The effect of takeover protection on the value of cash: Evidence from a natural experiment[*]

Eliezer M. Fich

Jarrad Harford

Adam S. Yore

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Abstract

Shareholders' updated valuation of internal slack reveals their revised assessment of potential agency conflicts. We study how the value of internal cash changes following state antitakeover regulation events. After carefully addressing the critiques of such experiments, we find that the value of cash increases following antitakeover law implementation, but there is considerable heterogeneity in how the value changes. Firms more susceptible to quiet-life agency problems show no increases in the market-assessed value of internal slack. Conversely, cash appreciates in companies where takeover protection helps bond important commitments with major counterparties. These findings hold across different measures of antitakeover protection events.

JEL classification: G30; G32; G34; K22; L14

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1. Introduction

A large literature in both finance and law considers the effects (and debates the use) of various antitakeover provisions and related legislation. Gompers, Ishii and Metrick (2003) along with Bebchuk, Cohen and Farrell (2009) propose indexes of internally adopted provisions, especially poison pills and classified boards, as measures of entrenchment, or more broadly, agency problems between top managers and shareholders. Others have seized on staggered state-level adoptions of antitakeover legislation as natural experiments to examine shocks to takeover vulnerability. Takeover threats play an important role, both good and bad (as in Stein (1988)), in the overall governance and incentive structure of top managers. In keeping with this assertion, recent work by Giroud and Mueller (2010), Atanassov (2013), and Gormley and Matsa (2016), respectively examine changes in productivity, corporate innovation, and distress risk after the adoption of antitakeover legislation. Those papers focus on the most commonly enacted law, the business combination (BC) law.

Recently, scholars have debated the efficacy of business combination laws in general (Catan and Kahan, 2016) and the way they have been used in governance studies in particular (Karpoff and Wittry, 2015). The view of many legal scholars, exemplified by Catan and Kahan (2016), is that business combination laws deliver no incremental antitakeover protection beyond that provided by a poison pill (especially when combined with a classified board). Poison pills were upheld as legal for Delaware corporations in the November 19, 1985 *Moran v. Household International, Inc.* decision, and for many other states through court decisions or explicit legislation. Further, poison pills can be instantly implemented by every corporation, so even firms without an explicit pill provision have a shadow pill [Coates (2000); Daines (2001)]. Consequently, these scholars argue that business combination laws, which were only affirmed by

the U.S. Court of Appeals in the May 24, 1989 *Amanda Acquisition Corp. v. Universal Foods Corp.* decision, are largely inconsequential. A less extreme view is put forth by Karpoff and Wittry (2015), who allow for business combination laws to be relevant, but question the origins of academic finance's focus on them. They further point out that specific implementations of business combination laws in academic studies are flawed since they typically ignore prior so-called first generation antitakeover law coverage, the uncertainty prior to the *Amanda* decision, and other important details.

In this paper we use shareholder valuation of internal cash as an experimental setting to contribute to this debate. As accumulated free cash flow, internal cash reserves are the asset most sensitive to agency conflicts. How to provide managers with enough internal slack to avoid underinvestment, but not so much as to allow overinvestment is central to Jensen (1986) and Stulz (1990), which laid the foundation of much of the study of the agency costs of free cash flow. Thus, the value shareholders place on a marginal dollar in the hands of managers is a powerful barometer of what matters in corporate governance.

For comparability, we begin with the standard natural experiment approach using the staggered adoption of state-level BC laws. We find strong and consistent evidence that internal cash is more valuable following BC law adoptions. On average, the marginal value of one dollar increases by about $0.22 after BC laws pass. This result is robust to different econometric specifications including the use of high-order fixed effects (Gormley and Matsa, 2014) and the addition of the control variables used by Faulkender and Wang (2006).

Our findings are subject to the criticisms summarized above, so we carefully implement all the corrections proposed by Karpoff and Wittry (2015). These include controls for first-generation antitakeover laws, for firms that lobbied for BC laws, for other state laws, for notable case law

deemed relevant by Karpoff and Wittry (2015), and for the unique effect of the pre-1982 period in which first-generation antitakeover laws were effective. After accounting for all of these issues, we find that the positive association of BC laws and the value of cash, at least after the *Amanda* decision (which affirmed these laws), persists. As additional robustness tests, we consider the potential heterogeneity in the strength of BC laws (Armstrong, Balakrishnan, and Cohen, 2012), the effect of firms that reincorporate to other states, and the influence of Delaware incorporation in our analyses. All of these tests generate results that are generally consistent with the baseline findings.

At first glance, the evidence indicating that the marginal value of cash increases after BC laws are enacted is somewhat surprising. This is because these laws, as well as other antitakeover devices, are widely regarded as weakening the market for corporate control which is a governance mechanism touted as effective in disciplining managers and reducing agency costs within a firm (e.g., Jensen and Ruback, 1983; Shleifer and Vishny, 1997; Bertrand and Mullainathan, 2003).[1] An opposing view is that takeover protections benefit shareholders in a variety of settings. For instance, takeover protection can enhance the bargaining power of managers of firms that become takeover targets (e.g., DeAngelo and Rice, 1983; Stulz, 1988; Comment and Schwert, 1995). Moreover, recent empirical work by Johnson, Karpoff, and Yi (2015), Smith (2015), and Cremers, Litov, and Sepe (2015) shows that antitakeover defenses are associated with significant appreciations in shareholder wealth.

In the specific context of BC legislation, there is evidence that these laws affect firms in varying ways and that the shareholders in some companies actually benefit from their

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[1] BC laws impose a moratorium on certain transactions, particularly mergers and asset sales, between a large shareholder and the firm for a period ranging from three to five years after the large shareholder's equity stake exceeds a prespecified threshold. This moratorium prevents corporate raiders from gaining access to the target firm's assets for the purpose of paying down acquisition debt, thereby making hostile takeovers more difficult and often impossible.

promulgation. Cen, Dasgupta, and Sen (2015), for instance, find that the passing of BC laws improves operating performance in many firms by enabling its managers to commit to long-term relationships with their main stakeholders. Likewise, Armstrong, Balakrishnan, and Cohen (2012) show that financial statement informativeness improves following the adoption of BC laws. Moreover, Francis, Hasan, John, and Waisman (2010) find that bond issues by firms in states that have passed business combination legislation are met with positive stock price reactions. Those authors argue that the adoption of these laws can have positive firm value consequences because they help mitigate the agency cost of debt.

On the other hand, John, Li, and Pang (2016) find that, on average, firms' return on assets (ROA) drops by 0.5% after BC laws pass and that a one-standard-deviation increase in excess cash reduces ROA further by 0.53%. Their results are consistent with those by Giroud and Mueller (2010) showing that the productivity of firms in noncompetitive industries declines after the passing of BC laws. However, Giroud and Mueller (2010) also find that these laws do not affect the productivity of firms in competitive environments. In a similar vein, Qiu and Yu (2009) find that, while the cost of debt rises after the passing of BC laws, the increase is sharper for firms in noncompetitive industries. Both Giroud and Mueller (2010) and Qui and Yu (2009) argue that their respective findings support the quiet life hypothesis (Hicks, 1935; Bertrand and Mullainathan, 2003). This hypothesis predicts that managers in noncompetitive industries exploit the takeover protection afforded by BC laws to cut their firm-specific investments in cognitively difficult activities.

Given this discussion, we also examine whether the marginal value of cash is affected by the interaction between the passage of BC laws and different proxies we use to identify quiet life firms. The results indicate that the value of an extra dollar increases after BC laws are enacted, but the

increase is absent for quiet life firms. This finding, which is based on defining quiet life firms as those in highly concentrated industries (Giroud and Mueller, 2010), also holds in out-of-sample and falsification tests. Moreover, our results obtain in different specifications including alternative ways to identify quiet life firms (e.g., mature firms and companies with substantial sales to the government). Likewise, when we split our sample based on industry growth (Pinkowitz and Williamson, 2007), we estimate that the post-BC law increase in the value of cash disappears in firms that operate in low growth environments. The latter result indicates that the market distinguishes from low growth, where agency costs are higher and high growth, where takeover protection can allow firms to be less myopic and invest for the long-run. This potentially shifts their feasible investment opportunity curve up, making internal slack, which funds investment, more valuable.

In contrast with the evidence for quiet life firms, we find that after BC laws pass, the market-assessed value of internal slack is higher for firms that have a key industrial client and/or an active commercial alliance with another firm. This evidence, which suggests that the passage of BC laws allows these firms to credibly commit to their major business partners, supports the bonding hypothesis of takeover defenses (Johnson, Karpoff, and Yi, 2015). Those authors propose (and empirically show) that in young firms, takeover defenses provide a commitment device with their major business counterparties. Such device reassures these partners that the firm will honor their claims and encourages them to invest in the business relation. Taken together with the main results, our findings produce a more nuanced inference on how the market views the impact of takeover protection laws; they clearly matter, and can even be positive for certain groups of firms.

Importantly, our conclusions are robust to alternative measures of takeover protection. Using poison pill legislation as an alternative antitakeover proxy generates results that are consistent with

those obtained with BC laws. On average, poison pill protection is associated with a higher marginal value of cash but such association is missing in pill-covered quiet life firms. Nevertheless, once states ratify poison pills, the marginal value of cash increases in firms that can bond a business relation with a major commercial counterparty.

This paper contributes new and important evidence to several strands of the literature. One examines firm characteristics or corporate settings affecting the value of cash holdings [see, for example, Opler Pinkowitz, Stulz, and Williamson (1999), Harford (1999), Pinkowitz and Williamson (2001), Mikkelson and Partch (2003), Dittmar, Mahrt-Smith, and Servaes (2003), Faulkender and Wang (2006), Foley, Hartzell, Titman, and Twite (2007), Dittmar and Mahrt-Smith (2007), Pinkowitz and Williamson (2007), Harford, Mansi, and Maxwell (2008), Denis and Sibilkov (2010), Duchin (2010), and Harford, Klasa, and Maxwell (2014)].

Our findings also add to the strand of the literature that evaluates the effect of business combination laws on various corporate characteristics and actions [see, for example, Garvey and Hanka (1999), Bertrand and Mullainathan (1999, 2003), Yun (2009), Qiu and Yu (2009), Giroud and Mueller (2010), Francis, Hasan, John, and Waisman (2010), Armstrong, Balakrishnan, and Cohen (2012), Atanassov (2013), Karpoff and Wittry (2015), Cen, Dasgupta, and Sen (2015), John, Li, and Pang (2016), and Gormley and Matsa (2016)].

More generally, our results showing that the impact of BC laws varies according to firm-specific attributes, advances the literature documenting that one size does not fit all when it comes to the value effect of certain governance characteristics [see, for example, Coles, Daniel and Naveen (2008) and Yermack (1996) on the effect board size as well as Field, Lowry and Mkrtchyan (2013) and Fich and Shivdasani (2006) on the impact of busy boards]. Our work also adds to the debate on whether certain governance structures or provisions benefit shareholders

[see, for instance, Faleye (2007) and Bates, Becher, and Lemmon (2008) on the role of classified boards, and also Ahern and Dittmar (2012) and Eckbo, Nygaard, and Thorburn (2015) on the merits of mandating gender quotas to staff corporate boards.]

The paper continues as follows. Section 2 describes the data and methods. Section 3 presents our empirical analyses. Section 4 contains our conclusions. The appendix provides definitions for all the variables used in this study.

2. Data and experimental design

We begin by identifying the universe of firms listed in the COMPUSTAT database spanning the fiscal years 1972 to 2010 excluding utilities (SIC 4900-4999), financials (SIC 6000-6999), and public administration / non-classifiable firms (SIC 9000-9999). As shown in Table 1, BC laws are approved over the thirteen year period from 1985 until 1997. States in bold indicate that the BC law in a specific state is considered to be "strong" following the taxonomy in Armstrong, Balakrishnan, and Cohen (2012). Those authors code a state's BC law as strong if its passing coincides with other antitakeover legislation. Our sample period reflects three symmetric windows comprised of the thirteen years before these laws are enacted (1972-1984), the thirteen years during which these laws are promulgated (1985-1997), and the thirteen after these laws pass (1998-2010). This procedure yields an initial base sample of 274,173 firm-year observations from 24,554 unique firms. Table 1 also reports the dates in which different states enact Poisson Pill legislation. Information on the adoption of both BC and Poison Pill laws are obtained from Bertrand and Mullainathan (2003) and Karpoff and Wittry (2015).

In order to conduct our empirical tests, for each observation we require information on the state of incorporation (INCORP), the location of the company's headquarters (STATE), leverage ((DLC

+ DLTT) / (DLC + DLTT + CSHO x PRCC_F)), new external finance ((SSTK - PRSTKC) + (DLTIS - DLTR)), and the beginning- and end-of-period values of cash and marketable securities (CHE), market capitalization (PRCC_F x CSHO), earnings (IB + XINT + TXDI + ITCI), interest expense (XINT), and common dividends (DVC). We are able to obtain these COMPUSTAT data for a sample of 117,204 firm-year observations from 12,455 unique firms. We retain firms listed in The Center for Research on Securities Prices' (CRSP) monthly stock file with enough data to compute their size and book-to-market matched excess returns for the fiscal year (Fama and French, 1993). This last condition is met by 89,958 firm-year observations from 9,908 unique firms.

Table 2 describes our sample. Panel A presents summary statistics for our key variables. All data are converted to real values in 2010 dollars and we note that many exhibit characteristics that are comparable (in magnitude) to those reported elsewhere in the literature. For example, the average (median) cash ratio is 19% (10%). For the same ratio, Faulkender and Wang (2006) report an average (median) of 17% (9.5%). In our sample, the mean (median) market leverage is 27% (21%). Faulkender and Wang report a mean (median) leverage ratio of 28% (23%) for their sample. The median return on assets (ROA) in our sample is 12% which is comparable to the 10.4% reported by Giroud and Mueller (2010).

In Panel B of Table 2, we report the temporal distribution of our sample. The panel provides information about the percentage of companies affected during the years in which BC laws have been effective for at least six months. Panel C provides the industrial distribution of our sample using the Fama and French (1997) 48 industry groups. Industries reported in bold are classified as low growth following the taxonomy in Pinkowitz and Williamson (2007).

2.1. Excess stock returns

To test whether BC laws affect the marginal value of cash, we proxy for the change in firm value by calculating the excess stock returns accruing to shareholders during the fiscal year. According to Panel A of Table 2, the mean (median) excess return in our sample is 1% (-8%).[2] Excess returns for firm i at time t, $r_{i,t} - R^B_{i,t}$, are calculated as the difference between the buy-and-hold returns for the sample company and that of a size and book-to-market matched benchmark over 12 months ending at the fiscal year-end date. These returns are computed as:

$$r_{i,t} - R^B_{i,t} \;=\; [\; \textstyle\prod_{t=-11\ldots+0} (1+RET_{i,t}) - 1\;] \;-\; [\;\textstyle\prod_{t=-11\ldots+0} (1+Benchmark\ RET_{i,t}) - 1\;] \quad (1)$$

where $RET_{i,t}$ is the monthly holding period return of sample firm i at time t and *Benchmark* $RET_{i,t}$ is the return of the benchmark portfolio. Following Fama and French (1993), the sample firms are assigned to one of 25 value-weighted size and book-to-market benchmark portfolios as of June of each year t. The 25 portfolios are formed from the five size quintiles using the market capitalization of NYSE firms as of June 30 of each year and five book-to-market quintiles are formed from NYSE firms as of December of the prior year. In the event that a sample firm is delisted, the delisting value is reinvested into the benchmark portfolio.

2.2. Experimental design

To determine the marginal value of cash, we follow the research design implemented in prior literature [Faulkender and Wang (2006); Dittmar and Mahrt-Smith (2007); Denis and Sibilkov (2010); Harford, Klasa, and Maxwell (2014)] and regress excess stock returns on the change in cash. We implement three regression specifications in our primary tests. The first, which augments the experimental design in Faulkender and Wang (2006), regresses excess stock returns for firm i

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[2] Comparably, for the same variable Faulkender and Wang (2006) report a mean (median) of -0.5% (-8.5%).

at time t, $r_{i,t} - R^B_{i,t}$, upon the change in cash in the presence of a BC law while controlling for the changes in a host of other firm-specific factors known to affect shareholder wealth. Our first specification, given by equation (2), is as follows:

$$r_{i,t} - R^B_{i,t} = \gamma_0 + \gamma_1 BC\ Law_{s,t} + \gamma_2 \frac{\Delta C_{i,t}}{M_{i,t-1}} \times BC\ Law_{s,t} + \gamma_3 \frac{\Delta C_{i,t}}{M_{i,t-1}} + \gamma_4 \frac{\Delta E_{i,t}}{M_{i,t-1}} + \qquad (2)$$

$$\gamma_5 \frac{\Delta NA_{i,t}}{M_{i,t-1}} + \gamma_6 \frac{\Delta RD_{i,t}}{M_{i,t-1}} + \gamma_7 \frac{\Delta I_{i,t}}{M_{i,t-1}} + \gamma_8 \frac{\Delta D_{i,t}}{M_{i,t-1}} + \gamma_9 \frac{C_{i,t-1}}{M_{i,t-1}} + \gamma_{10} L_{i,t} + \gamma_{11} \frac{NF_{i,t}}{M_{i,t-1}}$$

where ΔX reflects the change in the variable X. $BC\ Law_{s,t}$ is a (0,1) indicator variable denoting that a business combination law is effective in state of incorporation s at time t for at least half of the fiscal year. $C_{i,t}$ and $C_{i,t-1}$ are cash and marketable securities at the end and beginning of the period (respectively), $E_{i,t}$ is earnings before interest and extraordinary items, $NA_{i,t}$ is total assets net of cash, $RD_{i,t}$ is research and development expenditures, $I_{i,t}$ is interest expense, $D_{i,t}$ is total dividends, $L_{i,t}$ is market leverage, and $NF_{i,t}$ is the net amount of external financing. All firm level control variables are normalized by the beginning of period market capitalization ($M_{i,t-1}$). Our primary coefficient of interest, γ_2, reflects the change in the marginal value of cash when a business combination law is in effect.

Our second specification follows from Gormley and Matsa (2014, 2016) which leverages the staggered adoptions of business combination laws across the U.S. along with higher ordered fixed effects to achieve identification. Equation (3) describes our second empirical specification.

$$r_{i,t} - R^B_{i,t} = \gamma_0 + \gamma_1 BC\ Law_{s,t} + \gamma_2 \frac{\Delta C_{i,t}}{M_{i,t-1}} \times BC\ Law_{s,t} + \gamma_3 \frac{\Delta C_{i,t}}{M_{i,t-1}} + f_i + \omega_{l,t} + \lambda_{j,t} \qquad (3)$$

Equation (3) controls for unobserved firm heterogeneity, time-varying differences across states, and time-varying differences across industries by including firm (f_i), HQ state-by-year ($\omega_{l,t}$), and 4-digit SIC industry-by-year ($\lambda_{j,t}$) fixed effects for a firm i, headquartered in state l, operating in industry j, at time t. Standard errors are clustered at the state of incorporation level s. Angrist

and Pischke (2009) and Gormley and Matsa (2014) argue that including additional controls in the presence of fixed effects may lead to biased parameter estimates if they are contemporaneously affected by the identifying construct (in our case, the passage of BC Laws). Therefore, (3) includes only the standalone BC Law indicator, the change in cash, the interaction of these variables, and the aforementioned fixed effects. Nonetheless, in equation (4), we augment equation (3) by including the time-varying firm controls deemed important by Faulkender and Wang (2006). We use equation (4) as our third specification to test the robustness of our results.

$$r_{i,t} - R_{i,t}^B = \gamma_0 + \gamma_1 BC\ Law_{s,t} + \gamma_2 \frac{\Delta C_{i,t}}{M_{i,t-1}} \times BC\ Law_{s,t} + \gamma_3 \frac{\Delta C_{i,t}}{M_{i,t-1}} + \gamma_4 \frac{\Delta E_{i,t}}{M_{i,t-1}} + \quad (4)$$

$$\gamma_5 \frac{\Delta NA_{i,t}}{M_{i,t-1}} + \gamma_6 \frac{\Delta RD_{i,t}}{M_{i,t-1}} + \gamma_7 \frac{\Delta I_{i,t}}{M_{i,t-1}} + \gamma_8 \frac{\Delta D_{i,t}}{M_{i,t-1}} + \gamma_9 \frac{C_{i,t-1}}{M_{i,t-1}} + \gamma_{10} L_{i,t} + \gamma_{11} \frac{NF_{i,t}}{M_{i,t-1}} + f_i +$$

$$\omega_{l,t} + \lambda_{j,t}$$

Provided that our benchmark returns control for common risk factors affecting stock returns and our firm, state, and industry controls account for other idiosyncratic factors, our research design is essentially a fiscal year long event study [as in Dittmar and Mahrt-Smith (2007)].

3. Empirical analyses

Our empirical strategy draws on the methods used by Faulkender and Wang (2006) in a study in which they estimate the marginal value of cash using a sample of firms during 1972-2001. In regressions that use excess stock returns as the dependent variable, they show that an extra dollar of cash is valued by shareholders at \$0.75 and that the marginal value of cash for a firm with zero cash and no leverage is \$1.47.[3]

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[3] These analyses are reported in Table II in Faulkender and Wang (2006, p. 1973).

3.1. Baseline result

In the first two models of Table 3, we replicate the specification in Faulkender and Wang and obtain results that are very similar to theirs. According to model 1, we find that an extra dollar of cash is valued by shareholders at about $0.77. The estimates in model 2 indicate that the marginal value of cash for a company without cash and leverage is approximately $1.37. Moreover, as in Faulkender and Wang, we also find that the marginal value of cash is decreasing with liquidity and leverage. These results suggest that there is nothing unusual about our sample.

In models (3)-(10) of Table 3 we examine whether the passing of BC laws affects the value of cash by using the interacted model which splits our sample firms based on whether a BC law is promulgated in a state. For this purpose, in all of these models we regress excess stock returns on the change in cash (Δ Cash) interacted with the BC law indicator. This interaction term reflects the change in the marginal value of cash following the passage of a BC law.

Model (3) of Table 3 estimates equation (3) which is a regression that includes the higher order fixed effects (Gormley and Matsa, 2014) whereas models (4) and (5) augment the baseline specification with control variables used by Faulkender and Wang (2006).[4] Regressions (6)-(10) estimate different iterations of equation (2) based on the marginal value of cash tests reported by Faulkender and Wang (2006), Dittmar and Mahrt-Smith (2007), Denis and Sibilkov (2009), and Harford, Klasa, and Maxwell (2014) with model (7) being the closest to the baseline specification in Faulkender and Wang (2006). Models (3), (9) and (10) include firm fixed effects as in Giroud and Mueller (2010).

The coefficient for the interaction term in Table 3 is positive and statistically significant in all the models in which that variable is used. According to the estimates in model (3), investors value

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[4] Specifically, Models (3) through (5) include firm, HQ state by year, and 4-digit SIC industry by year fixed effects.

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an additional dollar of cash at about $0.63 for the average firm, but that value increases by about $0.22 when BC laws become effective. Models (4), (6), (8), and (10) imply similar economic effects. Models (5), (8), and (10) show that, on average, the marginal value of cash for a firm with no cash and no leverage is $1.30 to $1.33, but that value raises by 20 cents to 27 cents after BC laws pass. We note that these increases in the market-assessed value of internal slack obtain after controlling for unobserved time invariant firm characteristics, time varying differences across states, and time varying industry effects. Gormley and Matsa (2014, 2016), advise against adjusting stock returns when using them as the dependent variable in regression analyses and instead recommend implementing their fixed-effects methods. We follow their advice in untabulated regressions and find that once BC laws are enacted the value on an extra dollar increases by 20 cents to 22 cents.

3.2. Robustness tests for baseline result

In this section, we probe the preceding findings by including additional control variables that could confound the effect of BC legislation. Moreover, since a large fraction of the firms we analyze are incorporated in Delaware, we test whether our baseline result obtains in both Delaware and non-Delaware companies. We account for the effect of reincorporation to other states and also consider whether the strength of the BC legislation alters its effect on the value of cash.

3.2.1. Additional controls

In contemporaneous work, Karpoff and Wittry (2015) show that the effect (size, direction, and significance) of BC laws depends on other state antitakeover laws and on the legal regime as reflected in important court decisions. To address this issue, in columns (1) and (2) of Panel A in

Table 4 we expand the tests presented in Table 3 with the additional independent variables recommended by Karpoff and Wittry (2015). These variables control for states where first-generation takeover laws were passed, for several important court decisions (e.g., *Moran v. Household International, CTS Corp. v. Dynamics Corp.*) and for the existence of other related laws (e.g., Fair Price, Control Share Acquisition). A detailed description for all of these (and other) variables is provided in the appendix.[5] The key explanatory variable in all tests is the BC law indicator interacted with the change in cash.

Giroud and Mueller (2010) note that most state anti-takeover laws were adopted during emergency sessions under the political pressure of a single firm facing a takeover threat. They argue that such pattern mitigates the concern that BC laws were passed due to lobbying by a broad coalition of firms. Notwithstanding this, Karpoff and Wittry (2015) identify firms that lobbied for business combination legislation and argue that their inclusion as a control variable is necessary to evaluate the effect of these laws.

The possibility that BC laws pass because of lobbying raises questions related to reverse causality. In our tests, the inclusion of state- and industry-year fixed effects lessens the reverse causality concern that the enactment of BC laws results from lobbying at the local and industry level, respectively. Nevertheless, to further mitigate this issue, the tests in Panel A of Table 4 include the lobbying control variable suggested by Karpoff and Wittry (2015).

The results in columns (1) and (2) of Panel A indicate that shareholders value an extra dollar of cash more highly after BC laws are promulgated. This evidence indicates that our baseline results are robust to the potential caveats identified by Karpoff and Wittry (2015) associated with the staggered adoption of state BC laws.

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[5] Karpoff and Wittry (2015) provide a comprehensive explanation for each of the various relevant case law decisions.

An additional potential issue (also noted by Karpoff and Wittry) is that first-generation antitakeover laws were in effect until June 1982 when the U.S. Supreme Court decided in *Edgar v. MITE Corp.* that these laws were unconstitutional. Karpoff and Wittry argue that, even with the inclusion of year fixed effects, testing the impact of BC laws in samples that include the pre-1982 period may generate biased results since the estimates are interpreted relative to the existence of the takeover deterrence of the first generation laws. Columns (3) and (4) of Panel A address this concern by limiting our sample to the post-1982 (until 2010) period which removes the confounding effect from the first generation laws. The results continue to document that the marginal value of cash improves (by about 19 cents to 20 cents) after BC laws are enacted.

3.2.2. Delaware incorporation

Armstrong et al. (2012) note that a valid concern arises when examining the effect of BC laws because the majority of US firms are incorporated in Delaware. In their sample, approximately 60% of the companies are incorporated in Delaware. Comparably, the incidence of Delaware firms is about 65% in our sample (Table 1).

As in Armstrong et al., we split the BC Law indicator into Delaware BC Law and Non-Delaware BC Law dummies, which are respectively set to one if the firm-year is from Delaware or another state with BC laws during a year in which these laws were in effect and set to zero otherwise. We use the split indicators in the marginal value of cash regressions reported as models (1) and (2) in Panel B of Table 4. These tests examine whether the effect of BC laws accrues solely to Delaware firms or can be found in firms incorporated in other states. The results show that, regardless of the state where companies are incorporated, the marginal value of cash increases after BC legislation passes. Notably, the appreciation in the value of an extra dollar of cash in both

groups is similar. Parameter estimates for the Delaware x BC Law and Non-Delaware x BC Law interactions are not statistically different from one another. In models (1) and (2) of Panel B, the *p*-values for differences in the coefficients of these variables are 0.8931 and 0.4390, respectively.

3.2.3. Firm reincorporation

The merged CRSP/Compustat database provides the latest state of incorporation for each firm. As a result, our tests are vulnerable to the concern that a firm that reincorporated anytime during our sample period might be assigned to the wrong state when BC laws pass. To address this issue, we collect historical firm incorporation data from several sources. The first is the CST HIST database which we access through CRSP. That database contains header history from the legacy CRSP/Compustat merged database with effective dates that start in 1994. The second source is the COMPHIST database with Compustat header history and effective dates starting around 2007. Our last source is the reincorporation data used by Heron and Lewellen (1998) which spans the 1980-1992 period. Using these sources, we find that about 8.3% (or 823 out of 9,908) of the unique firms we study reincorporate at least once during our sample period. Comparably, Gormley and Matsa (2016) find that about 6% of their sample firms reincorporate to another state.

The reincorporation events we uncover affect 10,116 firm-years in our data. Consequently, in the marginal value of cash regressions reported as models (3) and (4) of Table 4 we analyze all of the firm-years that are not affected by a reincorporation. The results from these regressions are in line with those from our baseline tests: once BC laws are enacted an extra dollar of cash appreciates by 24 to 27 cents. Notably, in untabulated regressions, we analyze firms that move from a state without a BC law to one in which such legislation is already in effect. The estimates indicate that, on average, the marginal value of cash increases by approximately 17 cents for those firms. As

with the evidence from models (3) and (4) in Panel B of Table 4, this result mitigates concerns that firm reincorporation events meaningfully affect our findings.

3.2.4. Strength of business combination laws

A different concern about the passing of BC Laws is that their power is unlikely to be uniform across states. The lack of uniformity results from the fact that, at the time these laws pass in some states, other contemporaneous antitakeover legislation is also promulgated. To account for this issue, Armstrong, Balakrishnan, and Cohen (2012) classify a state BC Law as strong or weak depending on whether it is enacted concurrently with other laws aimed at deterring takeovers. We report this classification in Table 1 by bolding the states with strong BC laws and use it in the marginal value of cash regression reported as models (5) and (6) in Panel B of Table 4.

The results suggest that the increase in the marginal value of cash following the enactment of BC laws documented in our baseline analyses is similar irrespective of whether the legislation is deemed to be weak or strong. Models (5) and (6) of Panel B show that the increase in the value of an extra dollar is about 25 cents to 28 cents where the law is strong. The coefficients for the weak-BC Law x Δ Cash interaction term in those tests are also positive and similar in magnitude.[6]

3.3. Further analysis: Quiet life effects

Our baseline results indicate that, on average, the marginal value of cash improves after BC laws pass. On the one hand, this result may appear counterintuitive given the thesis that, by deterring takeovers, BC laws promote managerial entrenchment, exacerbate agency problems, and

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[6] The strong- and weak-BC Law double interactions are not significantly different. The *p*-values in models (3) and (4) of Panel B for the difference in the coefficients are 0.9164 and 0.7818, respectively.

induce managerial actions that are not in shareholders' best interests. This possibility is in line with the conclusion by Bertrand and Mullainathan (2003) that managers enjoy "the quiet life" after states adopt antitakeover laws. On the other hand, shielding managers from takeovers may encourage some to pursue less myopic investment policies and to focus on long-term growth. This last conjecture would be consistent with the finding by Pinkowitz and Williamson (2007) that in high growth industries (such as computer software and pharmaceuticals), the marginal dollar of cash is worth significantly more than face value.

The above discussion suggests that, while BC laws have an average positive effect on the value of cash, the effect might be different for some firms. To study this conjecture, we perform a series of tests using different proxies to capture quiet life firms. Following Giroud and Mueller (2010) and Qui and Yu (2009), for our first quiet life proxy we use the Herfindahl-Hirschman index (HHI) to identify firms operating in noncompetitive industries. We define a high HHI indicator and set it to one for firms in the top quartile of the HHI distribution for all industries. We create a triple interaction term of the high HHI, the change in cash, and the BC law indicator. This triple interaction is the key independent variable in models (1) and (2) in Table 5 and reflects the difference in the value of cash flowing the passage of a BC law for firms in concentrated industries. These tests are variants of equations (3), and (4) which use excess stock returns as the dependent variable. To conserve space, in Table 5 we only report the coefficients for the variables of interest.

Estimates for the double interaction term [BC Law x Δ Cash] are positive and significant whereas those for the triple interaction term [BC Law x Δ Cash x Quiet Life] are negative and significant in models (1) and (2) of Table 5. The joint effect of these interactions indicates that while the value of an extra dollar of cash increases for the average firm following the ratification

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of BC laws, such increase is absent for firms in highly concentrated industries. This evidence is in line with the hypothesis that firm value is more likely to be curtailed in so-called quiet life firms.[7]

Johnson, Karpoff and Yi (2016) find that as time passes and firms are more removed from their initial public offering (IPO) event, those with more takeover defenses have a significantly lower industry adjusted Tobin's Q. They conclude that as the firm matures, managerial moral hazard costs increase and takeover defenses decrease firm value. Likewise, Pástor and Veronesi (2003) show that market-to-book ratios (M/B) decline as firms get older. Such decline could result from quiet-life agency problems if managers in these firms work less, steer away from risky investment projects, and pursue specialized firm-specific investments to entrench themselves (Shleifer and Vishny, 1989). These studies, which suggests that older firms could be more susceptible to agency problems, are the basis for the analyses in models (3) and (4) in Table 5. In those marginal value of cash regressions we assess the effect of BC laws in mature firms. Thus, for our second quiet life proxy, we define an indicator for mature firms that takes the value of one for firms that are the oldest in their Fama-French 48 industry for every calendar year in our sample and the value of zero otherwise. The mature firm variable is interacted with the change of cash and the BC law indicator. The results show that mature companies do not exhibit an increase in their marginal value of cash.

As an alternative way to proxy for quiet life companies, we identify firms for which the government is the main customer. We conjecture that many such firms would have diminished incentives to pursue long-term investment opportunities because their future cash inflows are less uncertain, opting instead for low-risk, low-return investments. Therefore, as our third quiet life proxy, we use a government-dependent indicator variable that takes the value of one whenever sales to government customers comprise at least 50% of a firm's total revenues. This variable,

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[7] Using the continuous HHI variable (instead of the high HHI indicator) produces results that yield inferences similar to those from the tabulated test. Raising the HHI by one standard deviation lowers the marginal value of cash by $0.18.

along with our BC law indicator and the change in cash, is a component of a triple interaction term used as the key independent variable in the marginal value of cash tests reported as models (5) and (6) in Table 5. The estimates indicate that, after BC laws are enacted, the marginal value of cash increases for the average company (by $0.23 to $0.27). In contrast, the same tests reveal that the value of cash does not increase in firms with substantial government sales since the joint effect (of the interaction terms) is not statistically significant.

A different way to track quiet life companies is by classifying firms according to the growth of their industries. Consequently, for our fourth quiet life proxy, we create an indicator variable and code it to one for firms that operate in one of the 15 low growth industries identified by Pinkowitz and Williamson (2007). Otherwise, the indicator is coded to zero. We interact the low growth indicator, the change in cash, and the BC law indicator and use the triple interaction as the main explanatory variable in the marginal value of cash tests reported as models (7) and (8) in Table 5. As with the other tests in that table, the results in these models continue to show that an extra dollar of cash gains substantial value for the average firm after BC laws are enacted. However, the analyses also show that firms in low growth industries do not achieve such gains.

The evidence in Tables 5 suggests that while on average the value of an extra dollar of cash is higher following the ratification of BC laws, there is a substantial and consistent group of firms that do not see such an increase. We use industry concentration, firm age, government sales, and industry growth as a way to identify quiet life firms. Our tests reveal that, unlike other firms, quiet life companies do not experience an appreciation in their marginal value of cash following the enactment of BC laws.[8] These results, which are consistent with those by Dittmar and Mahrt-Smith

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[8] In untabulated analyses, we obtain similar evidence when we use Tobin's Q to track quiet life companies. We do not tabulate these tests because of the potential mechanical relation between Q (which is based on the market value of a firm's equity) and the excess return dependent variable which we use in our marginal value of cash tests.

(2007) showing that cash is less valuable when agency problems are more severe, are best explained by a "quiet life" agency model in which managers use internal slack to reduce effort and risk to their income stream (Hicks 1935, Bertrand and Mullainathan 2003).

3.3.1. Out of sample analyses and falsification tests

As a way to assess whether our data are unusual, we use the subperiod of our sample that overlaps with the time period examined by Bertrand and Mullainathan (2003). Therefore, we limit the analyses in Table 6 to observations that occur during the 1976-1995 time period. By using this sample period we exclude the passing of BC laws by Iowa and Texas in 1997. Giroud and Mueller (2010) consider the same time period to evaluate whether the passing of BC laws affects operating performance and we construct this sample following their research design. They find that firms experience a significant decline in operating performance after the laws' passage and that the drop gets stronger as industry competition decreases.

Model (1) of Panel A in Table 6 evaluates whether the passing of BC laws affects operating performance. We use return on assets (ROA) as our dependent variable to proxy for operating performance as in Giroud and Mueller (2010). All of our right-hand variables (industry and state profitability, firm size, firm age, and HHI) are similar to theirs including the main explanatory variable which interacts the BC law indicator with the Herfindhal index (HHI). Similar to the evidence in Giroud and Mueller (Table 2, Panel A, model (2), p.318), our estimates in model (1) of Panel A show an inverse association between operating performance and industry concentration after BC laws are enacted. Giroud and Mueller report that a single standard deviation increase in the HHI is associated with a reduction in ROA of five percentage points. In our data, a similar reduction is associated with a drop in ROA of six percentage points (-0.0441 x 0.14).

In model (2), we replace the ROA dependent variable with excess stock returns. In that test, the independent variable of interest is a triple interaction consisting of the BC law indicator, the change in cash, and the Herfindhal index. As with our previous tests, in model (2) of Panel A we find that the marginal value of cash increases after the laws' enactment (by about 14 cents) and that industry concentration extinguishes such increase. A one standard deviation in the HHI (or 0.14) lowers the gains in the value of cash by 11 cents (-0.828 x 0.14 = -0.11).

Even though our research design accounts for several dimensions of unobserved heterogeneity, we are conscientious of the possibility of reverse causality. To mitigate this concern, Roberts and Whited (2013) suggest running "falsification" tests with the implementation of placebo indicator variables around the dates of interest. Panel B of Table 6 presents falsification tests of the effect of BC laws. Specifically, we create dummy variables to falsify the year in which the laws are enacted. Thus, BC Year (-1) is coded as one for the year before the law is actually enacted and BC Year (+1) is coded as one for the year after the laws pass. The actual year in which the law is promulgated is BC Year (0). The falsification tests are important because they mitigate both anticipation and reverse causality concerns. In the spirit of Giroud and Mueller (2010), model (1) of Panel B uses ROA as the dependent variable and that regression produces results similar to theirs. Specifically, we find an inverse association between industry concentration and operating performance starting at the time of the passage of BC laws but no association beforehand.

Model (4) of Panel B repeats the falsification procedure in the context of the marginal value of cash during the Bertrand and Mullainathan (2003) time period. Model (5) presents the same test for our full sample and includes firm, industry by year, and state by year fixed effects to control for unobserved heterogeneity. In both specifications, the results show that the association between the value of cash and industry concentration starts when BC laws pass and continue every year

thereafter. Importantly, neither model shows that such association exists prior to the laws' passage. This evidence is consistent with a causal interpretation of our results.

3.4. Further analysis: Bonding hypothesis

Johnson, Karpoff, and Yi (2015) argue that by bonding its implicit commitments with major business counterparties, a young firm could obtain advantageous contracting terms that increase its value. They conjecture that establishing personal connections with these counterparties leads to the undertaking of profitable collaboration that might not otherwise occur without such relationships. Provisions that lower takeover probabilities can help with this endeavor by reducing the likelihood that a firm will act opportunistically toward large customers and other key stakeholders, reassuring them to invest in the business relationship.[9] Johnson et al. (2015) refer to this as the bonding hypothesis of takeover defenses and empirically test it in a sample of IPO firms. Their results, which support this hypothesis, show that IPO firms' valuation and subsequent operating performance are positively related to their use of takeover defenses when they have key business relationships such as an active strategic alliance or a major customer.

Based on the evidence in Johnson et al. (2015), in Table 7 we run marginal value of cash regressions to test the bonding hypothesis by using [BC Law x Δ Cash x Bonding] as the key independent variable. In models (1) through (6) the bonding proxy is an indicator that is set to one if, during the calendar year, a sample firm is younger than the median firm in its Fama-French 48 industry and has a major industrial customer and set to zero otherwise. The estimates in models (1) through (4) show that, after BC laws pass, cash appreciates for firms with a major industrial customer. These results support the bonding hypothesis. However, according to the estimates for

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[9] For example, takeover protections mitigate the possibility that new managers will rescind the implicit commitments made by their predecessors to large customers and other major stakeholders (Shleifer and Summers, 1988).

[BC Law x Δ Cash] + [BC Law x Δ Cash x Bonding], the appreciation in the marginal value of cash loses statistical significance in model (5) and is totally absent in model (6) when the major customer (i.e., more than 50% of the firm's sales) is the government. Since the government is usually seen as a stable customer and one unlikely to make specific investments in the business relationship, we would not predict that the bonding hypothesis would hold in firms where most of the sales are to the government. Moreover, as noted earlier, firms with high government sales are perhaps less inclined to pursue long-term investment opportunities because their future cash inflows are less uncertain.

To test the bonding hypothesis a different way, in every calendar year, we define a dummy variable that is set to one for firms younger than the median firm in their respective Fama-French 48 industry with an active strategic alliance. The tests in models (7) and (8) of Table 7, which use that variable as our bonding proxy, also show that the marginal value of cash increases for bonding firms after BC laws pass.[10]

3.5. Alternative antitakeover protection: Poison pills

It is possible that BC laws are inherently different from other antitakeover devices such as poison pills. BC laws represent an act of the state government (legislature and governor) that signals the value the state places on companies incorporated there. Poison pill provisions, on the other hand, are implemented by management / the board and may be more assailable by outside pressure to negotiate with the bidder. A state business combination law effectively certifies the

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[10] We identify strategic alliances from the Securities Data Company (SDC) Platinum Joint Ventures/Alliances file. A strategic alliance is a relation between two or more parties to pursue collaboration to achieve a synergy in which the benefits are greater than those from individual efforts. In contrast with many joint ventures, strategic alliances do not form an independent entity (although in some alliances one partner takes an equity stake in the other). We identify corporate customers from the COMPUSTAT customer segment database. Under SFAS 14 and 131, firms must report "material" customers which comprise at least 10% of total firm revenues.

target board's just-say-no approach to a takeover bid. Another conjecture is that the implications of antitakeover protection for the valuation of cash has changed over time as internal governance has strengthened. A different possibility is that both poison pills and BC laws deter takeovers, but their effect (on the marginal value of cash) changes according to certain firm characteristics.

In the context of this study, the above conjectures suggest that the effect of BC laws on the value of an extra dollar of cash might be unique and not necessarily the same as the effect poison pills may have on cash. To study this possibility, in Panel A of Table 8 we run marginal value of cash regressions using different interaction terms to evaluate the quiet life hypothesis in firms with poison pill coverage. For this purpose, we define a Poison Pill indicator (PP Law) that is equal to one whenever a firm is incorporated in a state that passes a law establishing the right of incorporated firms to deploy a poison pill. The indicator is equal to zero otherwise.

Models (1) and (2) of Panel A in Table 8, use the high HHI to track industry concentration for firms incorporated in states with pill laws. In (3) and (4), we evaluate the change in cash for mature firms with poison pills. Models (5) and (6) split firms with a pill in relation to their sales to the government and (7) and (8) reports tests that classify pill firms according to the growth of their industries. Consistent with our baseline results, all models in Panel A indicate that, on average, the value of cash is higher (by 18 cents to 25 cents) when poison pills are ratified. Importantly, the results in Panel A also reveal that, when pills are present, the increase in the marginal value of cash is absent for firms in concentrated industries. Likewise, models (3) and (4) show that for pill-covered firms the value increase of an extra dollar of cash is missing in mature firms. We also find that the increases in the value of an additional dollar of cash disappear in models (5) and (6) (for pill-covered firms with high sales to the government) and are considerably reduced in models (7) and (8) (for firms with poison pill protection operating in low growth industries).

Together with our previous results, those in Panel A indicate that irrespective of the manner in which antitakeover protection is measured, such protection increases the marginal value of cash for the average company. However, our tests show that quiet life companies do not realize such increases. Consequently, our results appear to be most consistent with "quiet life" models of free cash flow, in which managers use cash on hand to simplify their jobs by exerting less effort (Hicks 1935, Bertrand and Mullainathan 2003).

The evidence in Panel A of Table 8 indicates that internal slack does not appreciate in quiet-life firms once poison pills are ratified. In contrast, after such ratifications occur, the results in Panel B of Table 8 show that the value of an extra dollar rises in firms with key business ties with other companies. As with the bonding results in Table 7, those in Panel B (which use the same bonding proxies) suggest that takeover defenses can have productive consequences for young firms that can credibly commit to a business relation with a major counterparty.

3.6. Cash regimes

Halford, McConnell, Sibilkov, and Zaiats (2016) conclude that the cash distribution regime and the cash raising regime should be identified (ex post) when analyzing the value of an extra dollar of cash. In unreported tests, we follow this recommendation. As in Halford et al., we define a cash distributing indicator that is set to one for firms that distribute cash to shareholders but do not service or issue debt. This variable together with the BC Law indicator and the ΔCash form a triple interaction term which serves as the key explanatory variable in several marginal value of cash regressions. The right-hand variables are similar to those in Faulkender and Wang (2006) except for the net finance variable which is separated into its four components as suggested by Halford et al. Similar to the baseline results, the double interaction term [BC Law x Δ Cash]

exhibits positive and significant coefficients. But the estimates for the joint effect of the interaction terms [BC Law x Δ Cash] + [BC Law x Δ Cash x Distributing] are -0.161 (*p*-value = 0.009) in a regression without control variables and -0.025, (*p*-value = 0.622) when the controls are included. We obtain similar results when we replace the BC law indicator with the Poison Pill indicator. These results, which indicate that cash regimes matter, resemble those from our quiet life tests. Interestingly, we find that the Pearson correlation between the (cash) Distributing indicator and our mature firm indicator is 27.3% (*p*-value = 0.000). This suggests that the Distributing regime variable is likely capturing agency problems that, as noted by Johnson, Karpoff, and Yi (2016), are more severe as firms age.

4. Conclusions

There is considerable debate about whether business combination laws represent a significant change to the takeover environment for covered firms, especially in the context of existing or potential poison pills. We use shareholders' valuation of internal slack as a mechanism to assess whether and how these antitakeover devices matter and find a surprising result: the value of cash increases following the adoption of a business combination law. Further, the effect is not anomalous—we find a similar increase following the adoption of poison pill certification laws. To understand the finding, we show that the effect is present in firms with an active alliance and/or a major industrial customer but absent for firms that may be subject to quiet-life type agency problems. Overall, our results support the positive effect that takeover protection has on the ability of managers to deploy it effectively in competitive and growing industries in which bonding commercial relations is important, while recognizing the substantial potential for misuse in more mature firms that may fall prey to quiet-life problems.

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Table 1
Business Combination and Poison Pill Legislation

This table presents the dates that the business combination laws (BC Law) and poison pill laws (PP Law) in our sample were adopted. Data on the adoption of these laws are obtained from Bertrand and Mullainathan (2003) and Karpoff and Wittry (2015). The number of unique firms in our sample that are incorporated in each state are indicated below. States in bold indicate that the business combination law is considered "strong" by Armstrong, Balakrishnan, and Cohen (2012) as it contains multiple anti-takeover provisions.

State	Date BC Law Adopted	Date PP Law Adopted	# Firms Incorporated in the State	State	Date BC Law Adopted	Date PP Law Adopted	# Firms Incorporated in the State
Alabama			9	Montana			4
Alaska			1	Nebraska	4/8/1988		6
Arizona	7/22/1987		26	**Nevada**	**6/25/1991**	**6/21/1989**	**304**
Arkansas			5	New Hampshire			3
California			355	New Jersey	8/5/1986	6/29/1989	167
Colorado		3/31/1989	179	New Mexico			10
Connecticut	6/7/1988	6/26/2003	25	New York	12/16/1985	12/21/1988	389
Delaware	**2/2/1988**		**5,923**	North Carolina		6/8/1989	72
District of Columbia			3	North Dakota			3
Florida		6/27/1989	231	**Ohio**	**4/11/1990**	**11/22/1986**	**164**
Georgia	3/3/1988	4/7/1988	120	Oklahoma	4/9/1991		46
Hawaii		6/17/1988	6	Oregon	4/5/1991	3/5/1989	67
Idaho	**3/22/1988**	**3/22/1988**	**7**	**Pennsylvania**	**3/23/1988**	**3/23/1988**	**189**
Illinois	**8/2/1989**	**8/2/1989**	**36**	**Rhode Island**	**7/3/1990**	**7/3/1990**	**11**
Indiana	**3/5/1986**	**3/5/1986**	**79**	South Carolina	4/22/1988	6/9/1998	16
Iowa	5/2/1997	6/1/1989	26	**South Dakota**	**2/20/1990**	**2/20/1990**	**4**
Kansas	4/10/1989		24	**Tennessee**	**3/11/1988**	**5/29/1989**	**61**
Kentucky	3/28/1986	7/15/1988	10	Texas	5/28/1997		219
Louisiana			26	Utah		3/13/1989	77
Maine	4/6/1988	4/8/2002	10	Vermont			4
Maryland	**4/11/1989**	**5/13/1999**	**101**	Virginia	3/31/1988	4/2/1990	98
Massachusetts	**7/18/1989**	**7/18/1989**	**200**	Washington	8/11/1987	3/23/1998	93
Michigan	5/24/1989	7/23/2001	99	West Virginia			4
Minnesota	6/25/1987		258	**Wisconsin**	**9/17/1987**	**9/17/1987**	**74**
Mississippi			5	Wyoming	3/11/1989		10
Missouri	**6/23/1986**		**49**	Total Number of Firms			9,908

Table 2
Sample Description

Panel A reports the summary statistics for the 89,958 firm-year-observations from the universe of U.S. firms, excluding financials (SIC 4900-4999), utilities (SIC 6000-6999), and public administration firms (SIC 9000-9999), in the merged CRSP-COMPUSTAT database with complete data from 1972 to 2010. All variables are defined in Appendix A. Panel B reports the temporal distribution of our sample observations, the number of firms incorporated in a law with an active BC Law, and the percentage of firms in the sample year affected by a BC Law. For newly passed BC Laws, we require that each firm has a minimum of six months of returns under the new regime for the BC law to be classified as effective for that fiscal year. Panel C reports the Fama and French (1997) industry composition of our sample firms which are incorporated in a state with an active BC Law. Industries in bold indicate that the industry is classified as "low growth" following Pinkowitz and Williamson (2007).

	N	Mean	Std. Dev	Q1	Median	Q3
ROA	89,958	0.08	0.31	0.05	0.12	0.18
Excess Stock Return	89,958	0.01	0.59	-0.34	-0.08	0.21
Cash	89,958	0.19	0.26	0.03	0.10	0.23
Earnings	89,958	0.07	0.27	0.01	0.08	0.17
Net Assets	89,958	1,450.20	4,395.80	38.08	160.82	743.72
Market Value of Equity	89,958	1,329.10	4,281.20	31.69	128.64	646.36
R&D	89,958	0.03	0.07	0.00	0.00	0.04
Interest	89,958	0.07	0.13	0.01	0.02	0.07
Dividends	89,958	0.01	0.02	0.00	0.00	0.02
Leverage	89,958	0.27	0.25	0.05	0.21	0.44
New Finance	89,958	0.04	0.27	-0.04	0.00	0.07
HHI	89,958	0.17	0.14	0.08	0.14	0.21
% Gov't Sales	89,958	0.03	0.14	0.00	0.00	0.00
Alliance	89,958	0.28	0.45	0.00	0.00	1.00
Major Industrial Customer	89,958	0.48	0.50	0.00	0.00	1.00

Panel B: Temporal Distribution

Year	N	BC Law Effective	% of Firms Affected by BC Law in Year
1972	785	0	0.00%
1973	948	0	0.00%
1974	1,219	0	0.00%
1975	1,416	0	0.00%
1976	1,558	0	0.00%
1977	1,596	0	0.00%
1978	1,623	0	0.00%
1979	1,647	0	0.00%
1980	1,697	0	0.00%
1981	1,750	0	0.00%
1982	1,830	0	0.00%
1983	2,015	0	0.00%
1984	2,162	0	0.00%
1985	2,399	0	0.00%
1986	2,522	161	6.38%
1987	2,625	329	12.53%
1988	2,773	1,536	55.39%
1989	2,839	2,127	74.92%
1990	2,872	2,313	80.54%
1991	2,892	2,432	84.09%
1992	2,903	2,479	85.39%
1993	2,957	2,537	85.80%
1994	3,105	2,675	86.15%
1995	3,200	2,780	86.88%
1996	3,221	2,792	86.68%
1997	3,185	2,779	87.25%
1998	3,186	2,810	88.20%
1999	3,007	2,661	88.49%
2000	2,758	2,441	88.51%
2001	2,555	2,272	88.92%
2002	2,566	2,294	89.40%
2003	2,446	2,187	89.41%
2004	2,354	2,097	89.08%
2005	2,290	2,051	89.56%
2006	2,249	2,022	89.91%
2007	2,228	2,000	89.77%
2008	2,239	2,025	90.44%
2009	2,208	1,998	90.49%
2010	2,133	1,942	91.05%
Total	89,958	53,740	

Panel C: Industry Distribution for BC Law Firms (Firms Not Covered by BC Laws Omitted)

	FF48 Industry	N	% of BC Law Firm-Years
1	**Agriculture**	**191**	**0.36%**
2	**Food Products**	**1,255**	**2.34%**
3	Candy & Soda	121	0.23%
4	**Beer & Liquor**	**182**	**0.34%**
5	Tobacco Products	92	0.17%
6	Recreation	604	1.12%
7	**Entertainment**	**1,145**	**2.13%**
8	Printing and Publishing	630	1.17%
9	**Consumer Goods**	**1,265**	**2.35%**
10	Apparel	949	1.77%
11	Healthcare	1,255	2.34%
12	Medical Equipment	2,084	3.88%
13	Pharmaceutical Products	2,931	5.45%
14	Chemicals	1,334	2.48%
15	**Rubber and Plastic Products**	**735**	**1.37%**
16	Textiles	424	0.79%
17	**Construction Materials**	**1,406**	**2.62%**
18	Construction	860	1.60%
19	Steel Works Etc.	1,071	1.99%
20	**Fabricated Products**	**351**	**0.65%**
21	**Machinery**	**2,480**	**4.61%**
22	Electrical Equipment	1,017	1.89%
23	Automobiles and Trucks	992	1.85%
24	Aircraft	360	0.67%
25	**Shipbuilding, Railroad Equipment**	**120**	**0.22%**
26	**Defense**	**144**	**0.27%**
27	Precious Metals	212	0.39%
28	**Non-Metallic and Industrial Metal Mining**	**190**	**0.35%**
29	**Coal**	**101**	**0.19%**
30	**Petroleum and Natural Gas**	**2,587**	**4.81%**
32	**Communication**	**1,577**	**2.93%**
33	Personal Services	698	1.30%
34	Business Services	5,965	11.10%
35	Computers	2,598	4.83%
36	Electronic Equipment	3,725	6.93%
37	Measuring and Control Equipment	1,531	2.85%
38	Business Supplies	1,026	1.91%
39	Shipping Containers	223	0.41%
40	Transportation	1,654	3.08%
41	Wholesale	2,687	5.00%
42	Retail	3,311	6.16%
43	Restaurants, Hotels, Motels	1,405	2.61%
48	Almost Nothing	252	0.47%
Total		53,740	100.00%

Table 3

Marginal Value of Cash

This table reports regressions of the effect of BC Laws on the marginal value of cash for the 89,958 firm-year-observations of U.S. firms, excluding financials (SIC 4900-4999), utilities (SIC 6000-6999), and public administration firms (SIC 9000-9999), in the merged CRSP-COMPUSTAT database with complete data from 1972 to 2010. The dependent variable in each model is the Excess Stock Return. Models (1) and (2), which replicate Faulkender and Wang (2006), are run on the 1972-2001 sample observations from their period of study. All other regressions use the full 1972-2010 sample period. Models (3) through (5) include firm, HQ state by year, and 4-digit SIC industry by year fixed effects. Models (7) and (8) run the Faulkender and Wang (2006) models in our sample period while models (9) and (10) include firm fixed effects as in Giroud and Mueller (2010). All variables are defined in Appendix A. P-values based on robust clustered standard errors (at either the firm or state of incorporation level) are reported below the parameter estimates. The symbols *,**, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Excess Stock Return									
	1972-2001		1972-2010							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
BC Law x Δ Cash			0.220***	0.257***	0.198***	0.236***	0.325***	0.267***	0.288***	0.235***
			(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
BC Law			0.0007	-0.0089	-0.0084	0.0116***	0.0017	0.00281	-0.006	-0.004
			(0.959)	(0.623)	(0.624)	(0.001)	(0.630)	(0.414)	(0.294)	(0.453)
Δ Cash	0.766***	1.372***	0.629***	0.745***	1.312***	0.708***	0.664***	1.298***	0.747***	1.334***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Δ Earnings	0.419***	0.420***		0.390***	0.389***		0.445***	0.445***	0.410***	0.410***
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Δ Net Assets	0.202***	0.208***		0.156***	0.162***		0.188***	0.196***	0.153***	0.159***
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Δ R&D	1.113***	1.046***		0.733***	0.703***		0.995***	0.921***	0.780***	0.747***
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Δ Interest	-1.320***	-1.244***		-0.695***	-0.645***		-1.304***	-1.237***	-0.788***	-0.735***
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Δ Dividends	3.008***	2.928***		1.863***	1.811***		2.918***	2.855***	1.592***	1.538***
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Cash (t-1)	0.342***	0.319***		0.734***	0.716***		0.371***	0.350***	0.724***	0.703***
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.542***	-0.530***		-1.020***	-1.003***		-0.493***	-0.481***	-0.979***	-0.961***
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
New Finance	0.0498***	0.0282**		0.0580***	0.0374*		0.0207	-0.00115	0.051***	0.030**
	(0.000)	(0.038)		(0.010)	(0.058)		(0.105)	(0.927)	(0.000)	(0.020)
Leverage x Δ Cash		-1.031***			-0.955***			-1.060***		-0.959***
		(0.000)			(0.000)			(0.000)		(0.000)
Cash (t-1) x Δ Cash		-0.444***			-0.389***			-0.434***		-0.422***
		(0.000)			(0.000)			(0.000)		(0.000)
Firm FE	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes
HQ State-Year FE	No	No	Yes	Yes	Yes	No	No	No	No	No
Industry-Year FE	No	No	Yes	Yes	Yes	No	No	No	No	No
Clustering	Firm Level		State of Incorporation Level				Firm Level			
Adjusted R-squared	0.2000	0.2120	0.116	0.285	0.294	0.049	0.200	0.212	0.237	0.247
N	69,249	69,249	89,958	89,958	89,958	89,958	89,958	89,958	89,958	89,958

Table 4

Robustness Tests

This table reports robustness tests for the regressions of the effect of BC Laws on the marginal value of cash for U.S. firms, excluding financials (SIC 4900-4999), utilities (SIC 6000-6999), and public administration firms (SIC 9000-9999), in the merged CRSP-COMPUSTAT database with complete data. In Panel A, we control for the other contemporaneous state anti-takeover laws passed identified by Karpoff and Wittry (2015). The dependent variable in each model is the Excess Stock Return. Models (1) and (2) uses our full 1972-2010 sample period while Models (3) and (4) is run on the 1983-2010 sample years which follow the 1982 EDGAR v. MITE Corp. SCOTUS decision which overturned the so called first generation state anti-takeover laws. In Panel B, we bifurcate the BC Law indicator by whether the sample firm is incorporated in Delaware or incorporated in a state besides Delaware [Models (1) and (2)]. In Models (3) and (4) we exclude those firms which reincorporate at some point in their histories during our sample period. Finally, we bifurcate the BC Law indicator by whether the law is considered "strong" or "weak" [Models (5) and (6)]. We follow Armstrong, Balakrishnan, and Cohen (2012) and classify a BC Law as "strong" if it is passed with multiple contemporaneous anti-takeover provisions. Otherwise the BC Law is considered "weak." This classification is detailed in Table 1. Additional Controls indicates that the model also contains Δ Earnings, Δ Net Assets, Δ R&D, Δ Interest, Δ Dividends, Cash (t-1), Leverage, and New Finance, but the estimates are omitted to conserve space. Models (1), (3), and (5) include firm, HQ state by year, and 4-digit SIC industry by year fixed effects while Models (2), (4), and (6) include firm fixed effects. All variables are defined in Appendix A. P-values based on robust clustered standard errors (at either the firm or state of incorporation level) are reported below the parameter estimates. The symbols *,**,*** are used to indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Karpoff and Wittry (2015) Controls

	Excess Stock Return			
	1972-2010		1983-2010	
	(1)	(2)	(3)	(4)
BC Law x Δ Cash	0.256***	0.286***	0.189**	0.200***
	(0.000)	(0.000)	(0.045)	(0.000)
BC Law	-0.010	-0.005	-0.023	-0.003
	(0.555)	(0.477)	(0.247)	(0.754)
BC Law Motivating Firm	-0.010	0.016	-0.007	-0.017
	(0.748)	(0.615)	(0.824)	(0.661)
CSA Law	0.013	-0.013	0.031	-0.004
	(0.396)	(0.458)	(0.220)	(0.842)
CTS Corp v. Dynamics Corp	-0.019	0.018	-0.039	0.028
	(0.209)	(0.302)	(0.130)	(0.170)
Poison Pill Law	0.008	0.015	0.005	0.019*
	(0.660)	(0.181)	(0.780)	(0.105)
Moran v. Household Intl.	-0.014	-0.038***	-0.039***	0.001
	(0.263)	(0.000)	(0.002)	(0.917)
DD Law	0.000	-0.022*	0.010	-0.006
	(0.985)	(0.089)	(0.579)	(0.655)
FP Law	0.007	-0.007	-0.016	-0.017
	(0.619)	(0.553)	(0.292)	(0.263)
First Gen ATP Law	-0.068***	-0.049***		
	(0.000)	(0.000)		
Δ Cash	0.746***	0.750***	0.842***	0.865***
	(0.000)	(0.000)	(0.000)	(0.000)
Additional Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
HQ State-Year FE	Yes	No	Yes	No
Industry-Year FE	Yes	No	Yes	No
Clustering	State of Incorporation Level	Firm Level	State of Incorporation Level	Firm Level
Adjusted R-squared	0.285	0.237	0.284	0.239
N	89,958	89,958	89,958	89,958

Panel B: Cash Value by Delaware Incorporation, Excluding Reincorporation events, and BC Law Strength

	Excess Stock Return					
	Delaware Firms		No Reincorporation Events		BC Law Strength	
	(1)	(2)	(3)	(4)	(5)	(6)
Delaware BC Law x Δ Cash	0.255***	0.275***				
	(0.000)	(0.000)				
Non-Delaware BC Law x Δ Cash	0.262***	0.319***				
	(0.001)	(0.000)				
Delaware BC Law	-0.019	-0.016**				
	(0.204)	(0.037)				
Non-Delaware BC Law	0.003	0.007				
	(0.861)	(0.360)				
BC Law x Δ Cash			0.238***	0.274***		
			(0.000)	(0.000)		
BC Law			-0.002	-0.004		
			(0.906)	(0.451)		
Strong BC Law x Δ Cash					0.253***	0.284***
					(0.000)	(0.000)
Weak BC Law x Δ Cash					0.261***	0.302***
					(0.010)	(0.000)
Strong BC Law					-0.011	-0.009
					(0.581)	(0.147)
Weak BC Law					0.003	0.010
					(0.835)	(0.343)
Δ Cash	0.745***	0.746***	0.743***	0.749***	0.742***	0.743***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Additional Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
HQ State-Year FE	Yes	No	Yes	No	Yes	No
Industry-Year FE	Yes	No	Yes	No	Yes	No
Clustering	State of Incorporation Level	Firm Level	State of Incorporation Level	Firm Level	State of Incorporation Level	Firm Level
Adjusted R-squared	0.285	0.236	0.286	0.237	0.284	0.236
N	89,958	89,958	79,842	79,842	89,958	89,958

Table 5

Cash Value and the Quiet Life Hypothesis

This table reports regressions of the effect of BC Laws on the marginal value of cash for firms in concentrated industries, mature firms, for government dependent firms, or those in low growth industries for the full sample of 89,958 firm-year-observations of U.S. firms, excluding financials (SIC 4900-4999), utilities (SIC 6000-6999), and public administration firms (SIC 9000-9999), in the merged CRSP-COMPUSTAT database with complete data from 1972 to 2010. The dependent variable in each model is the Excess Stock Return. Quiet Life Proxy refers to an indicator of High HHI, Mature Firm, High Gov't Sales, or Low Growth Industry. Additional Controls indicates that the model also contains Δ Earnings, Δ Net Assets, Δ R&D, Δ Interest, Δ Dividends, Cash (t-1), Leverage, and New Finance, but the estimates are omitted to conserve space. Each model includes firm, HQ state by year, and 4-digit SIC industry by year fixed effects. All variables are defined in Appendix A. P-values based on robust clustered standard errors at the state of incorporation level are reported below the parameter estimates. The joint effect of the double and triple interaction terms is reported in the last line of estimates with the p-value for statistical significance as indicated. The symbols *,**,*** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Excess Stock Return							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BC Law x Δ Cash x Quiet Life	-0.241**	-0.286**	-0.241	-0.409**	-0.320*	-0.390*	-0.143	-0.242**
	(0.025)	(0.017)	(0.374)	(0.045)	(0.094)	(0.058)	(0.269)	(0.033)
BC Law x Δ Cash	0.280***	0.327***	0.223***	0.263***	0.232***	0.271***	0.245***	0.310***
	(0.002)	(0.000)	(0.003)	(0.000)	(0.002)	(0.000)	(0.014)	(0.001)
BC Law x Quiet Life	0.035*	0.018	-0.010	-0.023	-0.072**	-0.048	-0.004	-0.011
	(0.069)	(0.244)	(0.678)	(0.413)	(0.053)	(0.249)	(0.890)	(0.655)
Quiet Life x Δ Cash	-0.109	-0.065	-0.175	-0.126**	0.066	0.085	-0.159	-0.089
	(0.275)	(0.523)	(0.111)	(0.050)	(0.710)	(0.615)	(0.123)	(0.288)
BC Law	-0.008	-0.014	0.001	-0.008	0.003	-0.007	0.001	-0.006
	(0.598)	(0.477)	(0.931)	(0.669)	(0.831)	(0.694)	(0.936)	(0.783)
Quiet Life	-0.030*	-0.006	0.070***	0.061**	0.084***	0.055***	2.722	-0.492
	(0.088)	(0.756)	(0.009)	(0.016)	(0.000)	(0.008)	(1.000)	(1.000)
Δ Cash	0.654***	0.761***	0.633***	0.748***	0.626***	0.742***	0.676***	0.772***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
[BC Law x Δ Cash] + [BC Law x Δ Cash x Quiet Life]	0.039	0.041	-0.018	-0.146	-0.088	-0.119	0.102	0.068
	(0.461)	(0.452)	(0.935)	(0.366)	(0.539)	(0.445)	(0.115)	(0.227)
Additional Controls	No	Yes	No	Yes	No	Yes	No	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HQ State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quiet Life Proxy	High HHI		Mature Firm		High Government Sales		Low Growth Industry	
Adjusted R-squared	0.116	0.285	0.117	0.286	0.116	0.285	0.117	0.286
N	89,958	89,958	89,958	89,958	89,958	89,958	89,958	89,958

Table 6

Out of Sample and Falsification Tests

This table reports regressions out-of-sample tests of the effect of BC Laws on the marginal value of cash for 1976-1995 sample used by Bertrand and Mullainathan (2003) and Giroud and Mueller (2010), with the exception of model 5 which is run on our full sample. The dependent variable in models (1) and (3) is ROA and the dependent variable in models (2), (4), and (5) is the Excess Stock Return. Ind-Year Avg DV and State-Year Avg DV are the industry-year and state-year averages of the dependent variable in the model. Firm Size is the natural log of assets and Firm Age is the natural log of number of years the firm is listed on CRSP or COMPUSTAT. BC Year (-1) indicates the firm is incorporated in a state that will pass a BC Law one year hence. BC Year (0) indicates the firm is incorporated in a state that will passed a BC Law in the fiscal year. BC Year (1) and BC Year (2+) indicates the firm is incorporated in a state that passed a BC Law in the prior fiscal year or two or more years prior, respectively. Additional Controls indicates that the model also contains the other control variables in models (1) and (2), but the estimates are omitted to conserve space. Models (1)-(4) include firm and year fixed effects, while model (5) implements firm, industry by year, and HQ state by year fixed effects. All other variables are defined in Appendix A. P-values based on robust clustered standard errors (at the state of incorporation level) are reported below the parameter estimates. We use *,**,*** to indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Different Time Period			Panel B: Falsification Tests			
	ROA	Excess Stock Return		ROA	Excess Stock Return	
	(1)	(2)		(3)	(4)	(5)
BC Law	-0.00291	0.0113	BC Year (-1)	0.0040	-0.0075	0.0106
	(0.581)	(0.203)		(0.525)	(0.511)	(0.322)
BC Law x HHI	-0.0441***		BC Year (0)	-0.0026	0.0105	-0.0112
	(0.000)			(0.702)	(0.275)	(0.468)
BC Law x Δ Cash x HHI		-0.828***	BC Year (1)	-0.0081	0.0020	-0.0067
		(0.000)		(0.233)	(0.891)	(0.578)
BC Law x Δ Cash		0.141**	BC Year (2+)	-0.0020	0.0096	-0.0005
		(0.016)		(0.810)	(0.493)	(0.978)
Ind-Year Avg DV	0.000205*	0.339***	BC Year (-1) x HHI	-0.0317		
	(0.094)	(0.000)		(0.272)		
State-Year Avg DV	0.00313**	0.364***	BC Year (0) x HHI	-0.0451*		
	(0.028)	(0.000)		(0.057)		
Firm Size	0.0920***	-0.0508***	BC Year (1) x HHI	-0.0252*		
	(0.000)	(0.000)		(0.072)		
Firm Size Squared	-0.00768***	-0.00415***	BC Year (2+) x HHI	-0.0553***		
	(0.000)	(0.000)		(0.000)		
Firm Age	-0.0522***	-0.0492***	BC Year (-1) x Δ Cash x HHI		-0.0969	-0.246
	(0.000)	(0.002)			(0.732)	(0.362)
HHI	0.0317	-0.00859	BC Year (0) x Δ Cash x HHI		-0.622***	-2.159***
	(0.162)	(0.851)			(0.000)	(0.000)
Δ Cash		0.488***	BC Year (1) x Δ Cash x HHI		-1.235***	-2.622***
		(0.000)			(0.000)	(0.000)
Constant	-0.00421	0.431***	BC Year (2+) x Δ Cash x HHI		-0.736***	-2.170***
	(0.793)	(0.000)			(0.000)	(0.000)
			Δ Cash		0.490***	0.491***
					(0.000)	(0.000)
Additional Controls	No	No	Additional Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Year FE	Yes	Yes	No
HQ State-Year FE	No	No	HQ State-Year FE	No	No	Yes
Industry-Year FE	No	No	Industry-Year FE	No	No	Yes
Sample	1976-1995		Sample	1976-1995		1972-2010
Adjusted R-squared	0.064	0.065	Adjusted R-squared	0.064	0.065	0.382
Observations	88,642	53,100	Observations	88,642	53,100	89,436

Table 7

Cash Value and the Bonding Hypothesis

This table reports regressions of the effect of BC Laws on the marginal value of cash for firms with major interfirm relationships for the full sample of 89,958 firm-year-observations of U.S. firms, excluding financials (SIC 4900-4999), utilities (SIC 6000-6999), and public administration firms (SIC 9000-9999), in the merged CRSP-COMPUSTAT database with complete data from 1972 to 2010. The dependent variable in each model is the Excess Stock Return. Bonding Proxy refers to an indicator of whether the firm has a major customer or if they maintain an active strategic alliance. Additional Controls indicates that the model also contains Δ Earnings, Δ Net Assets, Δ R&D, Δ Interest, Δ Dividends, Cash (t-1), Leverage, and New Finance, but the estimates are omitted to conserve space. Each model includes firm, HQ state by year, and 4-digit SIC industry by year fixed effects. All variables are defined in Appendix A. P-values based on robust clustered standard errors at the state of incorporation level are reported below the parameter estimates. The joint effect of the double and triple interaction terms is reported in the last line of estimates with the p-value for statistical significance as indicated. The symbols *,**,*** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Excess Stock Return							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BC Law x Δ Cash x Bonding	0.333***	0.284***	0.357***	0.253***	0.354	0.027	0.935**	1.173**
	(0.000)	(0.002)	(0.000)	(0.001)	(0.322)	(0.945)	(0.041)	(0.030)
BC Law x Δ Cash	0.175***	0.219***	0.174***	0.223***	0.219***	0.257***	0.208***	0.242***
	(0.008)	(0.001)	(0.011)	(0.001)	(0.002)	(0.000)	(0.003)	(0.000)
BC Law x Bonding	-0.040	-0.030	-0.054	-0.039*	-0.058	-0.016	0.175	0.136
	(0.223)	(0.203)	(0.108)	(0.081)	(0.342)	(0.812)	(0.339)	(0.441)
Bonding x Δ Cash	0.525***	0.403***	0.398***	0.331***	0.219	0.347	-0.405	-0.504
	(0.000)	(0.000)	(0.000)	(0.000)	(0.539)	(0.358)	(0.357)	(0.333)
BC Law	0.008	-0.003	0.013	0.001	0.001	-0.009	0.000	-0.009
	(0.504)	(0.837)	(0.246)	(0.972)	(0.940)	(0.629)	(0.995)	(0.601)
Bonding	-0.130***	-0.143***	-0.122***	-0.144***	-0.013	-0.032	-0.145	-0.132
	(0.000)	(0.000)	(0.000)	(0.000)	(0.725)	(0.386)	(0.438)	(0.464)
Δ Cash	0.592***	0.705***	0.586***	0.693***	0.628***	0.743***	0.629***	0.746***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
[BC Law x Δ Cash]	0.508***	0.503***	0.531***	0.476***	0.573*	0.284	1.143***	1.415***
+ [BC Law x Δ Cash x Bonding]	(0.000)	(0.000)	(0.000)	(0.000)	(0.084)	(0.409)	(0.007)	(0.005)
Additional Controls	No	Yes	No	Yes	No	Yes	No	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HQ State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bonding Proxy	Major Industrial Customer (No Gov't Cust)		Any Major Customer (Incl. Gov't Customer)		Major Industrial and Govt > 50% Customer		Alliance	
Adjusted R-squared	0.125	0.293	0.126	0.295	0.116	0.285	0.118	0.287
N	89,958	89,958	89,958	89,958	89,958	89,958	89,958	89,958

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Table 8

Marginal Value of Cash and Poison Pills

This table reports regressions of the effect of PP Laws on the marginal value of cash for quiet life and bonded firms for the full sample of 89,958 firm-year-observations of U.S. firms, excluding financials (SIC 4900-4999), utilities (SIC 6000-6999), and public administration firms (SIC 9000-9999), in the merged CRSP-COMPUSTAT database with complete data from 1972 to 2010. The dependent variable in each model is the Excess Stock Return. In Panel A, the Quiet Life Proxy refers to an indicator of High HHI, Mature firms, High Gov't Sales, or Low Growth Industry. In Panel B, the Bonding Proxy refers to an indicator of whether the firm maintains an active strategic alliance, if they have a major industrial customer but no government customers, if they have any major customer (including sales to government customers), or if they have a major industrial customer and a government customer comprising 50% of firm sales (i.e., the "quiet life" government customer). Additional Controls indicates that the model also contains Δ Earnings, Δ Net Assets, Δ R&D, Δ Interest, Δ Dividends, Cash (t-1), Leverage, and New Finance, but the estimates are omitted to conserve space. Each model includes firm, HQ state by year, and 4-digit SIC industry by year fixed effects. All variables are defined in Appendix A. P-values are reported below the parameter estimates. The joint effect of the double and triple interaction terms is reported in the last line of estimates with the p-value for statistical significance as indicated by an F-test for joint significance reported in parentheses below. We use the symbols *,**,*** to indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Quiet Life

	Excess Stock Return							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PP Law x Δ Cash x Quiet Life	-0.218**	-0.243**	-0.194	-0.368***	-0.365	-0.366	-0.049	-0.151
	(0.021)	(0.031)	(0.333)	(0.004)	(0.292)	(0.191)	(0.693)	(0.285)
PP Law x Δ Cash	0.231***	0.250***	0.177***	0.194***	0.188***	0.201***	0.175**	0.217***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.030)	(0.012)
PP Law x Quiet Life	0.016	0.010	0.006	-0.011	-0.119***	-0.095***	-0.001	0.025
	(0.415)	(0.615)	(0.771)	(0.580)	(0.000)	(0.005)	(0.978)	(0.179)
Quiet Life x Δ Cash	-0.111	-0.078	-0.192**	-0.130	0.122	0.097	-0.213**	-0.138
	(0.271)	(0.478)	(0.037)	(0.122)	(0.692)	(0.686)	(0.036)	(0.186)
PP Law	-0.008	-0.005	-0.004	-0.001	0.001	0.001	-0.004	-0.010
	(0.488)	(0.769)	(0.674)	(0.926)	(0.950)	(0.924)	(0.757)	(0.511)
Quiet Life	-0.016	-0.001	0.058**	0.053**	0.122***	0.091***	2.702	-0.561
	(0.406)	(0.976)	(0.023)	(0.030)	(0.000)	(0.000)	(1.000)	(1.000)
Δ Cash	0.671***	0.793***	0.651***	0.779***	0.643***	0.772***	0.710***	0.817***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
[PP Law x Δ Cash]	0.013	0.007	-0.017	-0.174	-0.177	-0.165	0.126*	0.066
+ [PP Law x Δ Cash x Quiet Life]	(0.827)	(0.926)	(0.925)	(0.128)	(0.577)	(0.511)	(0.076)	(0.418)
Additional Controls	No	Yes	No	Yes	No	Yes	No	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HQ State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quiet Life Proxy	High HHI		Mature Firm		High Gov't Sales		Low Growth Industry	
Adjusted R-squared	0.117	0.286	0.116	0.285	0.116	0.285	0.117	0.286
N	89,958	89,958	89,958	89,958	89,958	89,958	89,958	89,958

Panel B: Bonding

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Excess Stock Return				
PP Law x Δ Cash x Bonding	0.271**	0.219**	0.297***	0.227***	-0.040	-0.055	1.307***	1.270**
	(0.040)	(0.039)	(0.003)	(0.004)	(0.957)	(0.929)	(0.008)	(0.022)
PP Law x Δ Cash	0.134***	0.155***	0.133***	0.155***	0.175***	0.188***	0.161***	0.172***
	(0.007)	(0.003)	(0.012)	(0.004)	(0.002)	(0.001)	(0.004)	(0.003)
PP Law x Bonding	-0.045	-0.033	-0.052*	-0.040*	-0.093	-0.076	0.346**	0.289*
	(0.154)	(0.207)	(0.098)	(0.100)	(0.198)	(0.309)	(0.033)	(0.085)
Bonding x Δ Cash	0.556***	0.441***	0.417***	0.334***	0.412	0.375	-0.719	-0.545
	(0.000)	(0.000)	(0.000)	(0.000)	(0.536)	(0.528)	(0.134)	(0.311)
PP Law	0.004	0.004	0.011*	0.010	-0.003	-0.001	-0.005	-0.003
	(0.627)	(0.782)	(0.082)	(0.415)	(0.753)	(0.932)	(0.596)	(0.846)
Bonding	-0.124***	-0.140***	-0.120***	-0.141***	0.015	0.009	-0.305*	-0.274*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.799)	(0.849)	(0.060)	(0.103)
Δ Cash	0.609***	0.733***	0.603***	0.724***	0.644***	0.773***	0.648***	0.777***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
[PP Law x Δ Cash] + [PP Law x Δ Cash x Bonding]	0.405***	0.374***	0.430***	0.382***	0.135	0.133	1.468***	1.442***
	(0.005)	(0.002)	(0.000)	(0.000)	(0.846)	(0.824)	(0.002)	(0.006)
Additional Controls	No	Yes	No	Yes	No	Yes	No	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HQ State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bonding Proxy	Major Industrial Customer (No Gov't Cust)		Any Major Customer (Incl. Gov't Customer)		Major Industrial and Govt > 50% Customer		Alliance	
Adjusted R-squared	0.124	0.292	0.125	0.294	0.116	0.285	0.118	0.286
N	89,958	89,958	89,958	89,958	89,958	89,958	89,958	89,958

Appendix
Variable Definitions

BC Law	(0,1) indicator: '1' denotes the firm is incorporated in a state which has passed a business combination (BC) law, '0' otherwise.
BC Motivating Firm	(0,1) indicator: '1' denotes the firm is identified by Karpoff and Wittry (2015) as having lobbied for the passage of a BC law, '0' otherwise.
CSA Law	(0,1) indicator: '1' denotes the firm is incorporated in a state which has passed a control share acquisition (CSA) law, '0' otherwise.
CTS Corp v. Dynamics Corp	(0,1) indicator: '1' denotes the firm is incorporated in a state which has passed a CSA law and the observation is after the 1987 *CTS Corp v. Dynamics Corp of America* court decision, '0' otherwise.
PP Law	(0,1) indicator: '1' denotes the firm is incorporated in a state which has passed a poison pill (PP) law, '0' otherwise.
Moran v. Household Intl.	(0,1) indicator: '1' denotes the firm is incorporated in Delaware and the observation is after the 1985 *Moran v. Household International, Inc* court decision, '0' otherwise.
DD Law	(0,1) indicator: '1' denotes the firm is incorporated in a state which has passed a directors' duties (DD) law, '0' otherwise.
FP Law	(0,1) indicator: '1' denotes the firm is incorporated in a state which has passed a fair price (FP) law, '0' otherwise.
First Gen ATP Law	(0,1) indicator: '1' denotes the firm is incorporated in a state which has passed a first generation anti-takeover law, but the observation is prior to the 1982 *Edgar v. MITE* court decision, '0' otherwise.
CHE	Cash and Short-Term Investments
AT	Assets - Total
CSHO	Common Shares Outstanding
PRCC_F	Price Close - Annual - Fiscal Year
OIBDP	Operating Income Before Depreciation
IB	Income Before Extraordinary Items
XRD	Research and Development Expense
XINT	Interest and Related Expense - Total
TXDI	Income Taxes - Deferred
ITCI	Investment Tax Credit (Income Account)
DVC	Dividends Common/Ordinary
DLC	Debt in Current Liabilities - Total
DLTT	Long-Term Debt - Total
SSTK	Sale of Common and Preferred Stock
PRSTKC	Purchase of Common and Preferred Stock
DLTIS	Long-Term Debt – Issuance
DLTR	Long-Term Debt – Reduction
ROA	Operating return on assets [OIBDP / AT]
Excess Stock Return	Stock return during the fiscal year minus the Fama-French 5x5 size and book-to-market matched benchmark portfolio return.
Cash	Cash and marketable securities normalized by beginning market value of equity [CHE / (CSHO(t-1) x PRCC_F(t-1))]
Earnings	Earnings before interest and extraordinary items normalized by beginning market value of equity [(IB + XINT + TXDI + ITCI) / (CSHO(t-1) x PRCC_F(t-1))]
Net Assets	Total assets minus cash and marketable securities normalized by beginning market value of equity [(AT - CHE) / (CSHO(t-1) x PRCC_F(t-1))]
Market Value of Equity	Beginning of period market value of equity [CSHO(t-1) x PRCC_F(t-1)]
R&D	Research & Development normalized by beginning market value of equity [XRD / (CSHO(t-1) x PRCC_F(t-1))]
Interest	Interest expense normalized by beginning market value of equity [XINT / (CSHO(t-1) x PRCC_F(t-1))]
Dividends	Common dividends normalized by beginning market value of equity [DVC / (CSHO(t-1) x PRCC_F(t-1))]
Leverage	Debt in current liabilities and total long-term debt normalized by debt and market value of equity [(DLC + DLTT) / ((DLC + DLTT) + (CSHO x PRCC_F))]
New Finance	Net stock issued plus net debt issues normalized by beginning market value of equity [((SSTK - PRSTKC) + (DLTIS - DLTR)) / (CSHO(t-1) x PRCC_F(t-1))]
% Gov't Sales	Percentage of total revenues to government customers.
HHI	Revenue Herfindahl-Hirschman index at the 3-digit SIC code level.
High Gov't Sales	(0,1) indicator: '1' denotes that sales to government customers comprise at least 50% of total revenues, '0' otherwise.
Mature Firm	(0,1) indicator: '1' denotes firms that are the oldest in their respective Fama-French 48 industry, '0' otherwise.
Low Growth Industry	(0,1) indicator: '1' denotes firms that are in one of the 15 low growth industries identified by Pinkowitz and Williamson (2007), '0' otherwise. They encompass the following Fama and French (1997) 48 categories: Agriculture (1), Food (2), Beer and Liquor (4), Entertainment (7), Consumer Goods (9), Rubber and Plastic (15), Construction Materials (17), Fabricated Products (20), Machinery (21), Shipbuilding (25), Defense (26), Mining (28), Coal (29), Petroleum (30), and Communication (32).
High HHI	(0,1) indicator: '1' denotes firms residing in industries with high industry concentrations (as measured by the HHI) above the 75th percentile of all firms, '0' otherwise.
Alliance	(0,1) indicator: '1' denotes the firm has an active alliance in the SDC Joint Venture/Strategic Alliance database, '0' otherwise.

Major Industrial Customer	(0,1) indicator: '1' denotes the firm has at least one major customer listed in the COMPUSTAT customer segment database and that none of these major customers are government organizations, '0' otherwise.
Major Industrial Customer (Incl. Gov't Customer)	(0,1) indicator: '1' denotes the firm has at least one major customer listed in the COMPUSTAT customer segment database, '0' otherwise.
Major Gov't Customer	(0,1) indicator: '1' denotes the firm has at least one major customer listed in the COMPUSTAT customer segment database and that one of these customers is a government organization comprising at least 50% of if total revenues, '0' otherwise.