state without a right-to-work law [Columns (1) and (4)], being headquartered in a state with an above median level of share of employees covered by a collective bargaining agreement (see Hirsch, Macpherson, and Vroman (2001) [Columns (2) and (5)], or operating in a two-digit SIC industry with an above median share of employees covered by collective bargaining agreement (see Hirsh and Macpherson (2003)) [Columns (3) and (6)]. Panel B restricts the sample to firms headquartered in a state with a right-to-work law, firms headquartered in state with below median union coverage, and firms operating in a 2-digit SIC industry with below median union coverage. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. **significant at the 5% level.

Dependent variable =	**Number of acquisitions**			**Number of diversifying acquistions**		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Firms with MORE union representation in year T-1						
	No right-to-work law	**High state union coverage**	**High industry union coverage**	**No right-to-work law**	**High state union coverage**	**High industry union coverage**
BC law	0.025	0.015	0.020	0.013	0.008	0.010
	(0.017)	(0.019)	(0.020)	(0.012)	(0.016)	(0.017)
N	394,255	215,756	248,255	394,255	215,756	248,255
R^2	0.49	0.56	0.45	0.48	0.56	0.44
Panel B: Firms with LESS union representation in year T-1						
	Right-to-work law	**Low state union coverage**	**Low industry union coverage**	**Right-to-work law**	**Low state union coverage**	**Low industry union coverage**
BC law	0.020	0.027**	0.027**	0.016	0.015	0.017**
	(0.013)	(0.011)	(0.011)	(0.010)	(0.009)	(0.008)
N	150,957	329,456	243,373	150,957	329,456	243,373
R^2	0.57	0.49	0.51	0.57	0.47	0.51
Firm-cohort FE	X	X	X	X	X	X
State-year-cohort FE	X	X	X	X	X	X
Industry-year-cohort FE	X	X	X	X	X	X
P-value of difference	0.816	0.457	0.671	0.867	0.672	0.648

Appendix Table A.7

Heterogeneity with respect to debt concentration

This table reports coefficients from firm-panel regressions of the number of acquisitions or the number of diversifying acquisitions on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm-by-cohort fixed effects, state-of-location-by-year-by-cohort fixed effects, and 4-digit SIC industry-by-year-by-cohort fixed effects. The data include firm-year-cohort observations in the 10 years before and 10 years after the adoption of each new BC law. Panel A restricts the sample to firms with greater debt concentration in the year prior to a BC law being adopted, as measured by having an above median Herfindahl-Hirschman index (HHI) for firms' various long-term debt components, as reported in Compustat, [Columns (1) and (3)] or more than 90% of the firm's long-term debt coming from one type of debt [Columns (2) and (4)]. Panel B restricts the sample to firms with a below median debt HHI or firms where no one type of debt accounts for more than 90% of the firm's long-term debt. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses.

Dependent variable =	**Number of acqusitions**		**Number of diversifying acquisitions**	
	(1)	(2)	(3)	(4)
Panel A: Firms with MORE debt concentration in year T-1				
	High debt HHI	**One debt type > 90% of total**	**High debt HHI**	**One debt type > 90% of total**
BC law	0.011	0.012	0.004	0.004
	(0.009)	(0.009)	(0.008)	(0.008)
N	208,669	191,996	208,669	191,996
R^2	0.52	0.522	0.51	0.506
Panel B: Firms with LESS debt concentration in year T-1				
	Low debt HHI	**No debt type > 90% of total**	**Low debt HHI**	**No debt type > 90% of total**
BC law	0.030	0.037	0.015	0.022
	(0.027)	(0.025)	(0.022)	(0.021)
N	218,562	235,235	218,562	235,235
R^2	0.57	0.563	0.56	0.557
Firm-cohort FE	X	X	X	X
State-year-cohort FE	X	X	X	X
Industry-year-cohort FE	X	X	X	X
P-value of difference	0.502	0.323	0.642	0.421

Appendix Table A.8

Robustness of inside ownership to using only CEOs present in year *T*-1

This table reports coefficients from firm-panel regressions of the number of acquisitions or the number of diversifying acquisitions on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm-by-cohort fixed effects, state-of-location-by-year-by-cohort fixed effects, and 4-digit SIC industry-by-year-by-cohort fixed effects. The data include firm-year-cohort observations in the 10 years before and 10 years after the adoption of each new BC law. Panel A restricts the sample to firms with above median inside ownership in the year before a BC law's adoption. Panel B restricts the sample to firms with below median inside ownership. In both panels, the sample includes only observations for which a firm's CEO is the same as when the BC law was adopted. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ** significant at the 5% level.

Dependent variable =	**Number of acquisitions**	**Number of diversifying acquisitions**
	(1)	(2)
Panel A. Firms with ABOVE median inside ownership in year T-1		
BC law	0.093	0.161**
	(0.080)	(0.067)
N	29,391	29,391
R^2	0.83	0.82
Panel B. Firms with BELOW median inside ownership in year T-1		
BC law	-0.017	0.028
	(0.013)	(0.130)
N	66,730	66,730
R^2	0.73	0.70
Firm-cohort FE	X	X
State-year-cohort FE	X	X
Industry-year-cohort FE	X	X
P-value of difference	0.319	0.199

Appendix Table A.9

Robustness to excluding financial firms

This table reports coefficients from firm-panel regressions of stock volatility, performance-related exit, operating asset volatility, volatility of quarterly cash flow to assets, log cash holdings, and acquisition activity on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm fixed effects, state-of-location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The sample and estimation is the same as in Tables 2 and 3, except that financial firms (SIC = 6000-6999) are excluded. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Dependent Var. =	**Stock volatility**	**Performance-related exit**	**Operating asset volatility**	**Cash flow volatility**	**Ln(Cash)**	**Number of acquisitions**	**Any acquisition indicator**	**Deal value / (Acquirer assets in t-1)**	**Number of diversifying acquisitions**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BC law	-0.018*	-0.040***	-0.016**	-0.0022	0.123**	0.032**	0.011*	0.0021*	0.021**
	(0.009)	(0.013)	(0.007)	(0.0026)	(0.051)	(0.013)	(0.006)	(0.0011)	(0.010)
Firm FE	X	X	X	X	X	X	X	X	X
State-year FE	X	X	X	X	X	X	X	X	X
Industry-year FE	X	X	X	X	X	X	X	X	X
N	106,847	160,919	97,121	97,306	141,600	157,437	157,437	123,730	157,437
R^2	0.65	0.80	0.75	0.53	0.80	0.38	0.32	0.26	0.35

Appendix Table A.10

Robustness to stopping sample in 1995 and ignoring adoption of later BC laws

This table reports coefficients from firm-panel regressions of stock volatility, performance-related exit, operating asset volatility, volatility of quarterly cash flow to assets, log cash holdings, and acquisition activity on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm fixed effects, state-of-location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The sample and estimation is the same as in Tables 2 and 3, except that only firm-year observations from 1976 to 1995 are included. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Dependent var. =	**Stock volatility**	**Performance-related exit**	**Operating asset volatility**	**Cash flow volatility**	**Ln(Cash)**	**Number of acquisitions**	**Any acquisition indicator**	**Deal value / (Acquirer assets in t-1)**	**Number of diversifying acquisitions**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BC law	-0.019**	-0.040***	-0.009*	-0.0029	0.123***	0.019**	0.009**	0.0015*	0.012*
	(0.007)	(0.013)	(0.005)	(0.0032)	(0.045)	(0.009)	(0.004)	(0.0008)	(0.007)
Firm FE	X	X	X	X	X	X	X	X	X
State-year FE	X	X	X	X	X	X	X	X	X
Industry-year FE	X	X	X	X	X	X	X	X	X
N	72,685	111,116	61,668	52,283	92,890	109,447	109,447	84,599	109,447
R^2	0.64	0.25	0.78	0.55	0.85	0.42	0.32	0.31	0.39

Appendix Table A.11

Robustness to excluding firms that lobbied for BC laws' adoption, as identified in Karpoff and Wittry (2014)

This table reports coefficients from firm-panel regressions of stock volatility, performance-related exit, operating asset volatility, volatility of quarterly cash flow to assets (CF/A), log cash holdings, and acquisition activity on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm fixed effects, state-of-location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The sample and estimation is the same as in Tables 2 and 3, except that we exclude observations for firms that lobbied for the BC law's adoption, as listed in Table 3 of Karpoff and Wittry (2014). Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Dependent var.=	**Stock volatility**	**Performance-related exit**	**Operating asset volatility**	**Cash flow volatility**	**Ln(Cash)**	**Number of acquisitions**	**Any acquisition indicator**	**Deal value / (Acquirer assets in t-1)**	**Number of diversifying acquisitions**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BC law	-0.023***	-0.035***	-0.015**	-0.0029	0.122**	0.027**	0.009*	0.0016*	0.017**
	(0.008)	(0.011)	(0.006)	(0.0027)	(0.050)	(0.011)	(0.005)	(0.0008)	(0.008)
Firm FE	X	X	X	X	X	X	X	X	X
State-year FE	X	X	X	X	X	X	X	X	X
Industry-year FE	X	X	X	X	X	X	X	X	X
N	132,073	195,392	120,036	100,723	172,303	191,630	191,630	152,537	191,630
R^2	0.66	0.22	0.78	0.56	0.83	0.38	0.33	0.27	0.35

Appendix Table A.12

Robustness to only using CEOs present year prior to BC law adoption

This table reports coefficients from firm-panel regressions of stock volatility, performance-related exit, operating asset volatility, volatility of quarterly cash flow to assets, log cash holdings, and acquisition activity on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm fixed effects, state-of-location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The estimation is the same as in Tables 2 and 3, but the sample is restricted to observations for which a firm's CEO is the same as when the BC law was adopted. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Dependent var. =	**Stock volatility**	**Performance-related exit**	**Operating asset volatility**	**Cash flow volatility**	**Ln(Cash)**	**Number of acquisitions**	**Any acquisition indicator**	**Deal value / (Acquirer assets in t-1)**	**Number of diversifying acquisitions**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BC law	-0.115***	-0.095***	-0.033**	-0.0107**	0.502***	0.070***	0.029***	-0.0011	0.059***
	(0.026)	(0.021)	(0.013)	(0.0053)	(0.115)	(0.019)	(0.012)	(0.0028)	(0.015)
Firm FE	X	X	X	X	X	X	X	X	X
State-year FE	X	X	X	X	X	X	X	X	X
Industry-year FE	X	X	X	X	X	X	X	X	X
N	80,409	114,730	76,284	61,179	105,880	113,473	113,473	90,240	113,473
R^2	0.73	0.30	0.81	0.59	0.83	0.45	0.40	0.34	0.43

Appendix Table A.13

Robustness to being incorporated and located in the same state versus different states

This table reports coefficients from firm-panel regressions of stock volatility, performance-related exit, operating asset volatility, volatility of quarterly cash flow to assets, log cash holdings, and acquisition activity on interactions between an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law and indicators for being located and incorporated in the same state or not, firm fixed effects, state-of-location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The sample and estimation is the same as in Tables 2 and 3, except that the BC law indicator is now interacted with (1) an indicator for being incorporated in one's state of location and (2) an indicator for being incorporated in a different state. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Dependent variable =	**Stock volatility**	**Perf.-related exit**	**Operating asset volatility**	**Cash flow volatility**	**Ln(Cash)**	**Number of acq.**	**Any acq. ind.**	**Deal val. / (Acq. assets in t-1)**	**Number of div. acq.**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BC law × Located in same state	-0.029***	-0.035***	-0.005	-0.0072*	0.174***	0.031**	0.013*	0.0014	0.013
	(0.009)	(0.010)	(0.008)	(0.0041)	(0.050)	(0.013)	(0.007)	(0.0013)	(0.010)
BC law × Located in different state	-0.021***	-0.035***	-0.020***	-0.0009	0.097*	0.026**	0.008*	0.0018**	0.019**
	(0.008)	(0.012)	(0.006)	(0.0023)	(0.050)	(0.011)	(0.005)	(0.0008)	(0.008)
Firm FE	X	X	X	X	X	X	X	X	X
State-year FE	X	X	X	X	X	X	X	X	X
Industry-year FE	X	X	X	X	X	X	X	X	X
N	132,494	195,895	120,401	100,893	172,739	192,133	192,133	152,970	192,133
R^2	0.66	0.22	0.72	0.56	0.83	0.38	0.33	0.27	0.35

Appendix Table A.14

Robustness to other legal changes and court rulings, as identified in Karpoff and Wittry (2014)

This table reports coefficients from firm-panel regressions of stock volatility, performance-related exit, operating asset volatility, volatility of quarterly cash flow to assets, log cash holdings, and acquisition activity on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm fixed effects, state-of-location-by-year fixed effects, 4-digit SIC industry-by-year fixed effects, and additional controls for other anti-takeover laws and court rulings. All independent variables are defined as in Karpoff and Wittry (2014). The sample and estimation is the same as in Tables 2 and 3, except for the additional control variables. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Dependent variable =	**Stock volatility**	**Performance-related exit**	**Operating asset volatility**	**Cash flow volatility**	**Ln(Cash)**	**Number of acquisitions**	**Any acquisition indicator**	**Deal val. / (Acq. assets in t-1)**	**Number of diversifying acquisitions**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BC law	-0.018*	-0.036**	-0.004	-0.0074*	0.105**	0.025*	0.012**	0.0011	0.025**
	(0.009)	(0.018)	(0.006)	(0.0040)	(0.043)	(0.014)	(0.005)	(0.0013)	(0.010)
Controls for first-generation, poison pill, control share acquisition, directors' duties, and fair price laws	X	X	X	X	X	X	X	X	X
Controls for *MITE*, *CTS*, *Amanda*, and *Unitrin* court decisions	X	X	X	X	X	X	X	X	X
Controls for first-generation law × *MITE*, Control share acquisition law × *CTS*, Business combination law × *Amanda*, Poison pill law × *Unitrin*	X	X	X	X	X	X	X	X	X
Firm FE	X	X	X	X	X	X	X	X	X
State-year FE	X	X	X	X	X	X	X	X	X
Industry-year FE	X	X	X	X	X	X	X	X	X
N	132,484	195,878	120,391	100,893	172,722	192,116	192,116	152,961	192,116
R^2	0.66	0.22	0.78	0.53	0.83	0.38	0.33	0.27	0.35

Appendix Table A.15

Robustness to excluding firms incorporated in Delaware

This table reports coefficients from firm-panel regressions of stock volatility, performance-related exit, operating asset volatility, volatility of quarterly cash flow to assets, log cash holdings, and acquisition activity on an indicator for whether a firm's state of incorporation has adopted a business combination (BC) law, firm fixed effects, state-of-location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The sample and estimation is the same as in Tables 2 and 3, except that firms incorporated in Delaware are excluded. Standard errors, which are adjusted for clustering at the state-of-incorporation level, are reported in parentheses. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Dependent Var. =	**Stock volatility**	**Performance-related exit**	**Operating asset volatility**	**Cash flow volatility**	**Ln(Cash)**	**Number of acquisitions**	**Any acquisition indicator**	**Deal value / (Acquirer assets in t-1)**	**Number of diversifying acquisitions**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
BC law	-0.024	-0.024***	-0.013	-0.0097*	0.225***	0.046***	0.020**	0.0016	0.038***
	(0.018)	(0.006)	(0.013)	(0.0055)	(0.081)	(0.017)	(0.008)	(0.0012)	(0.011)
Firm FE	X	X	X	X	X	X	X	X	X
State-year FE	X	X	X	X	X	X	X	X	X
Industry-year FE	X	X	X	X	X	X	X	X	X
N	64,652	99,288	58,477	46,916	85,478	95,526	95,526	76,351	95,526
R^2	0.71	0.64	0.81	0.62	0.85	0.49	0.40	0.35	0.48