

# Playing it Safe? Managerial Preferences, Risk, and Agency Conflicts<sup>\*</sup>

Todd A. Gormley<sup>†</sup> and David A. Matsa<sup>‡</sup>

June 6, 2014

## Abstract

This paper examines risk-averse managers' incentive to "play it safe" by taking value-destroying actions that reduce their firms' risk of distress. We find that, after managers are insulated by the passage of an antitakeover law, firms increase diversifying acquisitions by about a third relative to firms that operate in the same state and industry but are not affected by the law. These acquisitions target "cash cows," are funded largely with equity, and are concentrated among firms with a greater risk of distress. Consistent with a reduction firm-level risk, we also find that affected firms' stock volatility decreases and their cash holdings increase. Our findings suggest that shareholders face governance challenges beyond motivating managerial effort.

(*JEL* D22, D81, G32, G34, K22)

**Keywords:** risk aversion, managerial preferences, agency conflicts

---

<sup>\*</sup> For helpful comments, we thank seminar participants at Pennsylvania State University Harrisburg, University of Melbourne, University of New South Wales, University of Pennsylvania (Wharton), University of Sydney, University of Technology Sydney, and University of Virginia (Darden),. Matthew Denes and Christine Dobridge provided research assistance. Gormley thanks the Rodney L. White Center for Financial Research Brandywine Global Investment Management Research Fellowship for financial support.

<sup>†</sup> 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

<sup>‡</sup> 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

Managers of publicly held corporations do not always act in the best interests of their shareholders. Agency theories of the firm tend to focus on three aspects of managerial preferences causing these conflicts: private benefits, costly effort, and risk aversion. 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 might exert less effort than what shareholders desire, so as to “enjoy the quiet life” (Holmström, 1979; Grossman and Hart, 1983; Bertrand and Mullainathan, 2003). Whereas existing empirical studies mostly focus on these two agency conflicts, this paper aims to shed light on the third: a risk-averse manager has the incentive to take on less risk than desired by a diversified shareholder or may 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, both financially and in terms of reputation and future career prospects. Although managerial risk aversion is pervasive in agency theory, the empirical importance of risk-related conflicts is less clear. This paper examines the empirical relevance of such conflicts.

Agency conflicts arising from managers’ risk aversion have implications for both economic outcomes and optimal corporate policy. Taking on risk is almost always a prerequisite for creating shareholder value, so failing to take risks can hamper long-term economic growth.<sup>1</sup> Managerial risk aversion also implies that agency problems might also play out differently in normal times than when times are tough. Although managers may exert too little effort in normal times, they may be overly active

---

<sup>1</sup> For example, observers have argued that an increasingly risk-averse culture among U.S. workers, entrepreneurs, and firms contributes to the long-term slowing of the U.S. economy (Casselman, 2013).

in trying to reduce risk in periods of distress. The corporate policies and compensation structures that maximize shareholder value are also quite different if risk-aversion, rather than costly effort, is a fundamental driver of managerial preferences. For example, while increasing firm leverage can induce a manager to exert greater effort (Jensen, 1986), it can amplify conflicts arising from managers' risk aversion by increasing the firm's (and manager's) exposure to risk. Likewise, an increase in a manager's ownership stake might exacerbate, rather than reduce, agency conflicts because the ownership interest increases a manager's incentive to reduce the firm's risk.

To assess the importance of agency conflicts arising from managers' risk aversion, we exploit state anti-takeover laws in the United States as a source of variation in external shareholder governance. During 1980s, many states passed "business combination" (BC) laws that made it more difficult to complete a hostile takeover of firms incorporated in the state. 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, BC laws weaken external shareholder governance and increase the scope for managerial agency conflicts. To examine the importance of motives to play it safe, we exploit the BC laws' staggered adoption across states and employ a difference-in-difference 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 heterogeneity across firms and time-varying, unobserved heterogeneity across industries; and because many firms are incorporated in a different state than they are located, we are able to further control for unobserved time-varying, state-level economic conditions in our analysis.

We find that firms reduce their risk when the threat of a hostile takeover declines. Relative to firms headquartered in the same state and operating in the same 4-digit SIC industry, stock volatility declines by 2.3 percentage points, on average, after passage of a BC law for firms incorporated in that state. This corresponds to a roughly 5 percent drop in firms' volatility. We also find that affected firms

increase their holdings of cash; average cash holdings increase by 13 percent after a BC law is adopted, and firms' cash to asset ratio increases by about 10 percent.

Although these results imply that agency costs lead managers to reduce their firms' risk, it does not clarify the source of this conflict. In principle, the results may reflect either managers' risk aversion or their reluctance to exert effort. Managers' risk aversion could be motivating them to play it safe and work explicitly to reduce their firms' risk. Alternatively, a reluctance to exert costly managerial effort could lead to fewer risky investments, which could inflate a firm's cash holdings and reduce stock volatility. To investigate the nature of the relevant agency conflict, we analyze firms' acquisition activity. We focus on acquisitions for two reasons. First, prior evidence suggests that managers use diversifying acquisitions as a way to reduce their firms' risk (Amihud and Lev, 1981; Gormley and Matsa, 2011). Second, any observed increase in acquisitions would be inconsistent with managers simply exerting less effort when governance is weakened.<sup>2</sup>

Consistent with managers exerting more effort to reduce their firms' risk, we find that firms sharply increase their diversifying acquisitions. Firms affected by the reduced threat of a takeover are, on average, 15 percent more likely to undertake an acquisition after the law is passed relative to unaffected firms operating in the same 4-digit SIC industry and state. The timing of this increase coincides with the passage of a BC law; there is no evidence of a pre-existing differential trend in acquisitions. The average cumulative abnormal return (CAR) associated with acquisitions undertaken by firms after a BC law's adoption is -1.26 percent, about two-thirds of the increased acquisitions are diversifying acquisitions, and the acquisitions are largely funded with equity rather than cash. After a BC law is adopted, the types of firms' targeted by acquisitions also changes; affected firms are more likely to acquire "cash cows"—large firms with significant cash flow and payouts.

To distinguish between playing it safe and empire building motives for the increase in

---

<sup>2</sup> 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.

diversifying acquisitions, we analyze the differential response of firms based on their ex-ante leverage and cash flow. If the acquisitions are driven by empire building motives, we would expect the increase in acquisitions to be more prominent among firms with high cash flow and low leverage such that the manager has a larger amount of free cash flow at his or her disposal (Jensen, 1986). On the other hand, if the increase in acquisitions is driven by risk-reducing motives, then we would expect the increase in acquisitions to be concentrated among firms at a greater risk of distress, including firms with low cash flow and high leverage. To test for this heterogeneity, we use the matching difference-in-difference estimator from Gormley and Matsa (2011) to compare estimates across subsamples.

Consistent with managers playing it safe, the increase in diversifying acquisitions are concentrated among firms at greater risk of distress and lower cash flow prior to the passage of the BC law. Affected firms with an above median leverage immediately prior to the BC law are 1.5 percentage points more likely to undertake an acquisition after a BC law is adopted relative to non-affected firms with similar leverage levels. We find no increase in the likelihood or number of acquisitions by firms with a below median leverage. We find a similar result when cutting the sample on another measure of firms' bankruptcy risk—the Altman z-score. The increase in acquisitions is also concentrated among firms with a below median ratio of cash flow to assets before the law is adopted. The average firm with below median cash flow undertakes about 25 percent more diversifying acquisitions after a BC law is adopted, while there is no change in the number of diversifying acquisitions by affected firms with above median cash flow. The results are similar when we use the payment of dividends as a proxy for a firm having greater cash flow and less distress risk.

Overall, our evidence suggests that avoiding empire building and motivating managerial effort are not the only challenges shareholders face. While prior research has found evidence that weakened governance is associated with managers exerting less effort and enjoying the quiet life (Bertrand and Mullainathan, 2003), we show that, for many firms, weakened governance leads managers to play it safe

by actively working to reduce their firms' risks.<sup>3</sup> We complement the existing literature by showing that various aspects of managerial preferences manifest when governance is weakened and that the most salient aspect varies across firms.

The multiplicity of managerial agency conflicts implies that there are tradeoffs in the how leverage and managerial ownership affect agency conflicts within the firm. For example, increasing a manager's ownership stake does not necessarily better align their interests with those of diversified shareholders. Although the ownership stake induces greater effort, it also increases a risk-averse manager's incentive to make value-destroying decisions that reduce the firm's risk. This tradeoff is overlooked in empirical studies that rely on managers' ownership stake as a proxy for the extent of agency conflicts between managers and shareholders.

Our paper builds upon the small, but growing, literature on how managers' exposure to risk can affect how they manage their firms. In a seminal paper, Chevalier and Ellison (1999) show that career concerns and the fear of termination affect mutual fund managers' portfolio choices. Kempf, Reunzi, and Thiele (2009) find further evidence of career concerns in the mutual fund industry. We apply the same idea of career concerns and fear of termination to corporate leadership. In that regard, our findings are related to those of Tufano (1996, 1998), Low (2010), Acharya, Amihud, and Litov (2011), Gormley and Matsa (2011), Kim and Lu (2011), and Panousi and Papanikolaou (2012). We build on this literature by showing how managers' preference to reduce risk can manifest in specific corporate policies when governance is weakened and how the importance of this agency conflict varies across firms.

Our paper also builds on the literature studying the importance of BC and other anti-takeover laws. Although papers have found evidence of firms and managers reducing their exposure to risk

---

<sup>3</sup> In practice, the difference between the "quiet life" and "playing it safe" conflicts can be difficult to distinguish in reduced form estimations and the theories are interrelated. For example, for some managers, the ultimate motive of playing it safe could be to achieve a quiet life of less managerial effort. Furthermore, playing it safe might not entail much effort at all if it simply entails foregoing risky investments. The key distinction between what we observe and what has been shown previously, however, is that some managers do not simply exert less effort when governance is weakened, and that these increased efforts appear to be driven by managers' exposure to the firm's risk.

following the passage of a BC law,<sup>4</sup> 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 an agency conflict arising from managers' risk aversion. 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), Kose, Li, and Pang (2010), and Atanassov (2013), which find that the severity of agency conflicts arising from costly effort are likely to be more severe for firms in less competitive industries, firms with greater cash flow, and less leverage. In contrast, we show that another agency conflict, the conflict arising from managers' risk aversion, is more severe for firms with *lower* free cash flow and *greater* leverage.

Finally, our paper illustrates the importance of properly accounting for unobserved heterogeneity and of avoiding bad 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 "bad" controls (Angrist and Pischke, 2009). Our difference-in-difference estimations control for firm, industry-year, and state-year unobserved heterogeneities using fixed effects (instead of an AvgE estimator)<sup>5</sup> and exclude time-varying controls that could be affected by the passage of the BC law and thus introduce a selection bias. Given the frequent use of AvgE estimators and endogenous controls in the finance and accounting literature, our findings serve as a warning of how these flawed approaches can confound researchers' inferences.

The remainder of this paper is organized as follows. Section 1 describes our identification strategy and data. Section 2 describes our findings, while Section 3 provides interpretation and additional

---

<sup>4</sup> For example, Garvey and Hanka (1999) find that firms reduce their leverage; Cheng, Nagar, and Rajan (2004) find that managers reduce their ownership stakes; 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.

<sup>5</sup> Even though BC laws are passed at the state level, we are able to include state-year fixed effects because many firms are located and incorporated in different states. Whether a firm is affected by the BC law passage is function of where the firm is incorporated; not where it is located. This lack of overlap in state of operations and incorporation for many firms allows us to control for time-varying, state-level economic conditions.

evidence regarding the heterogeneity in responses. Section 4 concludes.

## **1. Empirical framework**

In the cross-section, weaker shareholder governance is correlated with reduced risk-taking by firms. 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. Using data from all years in which the Gompers, Ishii, and Metrick index is available, averages of the various measures of firms' risk-taking are plotted for each governance index score with at least 50 observations, and the reported regression line is weighted based on the number of underlying observations. The figure shows that weaker shareholder governance (i.e., a higher governance index score) is associated with lower stock volatility, lower cash flow volatility, more cash holdings, and more diversifying acquisitions. The magnitudes of these correlations are sizable. Relative to the sample average, a one standard deviation decrease in shareholder governance is associated with a 9 percent decline in stock volatility ( $t$ -stat = 12.3, adjusted for clustering at the firm level), a 10 percent reduction in cash flow volatility ( $t$ -stat = 4.5), a 13 percent increase in cash holdings ( $t$ -stat = 3.9), and a 9 percent increase in diversifying acquisitions ( $t$ -stat = 2.4). These cross-sectional correlations are consistent with managers playing it safe when external governance is weaker.

These statistical relations between shareholder governance and firms' riskiness, however, might not reflect a causal relation. 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 the firm risk. Failure to control for all of these factors could introduce an omitted variable bias that confounds the cross-sectional relations. Simultaneity bias could also distort these relations, as a firm's governance and risk are likely jointly determined; for example, firms that operate in riskier environments might elicit stronger shareholder governance, all else equal.

### *1.1. 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. Takeovers and the market for corporate control discipline managers because value-destroying activities 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) find that the initial press announcement of antitakeover legislation in a state is associated with a negative stock price reaction for affected firms.<sup>6</sup>

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 passed by 30 states between 1985 and 1991; the list and timing can be found in Appendix Table A.1. These laws, which were upheld by the Supreme Court in 1987 (*CTS v. Dynamics Corp.*), were viewed as the most stringent antitakeover laws passed at the time (Bertrand and Mullainathan, 2003).<sup>7</sup> While the laws' particular provisions varied by state, BC laws typically prevent a wide range of business combination transactions—including the sale of assets, 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 becoming an interested shareholder (which is typically defined as owning more than 10-20 percent of the target). These state laws applied only to target firms incorporated in the state and are thought to have

---

<sup>6</sup> Although in theory takeover threats could foster “managerial myopia” by discouraging profitable long-term 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 (Karpoff and Malatesta, 1989), the laws are associated with reduced total factor productivity (Bertrand and Mullainathan, 2003). Furthermore, the investments focused on in our analysis—whole-firm acquisitions—are subject to robust public scrutiny and debate, unlike the actions typically focused on in theories of managerial myopia, such as the sales of individual assets and long-term capital investments (Auletta, 1986).

<sup>7</sup> In addition to BC laws, other antitakeover laws passed at the time included fair price (FP) laws and control share (CS) laws. FP laws regulated the price of takeover bids and other significant business combinations, while CS laws required that target shareholders preapprove any acquisition of voting rights above a certain level. For detailed discussions of these laws, see Romano (1987), Karpoff and Malatesta (1989), and Bertrand and Mullainathan (2003). Following the prior literature, we focus on BC laws in our analysis because they were viewed by many as being the most stringent of the new state-level, antitakeover laws (Bertrand and Mullainathan, 2003).

significantly reduced the threat of a hostile takeover in those states.<sup>8</sup>

Romano (1987) and Bertrand and Mullainathan (2003) analyze the political economy of the BC laws' passage and find that the passage of these laws typically did *not* result from the pressures of a large coalition of economic players in the state. Given the lack of broad-based lobbying, these authors 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 any 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. Finally, we also examine the timing of the effects, and find that law precedes the effects we assign to it rather than the other way around. For these reasons, political economy or business cycle factors are unlikely to explain our results.

### *1.2. Empirical specification*

We exploit the staggered adoption of BC laws across U.S. states to evaluate the importance of playing it safe motives in managerial preferences. 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:

$$y_{ijlst} = \beta_1 BC_{st} + f_i + \omega_{lt} + \lambda_{jt} + \eta_{ijlst}, \quad (1)$$

where  $y$  is the outcome of interest for firm  $i$ , in industry  $j$ , located in state  $l$ , incorporated in state  $s$ , in year

---

<sup>8</sup> Consistent with this, Comment and Schwert (1995) find evidence that passage of a BC law is associated with an increase in takeover premiums paid to targets. While Comment and Schwert (1995) do not find evidence of a decline in the likelihood of a takeover, Garvey and Hanka (1999) note that this can occur in equilibrium even when BC laws reduce the takeover threat. By reducing the takeover threat, BC laws will increase managers' ability to engage in value-destroying behavior, which has an offsetting effect of increasing the gains to doing a hostile acquisition. Consistent with this argument, Giroud and Mueller (2010) find evidence that the likelihood of a takeover does decline in more competitive industries, where this offsetting effect is argued to be smaller.

$t$ ;  $BC$  is an indicator that equals 1 if state  $s$  has passed a BC law by year  $t$ ;  $f_i$  are firm fixed effects;  $\omega_{it}$  are state-year fixed effects; and  $\lambda_{jt}$  are 4-digit SIC industry-year fixed effects. We include the firm fixed effects to control for unobserved, time-invariant heterogeneity across firms; state-year fixed effects to control for unobserved, time-varying heterogeneities across states; and industry-year fixed effects to control for unobserved, time-varying heterogeneities across industries. The inclusion of these fixed effects ensures that our difference-in-difference estimates are robust to many types of unobservable omitted variables that might otherwise confound our analysis (Gormley and Matsa, 2014). Finally, we adjust the standard errors for clustering at the state of incorporation,  $s$ , level.

Our difference-in-difference estimate,  $\beta_l$ , is identified using within-state-year and within-industry-year variation that relaxes the parallel trends assumption underlying our estimation. We are able to obtain estimates for the BC laws' effects even after including state-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-year fixed effects further mitigates identification concerns. With their inclusion, our findings are robust to any potential variation in the composition of industries across states or differential trends across industries over time.

Our analysis also takes advantage of the staggered entry of BC laws across states. Each new passage of a BC law provides another comparison of the differential response of treated firms, and firms affected by later events are allowed to act as controls for earlier events further improving the internal validity of our identification strategy.

Our estimation strategy differs from previous analyses of BC laws in two ways. First, to account for state- and industry-specific trends, existing studies control for state-year and industry-year averages of the dependent variables in their regression specifications. Gormley and Matsa (2014) refer to this empirical approach as an Average Effects (AvgE) estimator. Second, the estimation is further augmented

to include a vector of time-varying controls,  $\mathbf{X}_{ijlstr}$ , thought to affect the outcome of interest.

That approach, however, is biased. First, the industry-year and state-year controls measure the unobserved heterogeneities with error, and this measurement error introduces a bias that confounds inferences (Gormley and Matsa, 2014).<sup>9</sup> Second, the inclusion of time-varying controls,  $\mathbf{X}$ , into the difference-in-difference estimation can also introduce a bias if any of these controls are affected by passage of the BC law. Angrist and Pischke (2009) refer to such endogenous variables as “bad controls.” 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 acquisition activity, it will also affect firm size. Therefore, inclusion of firm size as a control can introduce a bias. Our estimation avoids these biases by estimating fixed effects instead of average effects and by excluding endogenous controls.

### *1.3. Sample, data sources, and descriptive statistics*

We study firms’ financial data from Compustat over the period from 1976 to 2000, 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. The BC law changes occurred between 1985 and 1991, so we selected our sample period to include at least 10 years of data both before and after the laws’ adoption. Although this sample period is slightly longer than the 1976–1995 time period examined by Bertrand and Mullainathan (2003), our findings are robust to using the shorter time frame. Our data on acquisitions are from the Securities Data Company’s (SDC) U.S. Mergers and Acquisitions Database, which begins in 1980.

BC laws affect firms based on their state of incorporation at the time. Compustat, however, only reports firms’ most recent state of incorporation and state of location, which we use as a control variable. Thus, firms that changed their state of incorporation or location anytime in the three decades since the law

---

<sup>9</sup> Computational difficulties are a likely explanation for why the earliest papers in this literature failed to use fixed effects. For example, Bertrand and Mullainathan (2003, p. 1057) note that they rely on an average effects estimation because the inclusion of so many fixed effects is computationally infeasible. We overcome this difficulty of estimating a model with multiple, high-dimensional fixed effects using the iterative procedures described in Guimarães and Portugal (2010) and Gormley and Matsa (2014). As discussed later, we find that properly controlling for fixed effects can be quite important for inferences.

was passed would be assigned to an incorrect state.<sup>10</sup> To mitigate this concern, we obtain information about firms' states of incorporation and location from SEC Analytics, which contains historical information back to 1994. For observations prior to 1994, we use the earliest incorporation and location information available for each firm. In cases where information is missing from SEC Analytics, such as for firms that stopped filing prior to 1994, we use the legacy version of Compustat to obtain this information. Because the legacy version of Compustat has not been updated since 2006, its information on states of incorporation and location are more likely to be historically accurate than the most recent version of Compustat.<sup>11</sup>

Firms in states adopting BC laws appear similar to firms in other states. Table 1 reports firms' average characteristics (and standard errors) in the three years before the laws were adopted; statistics in Column (1) correspond to firms incorporated in a state adopting a BC law, and statistics in Column (2) correspond to firms incorporated in states not adopting a BC law. The  $p$ -value  $t$ -tests for statistical differences between the two samples are reported in Column (3). Firms are similar in terms of their acquisitions, return on assets (ROA), cash/assets, and growth. We also find no statistically significant differences in their average risk, as measured by either stock volatility or the volatility of ROA. In unreported estimates, we also find no difference in firms' average leverage or modified Altman- $z$  score. The only significant difference we find is that firms incorporated in states adopting a BC law tended to be larger than firms incorporated elsewhere ( $p$ -value = 0.064).

---

<sup>10</sup> This concern is greater today than for studies that used earlier versions of Compustat. For example, Bertrand and Mullainathan (2003) spot checked 200 firms in the 1995 version of Compustat and found only 3 firms that had changed their state of incorporation between 1985 (when the first BC law was passed) and 1995. In fact, none of these three firms had been misclassified because the changes had occurred prior to the BC laws' adoption. This measurement error has increased over time, however, as researchers continue to use increasingly outdated information on firms' states of incorporation and location. A notable exception is Rauh (2006), who collected historical information on firms' states of incorporation.

<sup>11</sup> It turns out that our choice of data here does not have a significant impact on our subsequent estimates. Our findings remain the same if, similar to other researchers, we instead ignore the measurement concern and just use the most recent version of Compustat to obtain firms' locations and states of incorporation. The lack of a significant change likely reflects that only a small fraction of firms are being misclassified because of past changes in firms' locations. Relative to the most recent version of Compustat, using SEC Analytics and Compustat Legacy changes the state of incorporation for about 5% of observations and changes treatment status for 1.9% of observations.

## 2. How takeover threats affect stock and cash flow volatilities, cash holdings, and acquisitions

Does managers' underlying preference to play it safe affect corporate decisions? In the absence of strong external shareholder governance, is some managerial effort directed toward value-destroying activities designed to reduce firms' risk of distress? In this section, we investigate these questions by examining how various measures of firms' risk-taking change when external shareholder governance is weakened, as captured by the passage of a BC law.

### 2.1. Stock volatility, cash flow volatility, and cash holdings

To investigate whether BC laws are associated with firm risk, we analyze the laws' impact on firm's stock volatility, cash flow volatility, and cash holdings. A firm's stock volatility provides a measure of the firm's riskiness and captures any corporate choices made to reduce the firm's risk. We calculate firms' stock volatility from CRSP using the square root of firms' sum squared daily returns over the year. We calculate the volatility of firms' operating cash flow using the standard deviation of firms' quarterly ROA. Detailed definitions of our variables can be found in Appendix Table A.2, and estimates of the laws' effects on stock and cash flow volatilities are reported in Table 2.

We find that firms' stock volatility decreases after a BC law is adopted. As reported in Column (1) of Table 2, stock volatility declines by about 2.3 percentage points, on average, for firms affected by a BC law relative to firms located in the same state and firms operating in the same industry that are unaffected by the change. This drop in stock volatility corresponds to about 5% of the sample mean and 7.5% of the sample standard deviation. Cash flow volatility may also decrease: the point estimate, reported in Column (2), indicates a decrease but is estimated imprecisely and not statistically significant at conventional confidence levels.<sup>12</sup>

We also analyze firms' holdings of cash. A manager who wishes to reduce the firms' risk of distress might accumulate a greater cash buffer so as to reduce the likelihood of becoming distressed in

---

<sup>12</sup> The decline in stock volatility is not due to a reduction in leverage. We find no evidence that passage of a BC law is associated with a significant drop in firms' market leverage (coefficient =  $-0.001$ , standard error =  $0.003$ ). The small, insignificant decline may reflect a downward rigidity in leverage, as found in Heider and Ljungqvist (2013).

the future. Consistent with this, we find that firms increase their cash holdings after a BC law is adopted. On average, firms' total cash holdings increase by about 12.3 log points, or 13 percentage points [Column (3)]. The increase is statistically significant at the one percent confidence level. Firms' cash balances increase not only in absolute terms but also relative to their size, as firms' ratio of cash to assets also increases. Relative to the sample mean (reported in Table 1), the ratio of cash to assets increases by about 10 percent [Column (4)].

## 2.2. *Acquisitions*

While the decline in stock volatility and increase in cash holdings 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 taking on risky R&D expenditures because these investments would entail costly effort, we might observe a decrease in firms' risk and an increase in cash holdings.

To differentiate between costly effort and managerial risk aversion as potential explanations 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 substantial 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). Because initiating and completing an acquisition requires significant managerial time and effort, one could safely conclude that an observed increase does *not* stem from managers' reluctance to exert effort. 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 are 1.1 percentage points more likely to undertake an acquisition than before the law, relative to other firms operating in the same industry and firms operating in the same state [Table 3, Column (1)]. This increase is economically large, averaging about 15 percent

of the pre-law level, and is statistically significant at the 1 percent level. The increase in the number of acquisitions is even larger: firms undertake one-third more acquisitions (0.031 more acquisitions per year relative to the baseline level of 0.094) when the firm is protected from takeovers by a BC law. The observed change in total deal value normalized by lagged market capitalization is also positive, but not statistically significant. Because many acquisitions reported by SDC do not include the value of the target firm, the number of observations in the deal value estimation is significantly lower and the estimates are less reliable. For this reason, our preferred specifications examine the likelihood and number of acquisitions. In later findings, however, we do find the change in deal value is statistically significant in subsamples where we expect the results to be greatest.

The timing of the increase in acquisitions coincides with the adoption of the BC laws. Figure 2 plots point estimates from a modified version of Equation (1), where we allow the effect of *BC* to vary by year in the years before and after a BC law is passed. There is no indication of an increase in acquisitions before the BC laws take effect, but afterwards, firms incorporated in the state tend to increase their acquisitions relative to firms operating in the same industry and firms operating in the same state but that are incorporated elsewhere. The precise timing of this change suggests that the additional acquisitions are in fact caused by the reduced takeover threat.

Many of the additional acquisitions are diversifying in nature. For 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. 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 0.02 more diversifying acquisitions annually ( $p < 0.01$ ). This increase represents a jump of about 33 percent relative to the average number of diversifying acquisitions before the law was adopted. Compared to the coefficient for the total number of acquisitions [Column (2)], we can see that almost 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 contribute to the drop in firms’ stock volatility documented above.

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.<sup>13</sup> We examine characteristics of the target firms based on their most recent financial data available in Compustat before the acquisition announcement using the following regression:

$$y_{ijlst} = \beta_2 BC_{st} + \alpha_j + \theta_t + \delta_l + v_{ijlst}, \quad (2)$$

where  $y$  is an ex ante characteristic of target firm  $i$ , for an acquisition done by a firm located in industry  $j$ , operating in state  $l$ , incorporated in state  $s$ , and announced in year  $t$ . We examine the following target characteristics as dependent variables: log total assets, three-year compounded annual growth rate for assets, the ratio of cash flow to assets, and the ratio of the total payout to assets.<sup>14</sup>  $BC$  is defined as in Equation (1). We include industry, state of location, and year fixed effects, and we adjust the standard errors for clustering at the state of incorporation level. The estimates are reported in Table 4.

Following adoption of a BC law, firms are more likely to acquire cash cows—large, high cash flow, high payout firms. As reported in Table 4, the acquired firms are larger and have greater historical growth rates. Targets acquired by firms incorporated in a BC law state are more than 40 percent larger, on average, than targets acquired by firms incorporated in other states [Column (1)]. Their growth rate in the five years before being acquired is 17.1 percentage points greater, on average, than for targets acquired by unaffected firms [Column (2)]. Affected firms also tend to acquire targets that generate and pay out

---

<sup>13</sup> We match the firms in SDC Platinum to Compustat using their CUSIPs. Unfortunately, historical CUSIPs are not available in Compustat, so 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.

<sup>14</sup> Except for the regression of log total assets, 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 on characteristics associated with the average dollar of transaction value (rather than the average deal). For example, the regression of the ratio of cash flows to assets examines whether the ratio of the total cash flows across all acquired targets to the total assets acquired increases after liability risk increases.

greater cash flow per dollar of total assets. Targets acquired by affected firms average 11.3 percentage points greater ratios of operating cash flow to assets [Column (3)], and 1.47 percentage points greater ratios of total payouts to assets [Column (4)]. These findings suggest that firms may be seeking to acquire so-called cash cows after the threat of a takeover decreases. These results may also explain some or all of the increase in cash holdings among firms after a BC law is passed.

The acquisitions are largely funded with equity, and investors appear to perceive the announcements of these mergers as bad news for the firms' shareholders. Of the acquisitions analyzed in Table 4, the average abnormal return over a three-day window  $[-1, +1]$  for acquisitions by firms incorporated in a state that has passed a BC law is  $-1.26\%$  (standard error is 0.23).<sup>15</sup> And, the average share of financing using stock is 57.72 percent (standard error is 1.32), which is about 30 percentage points higher than that of acquisitions done by firm not incorporated in BC states.

### 2.3. Why our findings differ

The observed increase in acquisitions stands in contrast to some prior research on BC laws and their impact on firms. Prior research has failed to detect any increase in acquisitions, and this has typically led researchers to conclude, similar to that of Bertrand and Mullainathan (2003), that empire building motives are not a primary driver of managerial preferences.<sup>16</sup> For example, Giroud and Mueller (2010) explicitly test for an increase in the likelihood of undertaking an acquisition and find none. The question thus arises: why do we detect such a large increase in acquisitions whereas prior papers do not?

To determine why our findings differ from that of the prior literature, we first estimate the standard AvgE specification used in the prior literature, which is given by

$$y_{ijl_{st}} = \phi_1 BC_{st} + \phi_2 state-year_{lt} + \phi_3 industry-year_{jt} + f_i + \delta_t + \Gamma \mathbf{X}_{ijl_{st}} + u_{ijl_{st}}, \quad (3)$$

where  $y$  is a dependent variable,  $BC$  is defined as before,  $state-year$  is the average  $y$  for firms in state  $l$  in

---

<sup>15</sup> To estimate abnormal returns, we use standard event study methods (see MacKinlay 1997) and compute market model abnormal returns using CRSP equally weighted index returns. The parameters for the market model are estimated over the  $[-300, -46]$  day interval.

<sup>16</sup> In many regards, our findings confirm the relative importance empire building motives. While we cannot rule out that some of the additional acquisitions are driven by empire building, our later evidence suggests that the increase in acquisitions is more consistent with playing it safe motives than empire building motives.

year  $t$ , and *industry-year* 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 log of assets), 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. The use of *state-year* and *industry-year* to control for unobserved heterogeneity, rather than state-year and industry-year fixed effects, is what makes this an Average Effects (AvgE) estimator. We also restrict our sample to end in 1995 so as to better match prior papers. Our estimate of Equation (3) is reported in Column (1) of Table 5.

Using Equation (3), we do not detect a significant increase in acquisition activity. The estimated coefficient is 0.0038 and not statistically significant at conventional levels [Table 5, Column (1)]. This non-result is robust to using non-historical firm locations, as done in much of the literature. Our estimate is also of similar magnitude and of similar statistical significance as prior research. For example, Giroud and Mueller (2010) report an estimate of 0.003 [see Table 9, Panel A, Column (5) of their paper].

Our main specification [Table 3, Column (1)] differs from the standard specification [Table 5, Column (1)] in only four ways, so our finding of an increase in acquisitions must be attributable to at least one of these four differences. The four differences are: (1) the use of 4-digit industry controls rather than 3-digit SIC controls; (2) the use of the longer sample period that goes to 2000 rather than 1995; (3) the exclusion of endogenous (i.e., bad controls), like firm size, that could also be affected by passage of the BC law; and (4) the use of fixed effects to control for unobserved heterogeneity instead of an average effects estimation. In Columns (2)-(5) of Table 5, we implement each of these changes one at a time to determine why we detect an increase in acquisitions.

Our ability to detect the increase in acquisitions is driven by eliminating the estimation biases introduced by the AvgE specification and the bad controls. Switching to 4-digit SIC controls (when calculating the *industry-year* control) does not significantly change our estimate [Table 5, Column (2)]. But once we properly control for the industry-year and state-year fixed effects (rather than using AvgE controls), we detect a large and statistically significant increase in the likelihood of undertaking an acquisition [Table 5, Column (3)]. The change suggests that the measurement bias introduced by the

AvgE estimator is a reason why previous attempts to detect an increase in acquisitions were unsuccessful. The magnitude and statistical significance of the estimate further increases when we drop the bad controls [Column (4)] suggesting that their inclusion was also introducing a bias in prior estimates. Finally, extending the sample out to the year 2000 [Column (5)] so as to ensure we have at least 10 years of post-law data for each firm affected by a change in law, we obtain our original estimates. Comparing Columns (4) and (5), demonstrates that our longer sample period has only a small effect on the estimate.

Overall, our findings in Table 5 highlight the importance of researchers avoiding AvgE estimation, as discussed in Gormley and Matsa (2014), and the inclusion of endogenous controls, as discussed in Angrist and Pischke (2009). In our setting, we find that the bias introduced by each of these controls has distorted researchers' conclusions.

### **3. Interpretation and heterogeneity in responses**

*“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

The increase in acquisitions after BC laws are adopted indicates that motivating managerial effort is not the only challenge that shareholders face. After shareholder governance weakens, at least some managers appear to be quite active. This increased activity runs counter to the typical presumption that, absent strong governance, managers will exert too little effort. Our finding suggests that the literature's laser focus on governance mechanisms related to managerial effort overlook additional aspects of managerial preferences that are important for corporate outcomes and shareholder value. But what are the managerial preferences that motivate the increased activity?

One possibility is that managers are playing it safe. Because distress can be personally costly for managers, managers have an incentive to reduce the likelihood of distress even if doing so is not in

shareholders' interest (Jensen and Meckling, 1976; Amihud and Lev, 1981; Holmström, 1999).<sup>17</sup> Negative corporate outcomes often adversely affect managers' career prospects, even if poor corporate performance is caused by factors beyond their control (Gilson 1989; Jenter and Kanaan, forthcoming). Consequently, managers may prioritize the value of their own human capital and the firm's long-run survival above shareholder value and take actions that will reduce the risk of future distress.

Combined, the high share of diversifying acquisitions, the increase in cash holdings, and the decline in stock volatility are suggestive that these acquisitions are driven by a desire by managers to reduce risk. The shift in the type of acquisitions towards cash cows and the use of equity to fund these deals is also consistent with managers using these diversifying acquisitions to reduce risk. However, it is also possible that some of the observed increase in acquisitions is driven by other type of agency conflicts. For example, with the threat of a takeover reduced, managers might also use their firms' free cash flow to seek additional private benefits, such as through empire building (Jensen, 1986).

To better assess the relative importance of playing it safe and empire building motives, we analyze heterogeneity in firms' responses to BC laws. If the underlying agency conflict is managers' desire to play it safe, then we would expect the increase in acquisitions to be larger among firms at a greater risk of distress. On the other hand, if the acquisitions reflect empire building motives, we would expect them to be more prominent among firms with greater cash flow. We now test for such heterogeneity.

### *3.1. Specification for identifying heterogeneity in responses*

To avoid endogeneity concerns, we modify our specification so that we can compare firms' responses based on *ex ante* characteristics. For example, we will test for a differential response based on firms' leverage in the year prior to passage of the law, denoted as year  $T-1$ . However, specification (1) is not amenable to such a test; because there are multiple events, there is no unique  $T-1$  period for each firm

---

<sup>17</sup> A number of other theoretical papers also find that managers' exposure to risk can cause a misalignment between managers and shareholders' risk preferences. For example, see Smith and Stulz (1985), Lambert (1986), Hirshleifer and Suh (1992), Hugonnier and Morellec (2007), and Acharya and Bisin (2009).

in the panel. This difficulty in testing for heterogenous 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-difference 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 match them to firms not yet affected by passage of a BC law. 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 event, and firms are allowed to be chosen as matches for multiple events (i.e., we are matching with replacement). We then estimate a separate difference-in-difference for each BC law adoption year and report an average of the treatment effects across all of these events. By estimating the treatment effect separately for each event, we are able to identify the  $T-I$  characteristics of each firm and test for heterogeneity in responses based on these  $T-I$  characteristics. In practice, a separate estimation for each event is not necessary; instead, one can pool the data across events (i.e., across all new BC laws) and estimate the average treatment effect across these separate events using the following firm-panel linear regression:

$$y_{eijlst} = \beta_3 BC_{st} + f_{ei} + \omega_{elt} + \lambda_{ejt} + \eta_{eijlst}, \quad (4)$$

where  $y$  is the outcome of interest for firm  $i$ , in event  $e$ , industry  $j$ , located in state  $l$ , incorporated in state  $s$ , in year  $t$ .  $BC$  is the same as before, but we now include firm-event fixed effects,  $f_{ei}$ , state-year-event fixed effects,  $\omega_{elt}$ , and industry-year-event fixed effects,  $\lambda_{ejt}$ , to ensure that we separately estimate the impact of firm, state-year, and industry-year unobserved heterogeneities for each BC event. We allow the fixed effects to vary by event, because this approach is more conservative than including simple fixed effects. To account for potential covariance among firm outcomes within the same state of incorporation (including covariance from multiple draws of the same comparison firm), we again adjust the standard errors for clustering by state of incorporation.

Switching to the matching difference-in-difference estimator does not affect our earlier findings. This is shown in Table 5, Column (6). Estimating Equation (4), we again find a large increase in firms’

likelihood of doing an acquisition after passage of a BC law in their state of incorporation. While the magnitude, a 0.0084 percentage point increase, is slightly smaller than our earlier estimate of 0.011 [Table 5, Column (6)], the small difference in estimates from Equations (1) and (4) is driven by the different sampling periods of the two estimators. In our earlier estimation, firms that were affected by passage of a BC law prior to 1991 had more than 10 years of post-event data while firms affected by later events might have more than 10 years of pre-event data; in the matching estimation, each firm will have at most 10 years of pre- and post-event data.

To test for heterogeneity in firms' responses, we estimate Equation (4) separately for various subsamples of firms, where the subsamples 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.

### *3.2. Evidence on 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 look at differential responses based on firms' ex-ante leverage and cash flows. If the acquisitions are driven by empire building motives, we would expect them to be more prominent among firms with greater cash flows and lower leverage. Without easy access to cash to fund the acquisitions, it is more difficult for a manager to extract private benefits through empire-building. Increased leverage can also inhibit empire building by reducing the cash flow available to fund such growth (e.g., Jensen, 1986). If playing it safe motivates the acquisitions, however, they are instead likely to be more prominent among firms with less cash flow and higher leverage because managers' motive to reduce their firms' risk will be greater when the firm has a greater risk of distress.

Consistent with a playing it safe motive, we find that the increase in acquisitions is concentrated among firms with greater with leverage in the year prior to a BC law's adoption. These estimates are reported in Table 6. Firms with an above median leverage in year  $T-1$  that are incorporated in a state that passes a BC law are 1.47 percentage points more likely to undertake an acquisition in a given year after

passage of the law relative to before passage of the law and relative to above-median leverage firms not incorporated in a state that passes a BC law [Panel B, Column (1)]. This represents about a 20 percent increase in the likelihood of doing an acquisition. We find no increase in acquisitions among below median leverage firms; the point estimate is an order of magnitude smaller and not statistically significant [Panel A, Column (1)]. Our findings are similar when we instead look at the number of acquisitions [Column (2)], deal value [Column (3)], and the number of diversifying acquisitions [Column (4)].

The findings are similar if we instead proxy for firms' ex ante risk of distress using their modified Altman z-score in the year prior to passage of the law; these estimates are reported in Table 7.<sup>18</sup> Firms with a below-median Altman z-score in year  $T-1$  that are incorporated in a state that passes a BC law undertake 0.015 more diversifying acquisitions in a given year after passage of the law relative to before passage of the law and relative to below-median Altman z-score firms not incorporated in a state that passes a BC law [Panel A, Column (4)]. This represents about a 22 percent increase in the number of diversifying acquisitions. Our findings are similar when we instead look at the likelihood of undertaking an acquisition [Column (1)], the total number of acquisitions [Column (2)], or the deal value [Column (3)].

In further support of a playing it safe explanation, we also find that the increase in acquisitions is concentrated among firms with lower cash flow. These estimates are reported in Table 8. Firms with a below median cash-flow-to-asset ratio undertake, on average, 0.013 more diversifying acquisitions a year after passage of a BC law relative to other firms with below median cash flow located in the same state and firms located in the same industry but that are incorporated in a state that does not pass a BC law [Panel A, Column (4)]. The magnitude represents about a 25 percent increase in diversifying acquisitions. Contrary to an empire building explanation, we find no increase in diversifying acquisitions among firms with above median cash flows [Panel B, Column (4)]. The findings are similar when we look at the indicator for doing an acquisition [Column (1)], the total number of acquisitions [Column (2)], and total

---

<sup>18</sup> Following MacKie-Mason (1990), we calculate a modified-Altman z-score as  $3.3*(EBIT/assets)+1.0*(sales/assets) +1.4*(retained\ earnings/assets)+1.2*(working\ capital/assets)$ .



deal value [Column (3)].

The findings are also similar if we instead use an indicator for paying dividends as an alternative proxy for firms' level of cash flows. The increase in acquisitions occurs among the sample of firms that do not pay dividends [Table 9]. Firms with zero dividends in year  $T-1$  are one percentage point more likely to undertake an acquisition, and they undertake 0.019 more diversifying acquisitions in a given year after passage of the law relative to before passage of the law [Panel A, Columns (1) and (4)]. This represents about a 15 percent increase in the likelihood of undertaking an acquisition and a 28 percent increase in the number of diversifying acquisitions. Our findings are similar when we look at the total number of acquisitions [Column (2)] or the deal value [Column (3)]. These findings are consistent with the increase in acquisitions occurring among firms with a greater risk of distress rather than among firms where agency conflicts associated free cash flows are more likely prevalent.

Overall, the observed heterogeneity in responses suggests that playing it safe motives are driving the observed increase in acquisitions. Managers, particular those at firms at greater risk of distress, appear to actively reduce their firms' risks of distress when governance is weakened, as captured by a reduced threat of takeover. These findings support theoretical models and calibrations that suggest agency conflicts arising from managers' exposure to risk can significantly affect firms' investment and financing choices (Parrino, Poteshman, and Weisbach, 2005).

#### **4. Conclusion**

Shareholders face many obstacles in designing managers' incentives so as to maximize shareholder value. Managers may shirk or seek out private benefits at shareholders' expense. Managers may also play it safe by taking value-destroying actions that reduce their firms' risk of distress or failure, which could have large, negative personal costs for managers.

Understanding the relevance of these various agency conflicts and how the conflicts vary across firms and over time is crucial for designing incentive structures that mitigate their impact on shareholder value. For instance, suppose shareholders believe the manager is failing to make the necessary

investments in R&D and other risky investments required to create long-term value. If the failure to make these risky investments is caused by the managers' unwillingness to exert costly effort, then shareholders might wish to increase the managers' ownership stake to better align her interests. On the other hand, if the manager is forgoing these investments because she is risk-averse and worries about the potential impact of failure on her income and wealth, then increasing the managers' ownership stake in the firm may only deepen the agency conflict. In this case, increasing the convexity of the manager's payoff structure would be more appropriate (e.g., Guay, 1999). Understanding the source of the conflict also has implications for a firm's optimal leverage and other corporate policies.

Whereas the existing literature primarily focuses on agency conflicts arising from costly effort and the extraction of private benefits, we find evidence that playing it safe motives may be equally important. When firms' shareholder governance is weakened by a law that reduces the threat of a hostile takeover, we find that managers actively reduce their firms' risk. On average, firms undertake about a third more diversifying acquisitions after a BC law is adopted relative to firms operating in the same industry and firms operating in the state. The increase coincides with the timing of when each law is passed. These acquisitions are largely funded with equity and associated with negative average announcement returns. The types of acquisitions also changes; firms are more likely to acquire "cash cows"—large, high cash flow, high payout firms—which can bolster a firms' cash holdings and reduce their risk of distress. Consistent with this, we also find a decline in firms' stock volatility and an increase in their cash holdings. The observed increase in acquisitions is concentrated among firms at a greater risk of distress, firms with higher leverage and less cash flow.

Our evidence highlights a visible manifestation of managers playing it safe after shareholder governance is weakened. Even if such behavior is pervasive, it is typical difficult to observe. 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 may 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 than

is personally costly. Such actions could have important implications for shareholder value, and more broadly, aggregate economic growth and competitive interactions between firms. Our evidence that this agency conflict is salient for many firms highlights the importance to shareholders of designing governance and compensation contracts to motivate managers to take the necessary risks.

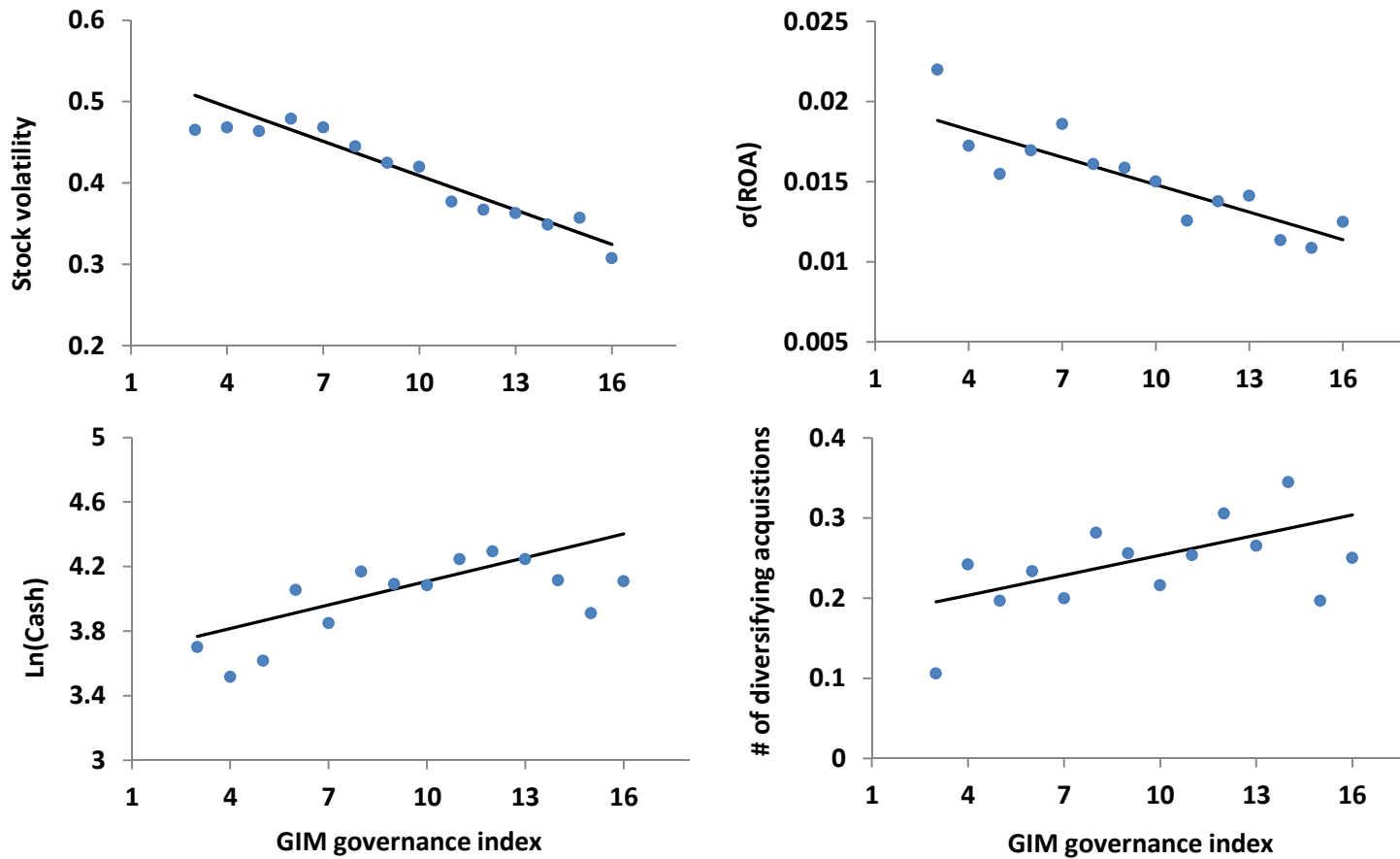
## References

- Acharya, V. V., Y. Amihud, and L. Litov. 2011. Creditor Rights and Corporate Risk-Taking. *Journal of Financial Economics* 102(1): 150-166.
- Acharya, V. V., and A. Bisin. 2009. Managerial Hedging, Equity Ownership, and Firm Value. *RAND Journal of Economics* 40(1):47-78.
- 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.
- 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.
- Bertrand, Marianne, and Sendhil Mullainathan. 2003. Enjoying the Quiet Life? Corporate Governance and Managerial Preferences. *Journal of Political Economy* 111(5):1043-1075.
- Casselmann, Ben. 2013. Risk-Averse Culture Infects U.S. Workers, Entrepreneurs. *The Wall Street Journal*, June 2.
- Cheng, Shijun, Venky Nagar, and Madhav V. Rajan. 2004. Identifying Control Motives in Managerial Ownership: Evidence from Antitakeover Legislation. *Review of Financial Studies*, 18(2), 637-672.
- Chevalier, Judith, and Glenn Ellison. 1999. Career Concerns of Mutual Fund Managers? *The Quarterly Journal of Economics*. 114(2):389-432.
- 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.
- Francis, Bill B., Iftekhhar 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.
- Gilson, Stuart C. 1989. Management Turnover and Financial Distress. *Journal of Financial Economics* 25(2):241-262.

- 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.
- Giroud, Xavier, and Holger M. Mueller. 2010. Does Corporate Governance Matter in Competitive Industries. *Journal of Financial Economics* 95:312-331.
- Gormley, Todd A. and David A. Matsa. 2011. Growing Out of Trouble: Corporate Responses to Liability Risk. *Review of Financial Studies*, 24(8), pp. 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.
- 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.
- Heider, Florian, and Alexander Ljungqvist. 2013. As Certain as Debt and Taxes: Estimating the Tax Sensitivity of Leverage from Exogenous State Tax Changes. Working paper. European Central Bank and New York University.
- 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.
- Hugonnier, J., and E. Morellec. 2007. Corporate Control and Real Investment in Incomplete Markets. *Journal of Economic Dynamics and Control* 31(5):1781-1800.
- 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. Forthcoming. CEO Turnover and Relative Performance Evaluation. *The Journal of Finance*.
- 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.
- Kempf, Alexander, Stefan Ruenzi, and Tanja Thiele. 2009. Employment Risk, Compensation Incentives, and Managerial Risk Taking: Evidence from the Mutual Fund Industry. *Journal of Financial Economics* 92:92-108.
- Kim, E. Han, and Yao Lu. 2011. CEO Ownership, External Governance, and Risk-Taking. *Journal of*

*Financial Economics* 102:272-292.

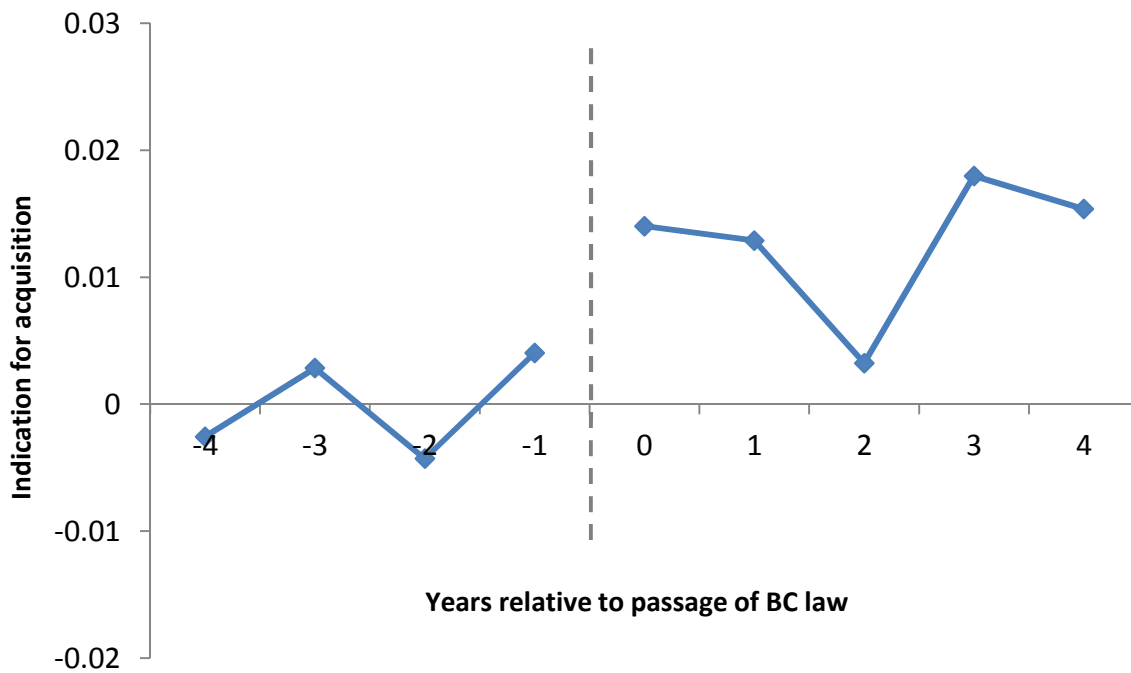
- Lambert, R. A. 1986. Executive Effort and Selection of Risky Projects. *RAND Journal of Economics* 17(1):77-88.
- Low, Angie. 2009. Managerial Risk-Taking Behavior and Equity-Based Compensation. *Journal of Financial Economics* 92(3):470-490.
- MacKie-Mason, Jeffrey K. 1990. Do Taxes Affect Corporate Financing Decisions? *Journal of Finance* 45(5):1471-1493.
- 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.
- Panousi, Vasia, and Dimitris Papanikolaou. 2012. Investment, Idiosyncratic Risk, and Ownership. *Journal of Finance* 67(3): 1113-1148.
- Rauh, Joshua D. 2006. Own Company Stock in Defined Contribution Pension Plans: A Takeover Defense? *Journal of Financial Economics* 81: 379-410.
- 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.
- 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.
- Tufano, P. 1998. Agency Costs of Corporate Risk Management. *Financial Management* 27(1): 67-77.
- Yun, Hayong. 2009. The Choice of Corporate Liquidity and Corporate Governance. *Review of Financial Studies*. 22(4): 1447-1475.



**Figure 1**

**Correlation between standard proxies of firm riskiness and the GIM governance index**

This figure reports the average stock volatility, volatility of quarterly ROA, log cash holdings, and the number of diversifying acquisitions against the GIM governance index for GIM index scores with at least 50 observations. The regression line shown is weighted based on the underlying number of observations.



**Figure 2**

**Effect of BC laws on likelihood of doing an acquisition by year**

This figure reports the point estimates from a firm-panel regression of an indicator for doing an acquisition onto an indicator 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 (1), except that the effect of BC laws is allowed to vary by year.

**Table 1****Ex-ante firm characteristics**

This table reports summary statistics for firm characteristics in the three years before a new business combination (BC) law is passed. 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 pass a BC law. Column (2) reports estimates for firms not incorporated in states that pass a BC law. Column (3) reports the  $p$ -value from a t-test of the difference between treated and untreated firms, where the standard errors are adjusted for clustering at the state of incorporation.

	<b>Treated</b>	<b>Untreated</b>	<b><math>p</math>-value of difference</b>
	(1)	(2)	(3)
<b># of Acquisitions</b>	0.094 (0.407)	0.088 (0.371)	0.560
<b>Indicator for Acquisition</b>	0.073 (0.260)	0.068 (0.252)	0.565
<b>Ln(Assets)</b>	4.09 (2.51)	3.72 (2.48)	0.064
<b>ROA</b>	-0.080 (2.88)	-0.046 (2.44)	0.343
<b>Cash / Assets</b>	0.061 (0.115)	0.062 (0.115)	0.876
<b>Stock Volatility</b>	0.538 (0.308)	0.504 (0.309)	0.337
<b><math>\sigma</math>(ROA)</b>	0.052 (0.995)	0.047 (0.626)	0.764
<b>3-year asset CAGR (%)</b>	14.33 (32.23)	12.88 (33.59)	0.482
<b>Observations</b>	5,003	20,765	



**Table 2****Volatility, cash holdings, and the effect of BC law passage**

This table reports coefficients from firm-panel regressions of stock volatility, volatility of quarterly ROA, log cash holdings, and cash/assets on an indicator for business combination laws, firm fixed effects, state-of-location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The BC Law indicator equals one if a firm is incorporated in a state that has passed a business combination law. The sample includes firm-year observations from 1976 to 2000. Standard errors are clustered at the state of incorporation. \*\*\*significant at the 1% level; \*\*significant at the 5% level.

<i>Dependent Variable =</i>	<b>Stock Volatility</b>	<b><math>\sigma(\text{ROA})</math></b>	<b>Log(Cash)</b>	<b>Cash / Assets</b>
	(1)	(2)	(3)	(4)
<b>BC Law</b>	-0.023** (0.010)	-0.073 (0.066)	0.123*** (0.038)	0.006** (0.003)
<b>Firm FE</b>	X	X	X	X
<b>State-year FE</b>	X	X	X	X
<b>Industry-year FE</b>	X	X	X	X
<b>N</b>	107,978	131,313	138,503	141,542
<b>R<sup>2</sup></b>	0.66	0.44	0.82	0.55

**Table 3****Acquisitions and the effect of BC law passage**

This table reports coefficients from firm-panel regressions of acquisition activity on an indicator for business combination laws, firm fixed effects, state-of-location-by-year fixed effects, and 4-digit SIC industry-by-year fixed effects. The BC Law indicator equals one if a firm is incorporated in a state that has passed a business combination law. The dependent variables are an indicator for doing an acquisition [Column (1)], the number of acquisitions [Column (2)], deal value of acquisitions normalized by the acquirer's market capitalization in the previous year [Column (3)], and the number of diversifying acquisitions [Column (4)]. The sample includes firm-year observations from 1980 to 2000. Standard errors are clustered at the state of incorporation. \*\*\*significant at the 1% level; \*\*significant at the 5% level; \*significant at the 10% level.

<i>Dependent Variable =</i>	<b>Indicator for acquisition</b>	<b># of acquisitions</b>	<b>Deal value / (Market cap of acquirer in t-1)</b>	<b># diversifying acquisitions</b>
	(1)	(2)	(3)	(4)
<b>BC Law</b>	0.0110*** (0.0033)	0.0305*** (0.0092)	0.1897 (0.1668)	0.0186*** (0.0072)
<b>Firm FE</b>	X	X	X	X
<b>State-year FE</b>	X	X	X	X
<b>Industry-year FE</b>	X	X	X	X
<b>N</b>	156,948	156,948	122,855	156,948
<b>R<sup>2</sup></b>	0.35	0.42	0.30	0.38

**Table 4****Effect of BC law on the characteristics of acquisitions**

This table reports coefficients from firm-panel regressions of ex-ante target firm characteristics on an indicator for business combination laws, industry fixed effects, state of location fixed effects, and year fixed effects. The BC Law indicator equals one if a firm is incorporated in a state that has passed a business combination law. The dependent variables are ex-ante target characteristics: log total assets, 3-year compounded annual growth rate (CAGR) for assets, the ratio of cash flow to asset, and the ratio of the total payout to assets\*100. The sample of acquisitions is the same as that used in Table 3, but further restricted to mergers with non-missing observations for log target assets. Target characteristics are from Compustat, and estimates for growth rate, cash flow, and total payout are weighted by target firm size. Standard errors, clustered at the state of incorporation are reported in parentheses. \* significant at 10% level, \*\* significant at 5% level, \*\*\* significant at 1% level.

<i>Dep. Variable =</i>	<b>Ln(Assets)</b>	<b>3-year Assets CAGR</b>	<b>Cash flow / Assets</b>	<b>Payout / Assets * 100</b>
	(1)	(2)	(3)	(4)
<b>BC Law</b>	0.407*** (0.098)	0.171*** (0.062)	0.118*** (0.022)	1.474*** (0.402)
<b>R-Squared</b>	0.38	0.58	0.45	0.50
<b>N</b>	1,816	1,355	1,615	1,696
<b>Fixed effects:</b>				
<b>Industry</b>	X	X	X	X
<b>State</b>	X	X	X	X
<b>Year</b>	X	X	X	X

**Table 5****Why our findings differ; a step-by-step change from previous literature**

This table reports coefficients from firm-panel regressions of acquisition activity on an indicator for business combination laws. The BC Law indicator equals one if a firm is incorporated in a state that has passed a business combination law. Column (1) reports estimates from the standard specification used in the existing literature, which includes *state-year* AvgE controls, 3-digit *industry-year* AvgE controls, firm fixed effects, time-varying controls for firm size (as measured using log assets), size-squared, firm age (as measured using the number of years a firm has been in Compustat), and the Herfindhal-Hirschman index of sales in the firm's three-digit SIC industry, and a sample window of 1976 to 1995 [see Equation (3)]. Column (2) repeats the estimation in Column (1), but instead uses 4-digit *industry-year* AvgE controls. Column (3) then replaces the *industry-year* and *state-year* AvgE controls of Column (2) with their corresponding fixed effects. Column (4) then drops the time-varying controls of earlier columns, and Column (5) extends the sample to 2000. The estimates in Column (5) represent our earlier estimation of Equation (1), as reported in Column (1) of Table 3. Column (6) then switches the specification to the matching difference-in-difference estimation of Equation (4), which includes firm-event, state-year-event, and 4-digit industry-year-event fixed effects. In all specifications, standard errors are clustered at the state of incorporation.

\*\*\*significant at the 1% level; \*\*significant at the 5% level; \*significant at the 10% level.

	Standard specification used in literature [Equation (3)]	First, switch to 4-digit SIC controls	Second, now properly control for FE	Third, drop "bad controls"	Extend sample to year 2000 [Our final specification, Equation (1)]	Our matched diff-in-diff [Equation (4)]
	(1)	(2)	(3)	(4)	(5)	(6)
<b>BC Law</b>	0.0038 (0.0037)	0.0041 (0.0037)	0.0076** (0.0031)	0.0094*** (0.0032)	0.0110*** (0.0033)	0.0084*** (0.0032)
<b>R-Squared</b>	0.27	0.27	0.35	0.34	0.35	0.42
<b>N</b>	109,680	109,525	109,682	112,718	156,948	297,880

**Table 6****Leverage and the effect of BC laws on acquisitions**

This table reports coefficients from firm-panel regressions of acquisition activity on an indicator for business combination laws, firm-by-event fixed effects, state-of-location-by-year-by-event fixed effects, and 4-digit SIC industry-by-year-by-event fixed effects. The BC Law indicator equals one if a firm is incorporated in a state that has passed a business combination law. The data include firm-year-event observations in the 10 years before and 10 years after each passage of a new BC law. The dependent variables are an indicator for doing an acquisition [Column (1)], the number of acquisitions [Column (2)], deal value of acquisitions normalized by the acquirer's market capitalization in the previous year [Column (3)], and the number of diversifying acquisitions [Column (4)]. Panel A restricts the sample to firms with below median leverage in the year prior to a BC law being passed, while Panel B restricts the sample to firms with above median leverage. Standard errors are clustered at the state of incorporation. \*\*\*significant at the 1% level; \*\*significant at the 5% level; \*significant at the 10% level.

<i>Dependent Variable =</i>	<b>Indicator for acquisition</b>	<b># of acquisitions</b>	<b>Deal value / (Market cap of acquirer in t-1)</b>	<b># of diversifying acquisitions</b>
	(1)	(2)	(3)	(4)
<b>Panel A. Firms with BELOW median leverage at time T-1</b>				
<b>BC Law</b>	0.0016 (0.0076)	0.0060 (0.0148)	-0.4075 (0.4814)	0.0063 (0.0125)
<b>N</b>	147,177	147,177	121,322	147,177
<b>R<sup>2</sup></b>	0.50	0.64	0.19	0.65
<b>Panel B. Firms with ABOVE median leverage at time T-1</b>				
<b>BC Law</b>	0.0147*** (0.0056)	0.0463*** (0.0096)	0.6768* (0.3679)	0.0206** (0.0093)
<b>N</b>	145,064	145,064	110,057	145,064
<b>R<sup>2</sup></b>	0.53	0.59	0.51	0.60
<b>Firm-event FE</b>	X	X	X	X
<b>State-year-event FE</b>	X	X	X	X
<b>Industry-year-event FE</b>	X	X	X	X

**Table 7****Bankruptcy risk and the effect of BC laws on acquisitions**

This table reports coefficients from firm-panel regressions of acquisition activity on an indicator for business combination laws, firm-by-event fixed effects, state-of-location-by-year-by-event fixed effects, and 4-digit SIC industry-by-year-by-event fixed effects. The BC Law indicator equals one if a firm is incorporated in a state that has passed a business combination law. The data include firm-year-event observations in the 10 years before and 10 years after each passage of a new BC law. The dependent variables are an indicator for doing an acquisition [Column (1)], the number of acquisitions [Column (2)], deal value of acquisitions normalized by the acquirer's market capitalization in the previous year [Column (3)], and the number of diversifying acquisitions [Column (4)]. Panel A restricts the sample to firms with below median Altman z-scores in the year prior to a BC law being passed, while Panel B restricts the sample to firms with above median z-scores. Standard errors are clustered at the state of incorporation. \*\*\*significant at the 1% level; \*\*significant at the 5% level; \*significant at the 10% level.

<i>Dependent Variable =</i>	<b>Indicator for acquisition</b>	<b># of acquisitions</b>	<b>Deal value / (Market cap of acquirer in t-1)</b>	<b># of diversifying acquisitions</b>
	(1)	(2)	(3)	(4)
<b>Panel A. Firms with BELOW median z-score at time T-1</b>				
<b>BC Law</b>	0.0094** (0.0046)	0.0385*** (0.0080)	1.560** (0.7862)	0.0149*** (0.0053)
<b>N</b>	115,625	115,625	85,721	115,625
<b>R<sup>2</sup></b>	0.51	0.59	0.23	0.59
<b>Panel B. Firms with ABOVE median z-score at time T-1</b>				
<b>BC Law</b>	0.0025 (0.0093)	0.0034 (0.0138)	-0.0297 (0.0859)	0.0051 (0.0125)
<b>N</b>	133,480	133,480	111,069	133,480
<b>R<sup>2</sup></b>	0.50	0.59	0.20	0.01
<b>Firm-event FE</b>	X	X	X	X
<b>State-year-event FE</b>	X	X	X	X
<b>Industry-year-event FE</b>	X	X	X	X

**Table 8****Cash flows and the effect of BC laws on acquisitions**

This table reports coefficients from firm-panel regressions of acquisition activity on an indicator for business combination laws, firm-by-event fixed effects, state-of-location-by-year-by-event fixed effects, and 4-digit SIC industry-by-year-by-event fixed effects. The BC Law indicator equals one if a firm is incorporated in a state that has passed a business combination law. The data include firm-year-event observations in the 10 years before and 10 years after each passage of a new BC law. The dependent variables are an indicator for doing an acquisition [Column (1)], the number of acquisitions [Column (2)], deal value of acquisitions normalized by the acquirer's market capitalization in the previous year [Column (3)], and the number of diversifying acquisitions [Column (4)]. Panel A restricts the sample to firms with below median cash flows/assets in the year prior to a BC law being passed, while Panel B restricts the sample to firms with above median cash flows/assets. Standard errors are clustered at the state of incorporation. \*\*\*significant at the 1% level; \*\*significant at the 5% level; \*significant at the 10% level.

<i>Dependent Variable =</i>	<b>Indicator for acquisition</b>	<b># of acquisitions</b>	<b>Deal value / (Market cap of acquirer in t-1)</b>	<b># of diversifying acquisitions</b>
	(1)	(2)	(3)	(4)
<b>Panel A. Firms with BELOW median cash flows/assets at time T-1</b>				
<b>BC Law</b>	0.0071* (0.0040)	0.0192** (0.0077)	0.1125* (0.0676)	0.0134*** (0.0049)
<b>N</b>	109,867	109,867	82,728	109,867
<b>R<sup>2</sup></b>	0.50	0.59	0.98	0.59
<b>Panel B. Firms with ABOVE median cash flows/assets at time T-1</b>				
<b>BC Law</b>	0.0025 (0.0092)	0.0092 (0.0156)	-0.2868 (0.5158)	-0.0024 (0.0134)
<b>N</b>	126,281	126,281	104,615	126,281
<b>R<sup>2</sup></b>	0.51	0.59	0.16	0.58
<b>Firm-event FE</b>	X	X	X	X
<b>State-year-event FE</b>	X	X	X	X
<b>Industry-year-event FE</b>	X	X	X	X

**Table 9****Dividends and the effect of BC laws on acquisitions**

This table reports coefficients from firm-panel regressions of acquisition activity on an indicator for business combination laws, firm-by-event fixed effects, state-of-location-by-year-by-event fixed effects, and 4-digit SIC industry-by-year-by-event fixed effects. The BC Law indicator equals one if a firm is incorporated in a state that has passed a business combination law. The data include firm-year-event observations in the 10 years before and 10 years after each passage of a new BC law. The dependent variables are an indicator for doing an acquisition [Column (1)], the number of acquisitions [Column (2)], deal value of acquisitions normalized by the acquirer's market capitalization in the previous year [Column (3)], and the number of diversifying acquisitions [Column (4)]. Panel A restricts the sample to firms with zero dividends in the year prior to a BC law being passed, while Panel B restricts the sample to firms with positive dividends. Standard errors are clustered at the state of incorporation. \*\*\*significant at the 1% level; \*\*significant at the 5% level; \*significant at the 10% level.

<i>Dependent Variable =</i>	<b>Indicator for acquisition</b>	<b># of acquisitions</b>	<b>Deal value / (Market cap of acquirer in t-1)</b>	<b># of diversifying acquisitions</b>
	(1)	(2)	(3)	(4)
<b>Panel A. Firms with ZERO dividends at time T-1</b>				
<b>BC Law</b>	0.0102** (0.0040)	0.0340*** (0.0082)	0.4474* (0.2532)	0.0186*** (0.0051)
<b>N</b>	172,702	172,702	131,656	172,702
<b>R<sup>2</sup></b>	0.46	0.53	0.63	0.52
<b>Panel B. Firms with POSITIVE dividends at time T-1</b>				
<b>BC Law</b>	-0.0033 (0.0076)	-0.0020 (0.0169)	-0.1501 (0.5056)	-0.0001 (0.0133)
<b>N</b>	125,178	125,178	103,813	125,178
<b>R<sup>2</sup></b>	0.56	0.69	0.15	0.70
<b>Firm-event FE</b>	X	X	X	X
<b>State-year-event FE</b>	X	X	X	X
<b>Industry-year-event FE</b>	X	X	X	X



### **Appendix Table A.1**

#### **Business combination laws passed by year and state**

This table reports the states that passed a business combination law along with the year in which the law was passed. This information was obtained from Bertrand and Mullainathan (2003).

---

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

---

**Appendix Table A.2**  
**Variable Definitions**

---

<b>Stock volatility</b>	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.
<b><math>\sigma</math>(ROA)</b>	Calculated from Compustat using the standard deviation of firms quarterly ROA for the year. Quarterly ROA is calculated as $niq_t / atq_{t-1}$ .
<b>Ln(Cash)</b>	Calculated from Compustat using $\ln(ch)$ .
<b>Cash/assets</b>	Calculated from Compustat using $ch/at$ .
<b>Indicator for acquisition</b>	Calculated using SDC's Mergers and Acquisitions Database. Indicator equal to one if the firm does an acquisition.
<b># of acquisitions</b>	Calculated using SDC's Mergers and Acquisitions Database. Number of acquisitions a firm does.
<b>Deal value / (Market cap of acquirer in t-1)</b>	Calculated using SDC's Mergers and Acquisitions Database. Total deal value of completed acquisitions in a year divided by firms lagged market capitalization, where market capitalization is measured as $csho \times prcc\_c$
<b># of diversifying acquisitions</b>	Calculated using SDC's Mergers and Acquisitions Database. Number of acquisitions a firm does where its primary SIC industry does not coincide with any SIC code of the target firm.
<b>Cash flows/assets</b>	$(oiadp - accruals) / at$ , where $accruals = (act_t - act_{t-1}) - (che_t - che_{t-1}) - (lct_t - lct_{t-1}) + (dlc_t - dlc_{t-1}) - dp$
<b>Debt/assets</b>	Calculated from Compustat using $(dltt + dlc)/at$ .
<b>Altman z-score</b>	Calculated from Compustat using $(3.3 \times oiadp + 0.999 \times sale + 1.4 \times re + 1.2 \times wcap) / at$
<b>Dividend indicator</b>	Calculated from Compustat using indicator that equals 1 if $dvc > 0$

---