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Employee Protection Shocks and Corporate Cash Holdings

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Employee Protection Shocks and Corporate Cash Holdings

Abstract

We examine the relation between employee protection legislation and corporate cash holdings. Our rationale rests on the notion that higher labor adjustment costs increase a firm's operating leverage making firms to adjust their liquidity management by increasing precautionary savings. Consistent with this, we show that the staggered passage of legal exceptions to the "at-will" employment doctrine in various U.S. states led to an average increase in cash holdings by 7.2%. Cash increases are higher when unionization rates and industry concentration are lower, and when industry discharge rates and volatility is higher. Consistent with the financial flexibility argument of tighter employment protection increasing corporate cash needs, the value of cash increases after the passage of pro-labor regulations. Moreover, we find that the increase in the value of cash is especially pronounced for financially constrained firms.

Keywords: Cash holdings, Employee Protection, Firing Costs, Value of Cash

1. Introduction

The rate of cash accumulations by U.S. and global corporations has been steadily on the rise for a big part of the last 50 years, from as low as 8.5% of total assets in 1970 to 23.9% in 2020. A large number of studies have tried to understand the determinants of corporate cash holdings. Explanations range from precautionary savings (Holmstrom and Tirole, 1996; McLean, 2011), agency conflicts and wasteful spending (Dittmar et al., 2003; John et al., 2017), acquisition activity (Harford, 1999; Servaes and Tamayo, 2014), product market competition (Fresard, 2010), or compensation incentives (Liu and Mauer, 2011), among others. In the current study, we offer a novel explanation rooted in employee protection and labor market rigidity. We document that the passage of U.S. state laws that decrease the flexibility of firms in dismissing workers leads to a significant increase in corporate cash holdings.

Labor flexibility is an essential facet of a firm's competitiveness, and critical in a firm's ability to hire, retain, and dispose employees given the environmental challenges. At the macro-economic level, the ease of discharging employees has long been recognized as a critical success factor in the U.S. economy.¹ For instance, Davis and Haltiwanger (2001) document significant flows of workers to and from the manufacturing sector between 1972 and 1988 in response to oil price shocks. Bryan et al. (1999) argue that high labor mobility in the U.S. has enabled the rapid development of new industries and which was not possible in Europe and Japan. Bentolila and Bertola (1990) argue that especially the high level of employee protection in European labor

¹ For instance, in a \$1bn restructuring in 2016, IBM laid off about 70,000 employees in 2016 offering them one-month severance payments, while hiring an equal amount of employees simultaneously in the same year (Bort, 2016).

markets can explain the poor performance of European economies at the end of the 20th century, resulting into “Eurosclerotic” economies. At the micro-level, however, the question emerges whether labor regulations and labor reforms also affect firm fundamentals and shape corporate financial decisions.

In this paper, we argue that the labor rigidity due to enhanced employee protection laws impacts corporate liquidity management and may spur for higher levels of corporate cash holdings. Our intuition rests on the notion that as wages become less elastic in a firm’s production function, the degree of fixed costs with respect to variable costs rises, increasing the firm’s operating leverage. Consequently, such increased riskiness requires tightened liquidity management and results in precautionary savings (see Aiyagari, 1994; Leland, 1968), and therefore higher expected cash balances. The crux of the matter is that these laws reduce labor cost flexibility and make it harder and costlier to discharge workers, which in turn increases a firm’s operating leverage and creates the need for more cash savings.

The literature supports such an expectation. Kahl et al. (2019) show that firms with higher operating leverage hold larger cash balances than low fixed cost firms, and relate conservative financial policies to more efficient investments during downturns. Carlson et al. (2004) and Haushalter (2000) argue that operating leverage is positively related to firm risk. When a firm faces negative externality shocks, profits drop faster given the fixed cost structures. Consequently, cash flows are more sensitive to uncontrollable environmental factors. Morellec et al. (2014) argue that financial constraints have a larger effect on firm value when operating leverage is high. At the heart of the above arguments is the notion that precautionary savings (see Bates et al., 2009; McLean, 2011) reduce the cost of bankruptcy and underinvestment

(Bessembinder, 1991), and at the same time increases the chances of carrying out positive NPV investments (Froot et al., 1993). Therefore, financial flexibility is expected to result in a valuation premium, especially if a firm's production model is inflexible (Gamba and Triantis, 2008).

Although we hypothesize a *prima facie* direct and positive relation between employment protection laws and corporate cash holdings, this relation may be impacted by competing determinants. Prior work has documented that firms prefer investments in the development and training of their workforce when labor rigidity is high (Harhoff and Kane, 1997; Muehlmann et al., 2010), or prefer to increase innovative activity (Griffith and Macartney, 2014), or make investments into human capital (Estevez-Abe et al., 2001). These arguments based on human capital investments imply that firms may prefer less precautionary savings but rather spend the cash on workforce development. Given the findings in prior literature, it is clear that the relation between labor rigidity and cash holdings is not necessarily straightforward and makes this question even more important to tackle in a carefully controlled empirical setting.

We examine the passage of three legal exceptions to the "at-will" employment doctrine in various U.S. states, which increased employment protection, and resulted into various firm-level consequences. Autor et al. (2006) document that the passage of these laws reduced state level employment by 0.8-1.7%. Dertouzos and Karoly (1992) argue that the adoption of wrongful-discharge regulations amount to a 10% tax borne by employers, reducing overall firm level profitability. For our purposes, the passage of these exceptions to the at-will employment doctrine appear to be largely exogenous to an individual firm, and induce a positive shock to a firm's operational leverage (Serfling, 2016). Regulation often occurs simultaneously, rendering

cause-effect conclusions problematic. In our setting, these labor law changes happen in a staggered fashion across a relatively long time period and across several U.S. states, which provides a strong identification setting as firms domiciled in states that eventually adopt the laws can be in both the treatment and control groups at different points in time. Moreover, several U.S. states never adopt the at-will employment doctrine, enabling us to use a difference-in-differences (DiD) approach in our empirical methodology.

Covering the majority of state level at-will law changes, our sample includes all firm-year observations available in Compustat between 1967 and 1995 and has up to 134,843 firm-year observations. We conduct firm-fixed effects regressions controlling for year and state level effects, and following prior literature that examine corporate cash holdings we include an extensive set of control variables (see Opler et al., 1999; Harford, 2014). Results indicate that one exception to the employment at-will doctrine in particular, namely the good faith exception, is positively related to increased cash levels, while the implied contract and public policy exceptions are not.² In economic terms, our results suggest that the enactment of good faith laws increases cash holdings by 7.2%.

In addition, our timing tests indicate no pre-treatment cash increasing trend for treatment and control groups, suggesting that the parallel trends assumption holds. Moreover, our results hold in a pre-good faith year propensity score matched sample of 332 pairs of treatment and control firms for which we observe at least 8 years of data surrounding the passage of the good faith exception. All results remain qualitatively similar after implementing these more restrictive research design requirements. Examining industry-wide characteristics, we find that cash

² The peculiarities of the at-will exceptions are explained in further detail in Section 2.1.

holdings increase especially when unionization is lower, when the industry is more volatile, when there is a higher prevalence of employee dismissals and when industry concentration is lower. These results are consistent with economic intuition, since the largest increases in cash occur when we expect precautionary savings to be most prominent.

Next, we examine valuation implications of cash balance flexibility and document that cash holdings are more valuable following the adoption of the good faith exception. In other words, our results suggest the market perceives excess cash as a useful buffer allowing them to keep investing following potential negative shocks. Particularly, we find that investors value one additional dollar of cash for the average firm \$0.177 higher after compared to before the passage of the good faith regulation. We also find that this valuation premium increases with firms' financial constraints, supporting arguments in Fresard (2010) that cash holdings, especially when firms are financially constrained, are value increasing.

This paper has a number of contributions. First, our results add another dimension to the vast literature that explains the increase in corporate cash holdings over time. We document that regulatory labor rigidities are an alternate rationale to agency costs (Dittmar et al., 2003; John et al., 2017; Kalcheva and Lins, 2007) and information asymmetries (Opler et al., 1999) for intensified liquidity management and higher levels of cash. By identifying labor channel frictions on corporate cash holdings, we provide deeper insights in the broader association between operating leverage and precautionary savings (see Bates et al., 2009, and Kahl et al., 2019). We contribute to this line of research by focusing on one specific friction, labor regulations, and by providing plausible causal evidence.

Second, our work contributes to papers that examine the effect of labor regulations, frictions, and workforce characteristics, on corporate cash holdings. Klasa et al. (2009), in a unionized setting, show that tighter employment protection renders firms to actually *decrease* cash holdings as a low cash position may give a powerful workforce less negotiation power to claim for liquid corporate resources. DeAngelo et al. (2009) apply a similar logic in their “deep pocket” argument, and consider low cash balances as a means to self-protect against value-destroying wealth transfers to the workforce. Our paper provides an alternative view: unionization protection decreases cash balances given “deep pockets” arguments, while employment protection laws provides for the opposite effect. This effect is expected, as employment protection laws makes employee dismissal harder (hence the need for precautionary savings), but it does not improve worker bargaining power directly. Our paper also contributes to recent insights by Ghaly et al. (2017), who document that firms with a higher share of skilled workers hold more precautionary cash. While their study starts from a similar premise that the lower flexibility to labor demand is driving internal cash needs, their research design hinges upon an accurate classification of industry-specific labor skills as well as on the premise that firms with higher intangible inputs are functionally riskier and therefore are expected to hold more cash. Our study, by contrast, provides a direct cause-and-effect relation between labor rigidity and cash holdings. In a similar vein, we contribute to an earlier paper by Ghaly et al. (2015), who show that firms maintain higher cash balances to signal their commitment to employee welfare.

Third, our paper contributes to the broader literature that links corporate financial policies to firm-level labor considerations. Agrawal and Matsa (2013) argue that firms choose

conservative financial policies partly to reduce employees' exposure to unemployment risk. In similar vein, Ben-Nasr (2019) documents that firms increase their bank debt ratios when employee unemployment insurance improves. In a recent paper, Shen (2021) documents that increased labor mobility negatively affects firm value, and that the adverse relationship mainly runs via reductions in investments and increases in labor costs. We add to this stream of literature by showing that labor rigidity affects corporate liquidity management and is increasing cash holdings.

Finally, we also contribute to the value of cash literature. We find that cash increases surrounding stricter employment regulation adoption are valued positively – and especially so for firms with financial constraints. Our results feed the debate on the value of cash holdings (e.g., Faulkender and Wang, 2006; Fich et al., 2018) by identifying corporate liquidity management responses to employee protection as another mediating (and indirect) channel shaping corporate value.

Our paper is related to and complements recent research documenting the relation between labor adjustment costs and corporate financing policies. Our paper builds on Serfling (2016), who documents a negative impact of pro-labor laws on the debt holdings of U.S. firms (see also Simintzi et al. (2015) who reach similar conclusions for an international sample). We contribute to Serfling (2016) by indicating that in addition to capital structure decisions, cash and liquidity management is another important factor to consider. In a recent paper, Karpuz et al. (2020) find increasing cash buffers when employment protection laws become stricter across a sample of firms from 20 OECD countries. Haw et al. (2018) show that, for a sample of 39 OECD countries, legislative changes that strengthen labor power reduce firms' dividend

payments and total payouts. These papers mimic our results in an international setting and complement our findings. Our paper contributes to these manuscripts with a number of advantages. First, we contribute to the literature of U.S. labor regulations in one institutional setting. Therefore, compared to the cross-country studies above, our study is less likely to suffer from omitted variables due to cross-country heterogeneity. Second, by providing evidence on the value of cash, we take the analysis one step further by showing how labor laws indirectly affect firm value. Finally, our paper also builds on Qiu (2019), who looks at the relation between employment law and risk management and finds that in states that passed the good faith exception both hedging intensity and cash holdings are higher compared to non-affected states. Our analysis, however, follows an alternative approach, by adopting a difference-in-difference design surrounding the adoption dates, alleviating potential econometric concerns. In addition, we provide initial evidence on the value of cash holdings surrounding pro-labor regulations.

The remainder of the paper is organized as follows. We discuss the institutional setting in Section 2. We describe our empirical design and data in Section 3. We present our main results and results on separating tests in Section 4. Section 5 concludes.

2. Institutional Setting and Hypothesis Development

2.1 Employment Protection: The Institutional Setting

It is deeply ingrained in the common law free market identity of the U.S. that employers can terminate workers for good reasons, for bad reasons, or for no reason at all. Employment was considered to be “at-will” to both employers and employees, terminable at each party’s

request. As early as the 19th century the Supreme Court and the U.S. judiciary resisted federal and state intervention in regulating the labor market. Involvement by governmental agencies was deemed an intrusion on the freedom to conduct commerce, and regulation was regarded to be “unreasonable, unnecessary, and arbitrary interference with the right and liberty of the individual to contract” (Bernstein, 2005). Since the start of the twentieth century, a number of legal precedents have altered the nature of employer-employee relationship, and various mechanisms to protect employees started to set pace. For one, the National Labor Relations Act (“Wagner Act”) of 1935 allows employees to be unionized and to participate in collective agreements (Gorman and Finkin, 1981). Consequently, unions have attempted to install “just cause” amendments to employee contracts in order to protect against “unfair” dismissals (Abrams and Nolan, 1985). Nevertheless, unionization did not afford employees the power of legal and regulatory protection, but rather an indirect mechanism through the threat of a labor strike and unionized actions (Cox, 1959).

From the 1950s onwards, a myriad of legislation came about to challenge the doctrine of “at-will” employment, and many states have come to recognize three exceptions that afforded employees various forms of legal protections. These exceptions, as part of the wrongful discharge doctrine, created employment frictions as they received considerable media attention, raised litigation costs substantially and generated uncertainty as to whether and when employers could terminate the contract (Autor et al., 2006). Wrongful discharge laws (WDLs) include (1) the public policy exception recognized by 42 U.S. states; (2) the implied contract exception recognized by 36 U.S. states; and (3) the good faith exception recognized by 14 U.S. states. The public policy exception originates from a contract law principle, and is there to protect

employees from being discharged for performing a public service even if the action is not in the employer's interest, such as performing jury duties or reporting employer's misbehaviour, or refusing to break state/federal laws, etc. (Baucus and Dworkin, 1998). The implied contract exception originates from the principle that an employer cannot discharge an employee with whom the employer has created an explicit/implicit promise not to terminate without good cause. These promises may be oral or can be written in an internal personnel policy handbook (cfr. *Toussaint v. Blue Cross & Blue Shield* case, 1980). The good faith exception originates from contract (legal) law principle that no single party in an agreement can deny the other the full benefits of a contractual relationship. This exception requires employers to treat workers in a fair manner. For example, employers cannot discharge workers out of bad faith or retaliation nor can they prematurely terminate a working relationship before employees received a benefit to which they are entitled to (Autor et al., 2006).³

These employee protection laws have been examined in a variety of academic fields (law, finance, economics, management), and have shown to have significant economic consequences. Generally, research indicates that employment rigidity has a detrimental effect on economic performance. For example, Autor et al. (2006) show that the passage of these laws reduced state level employment by 0.8-1.7%, while Dertouzos and Karoly (1992) argue that the adoption of wrongful-discharge regulation amounts to a 10% tax borne by employers. John et al. (2015) examine state variation labor protection in an M&A setting, and find that shareholder returns are lower when the acquirer is from a state with strong labor rights. Bird and Knopf (2009), in an analysis of 18,000 banks, find that after controlling for a particular state's economic condition,

³ More details on the exceptions are summarized in Appendix A.1.

the adoption of the implied contract exception increases labor expenses, and has a significant negative effect on profitability.⁴

The economic effects of employment protection have also been studied extensively outside the U.S., particularly in Europe. Traditionally, those countries maintain more rigid labor market regulations (Hookstadt, 1918). Bentolila and Bertola (1990) argue that employee protection in European labor markets explains the poor performance of European economies at the end of the 20th century, resulting into “Eurosclerotic” economies. Bassanini et al. (2009), in a study of OECD countries, and using data on the extent of labor protection in host countries, suggest that dismissal regulation depresses productivity growth. Leonardi and Pica (2013) examine the effect of employment protection on wages after the 1990 Italian labor reforms and find that wages drop among blue collar and low wage workers with little bargaining power. Martins (2009), in a study on Portuguese firms after a change in labor laws, uses a difference-in-differences method and finds that firms that gain employee dismissal flexibility improve their performance. Ichino and Riphahn (2005) show that, once employment protection takes effect, workers are more likely to increase absences due to sick leave.

In sum, the papers discussed above suggest that rigid employment regulation has an adverse effect on labor productivity and firm profitability. Nevertheless, more rigid employment protection may also entail positive consequences, including employment stability, job security and other societal benefits (Blank, 1994; Saint-Paul, 2002). In addition, Acharya et al. (2014) argue that employment protection enables employees to undertake innovative projects.

⁴ In particular, Bird and Knopf (2009) document an average cost to each bank for the adoption of wrongful discharge was \$59,000 and a reduction in profitability by 13.5% of total ROA.

Moreover, they suggest that innovation success is not caused by investments into labor-saving technologies – but rather that stronger dismissal laws encourage cutting-edge investment projects. In a similar vein, MacLeod and Nakavachara (2007) argue that both good faith and implied contract exceptions to the at-will doctrine, increase employment in high-investment industries.

In the current study, we focus on the firm-level liquidity management responses to the staggered introduction of the WDLs across U.S. states. As prior research indicates, the good faith exception is the most far-reaching of the three exceptions (Dertouzos and Karoly, 1992; Serfling, 2016). For our purposes, the passage of these WDLs is exogenous to the firm as an individual firm is unlikely to influence a state decision to adopt these laws. In fact, the passage of these laws is more exogenous than firm-level unionization decisions, industry specific employment norms, state/federal political outcomes, and state level economic characteristics, which may be influenced by the ex-ante activities of resident firms (John et al., 2015). Serfling (2016) examines determinants of the passage of the good faith exception and also concludes that very few political and economic factors influence the adoption of the good faith exception.⁵

2.2 Hypothesis Development

⁵ The mere existence of such at-will regulation is potentially insufficient if these rules are not invoked or have only modest pecuniary consequences. Recent examples of the California Superior Court juries, however, put the importance of potential compensatory damages after a finding of wrongful termination into perspective. In the Case *Martinez, v. Rite Aid Corp.* (2018) and *Ortiz v. Chipotle Mexican Grill* (2018), former employees were awarded \$6 million and \$7.9 million, respectively (Oncidi and Hall, 2018). Evidence that overlaps with our sample period and that dates back to the 1980s confirms that both the size and likelihood of plaintiffs were substantial. Lopatka (1984), for instance, reports that wrongful discharge cases that went to juries in the mid-80s had a 90 or higher percent plaintiff success rate and a \$450,000 to \$548,000 median damage award. In several cases (e.g., *McGrath v. Zenith Radio Corp.* (1981), *Norton v. Kaiser Steel Corp.* (1982), or *Cancellier v. Federated Dept. Stores* (1983)), actual jury verdicts exceeded largely \$1 million per case (Lopatka, 1984).

Our study examines an important labor market friction, namely labor adjustment costs (Cheh, 1974; Ghaly et al., 2017), and how it potentially affects corporate liquidity management. We specifically focus on cash holdings, an essential aspect of a firm's corporate financing. We argue that employee protection laws, through the labor adjustment channel, lead to an increased level of cash holdings. Our theoretical rationale rests on the notion that with enhanced employment protection, total labor costs act more as a fixed rather than a variable cost, which in turn increases operating leverage. Consequently, a firm subject to increased labor protection likely becomes more susceptible to negative economic shocks. As such, labor adjustment costs are similar to other fixed costs such as rent, lease payments, or debt (interest) payments. In response to an increased operating leverage, firms may respond by increasing cash balances for a variety of reasons.

One explanation follows directly from the precautionary motive of cash holdings (Opler et al., 1999). Higher operating leverage implies that when revenues unexpectedly fall, fixed costs do not follow suit, at least not in the short term, resulting in lower operating margins. In turn, firms may be hampered to access external financing necessary to undertake positive NPV projects. Therefore, firms may secure access to financing by holding more cash (Opler et al., 1999; Denis and Sibilkov, 2010) to potentially provide for future investments. Moreover, the increased cash buffers can be used for horizontal and vertical acquisitions that would alternatively not be available (Lie and Liu, 2018). Based on the arguments above, our main hypothesis is:

H1: *Higher employment protection leads to increases in corporate cash holdings.*

Although we hypothesize a *prima facie* direct and positive relation between employment protection laws and corporate cash holdings, this relation may be impacted by competing determinants. In contrast to the arguments above, employment protection laws do not necessarily have a positive effect on cash holdings. Prior work has documented that firms prefer investments in the development and training of their workforce when labor rigidity is high (Harhoff and Kane, 1997; Muehlmann et al., 2010). Such human capital investments may reduce liquidity levels. Griffith and Macartney (2014) argue that employee protection legislations increase job security, thus a higher investment in innovative activity. In a similar vein, other work suggests that more stringent labor laws encourage workers to prefer investments into a specific type of human capital. Estevez-Abe et al. (2001) and Wasmer (2006) argue that increased labor market frictions yield investment preferences in firm-specific human capital compared to general human capital investments. To the extent that innovative activity spending (Griffith and Macartney, 2014) or human capital investments (Estevez-Abe et al., 2001) are borne by the firm, the equilibrium outcome could again be lower cash hoarding. Combined, the arguments based on human capital investments imply that firms may prefer less precautionary savings but rather spend the cash on workforce development. Provided these opposing views, it becomes clear that the relation between labor rigidity and cash holdings is not necessarily straightforward and makes this question even more important to tackle in a carefully controlled empirical setting.

We next turn to the data analysis where we examine the exogenous passage of employment laws and its effects on cash holdings. Moreover, we examine cross-sectional

variation in cash hoarding across firms and whether it follows patterns as predicted by the arguments above.

3. Methodology and Data

3.1 Sample

We use the good faith exception to the at-will employment doctrine as used by Autor et al. (2006), Acharya et al. (2014), Bird and Knopf (2009), John et al. (2015) and Serfling (2016) to examine the adoption of this exception on corporate cash holdings. Our unit of analysis is the individual firm, and we use all publicly held firms in the U.S. We match the at-will exceptions to the state in which the firm holds its headquarters.⁶ Our sample includes all firm-year observations available in Compustat between 1967 and 1995: the start date is chosen to precede California's passage of the implied contract exception in 1972, the end date is five years after Ohio's passage of the same legislation.⁷ These dates cover most of the data-points that include our legislative changes. Appendix A.2 provides an overview of the adoption timing of these laws. We exclude utilities (SIC 49) and financial firms (SIC 60-69). We also exclude observations with negative sales and with missing values for cash and cash equivalents (*che*) and total assets (*at*). We allow sample sizes to vary given the type of test and control variables utilized, and our sample ranges from 6,577 firm-year observations in the one-to-one propensity

⁶ Relying on Compustat data, we only have access to the most recent headquarter locations. It may be possible that firms may have relocated to a different state. Observations from such firms may bias our findings in the direction of finding no relation between good faith adoption and cash holdings, rather than inducing spurious correlations.

⁷ We end our sample in 1995 because the majority of passages of legal exceptions to the "at-will" employment doctrine took place before 1995. Employing an extended sample period may introduce noise around identification of the effect the adoption of the Good Faith exception has on cash levels. Our results remain qualitatively similar when we extend our sample by 5 or 10 years.

score matched samples, to a maximum of 134,843 firm-year observations for the broadest set of analyses.

3.2 Model Design and Variable Definition

To investigate the impact of the state-level adoption of the good faith exception on corporate cash holdings, we estimate the following panel regression model:

$$\text{Log} \left(\frac{\text{Cash}}{\text{Net Assets}} \right)_{ist} = \alpha_0 + \beta_1 \cdot \text{GoodFaith}_{st} + \Phi \cdot X_{ist} + \gamma \cdot Y_{st} + \delta_i + \omega_t + \varepsilon_{ist} \quad (1)$$

For our dependent variable, we employ the natural logarithm of cash to net assets, $\text{Log} (\text{Cash} / \text{Net Assets})_{ist}$, as our main indicator of the intensity of cash holdings for firm i in state s in year t .

Cash includes both cash and cash equivalents, and net assets equals total assets minus cash and equivalents. As a robustness check, we use two additional dependent variables: the first one being log-transformed cash on sales, and the second one being the logarithm of raw cash holdings ($\text{Log} (\text{Cash} / \text{Sales})_{ist}$ and $\text{Log} (1 + \text{Cash})_{ist}$, respectively). We use Good Faith_{st} as our main variable of interest, an indicator variable equal to 1 for firms headquartered in states that have adopted the good faith exception as of year t . We also include $\text{Public Policy}_{st}$ and $\text{Implied Contract}_{st}$, as indicators for the passage of the two other labor laws.

X_{ist} captures firm specific control variables. Following prior studies that examine corporate cash holdings (Opler et al., 1999; Harford et al., 2008), we include the following firm controls. Firm size is measured as the logarithm of total assets (Log Assets). Leverage is measured as the book value of debt scaled by total assets (Book Leverage). Profitability is measured as operating cash flows scaled by Net Assets (Profitability). Working capital is measured as operating current assets minus operating current liabilities, scaled by total assets

(*Working Capital*). Dividends is measured as a dummy variable if a firm pays dividends during the fiscal year (*Dividend Payer*). Capital expenditures is the level of investments scaled by total assets (*Capex*). Market-to-book is measured as the market value of equity scaled by the book value of equity (*Market-to-Book*), and cash flow volatility is the standard deviation in cash flow on total assets over the preceding five years (*Cash Flow Volatility*).⁸

We control for differences in economic traits between states by including controls for state GDP growth and state GDP per capita (*State GDP Growth* and *Log GDP per Capita*). We also control for the adoption of the good-faith exception in states that are in the same federal circuit as the firm's headquarters, given arguments in Autor, Donohue and Schwab (2006) that a good-faith exception adoption in a circuit state increases the likelihood that the home state may also introduce this particular exception in the future. Our panel regression model also includes firm fixed effects δ_i and year fixed effects ω_t , while ε_{ist} is the residual. Firm fixed effects capture any time-invariant firm-specific information and ensure that we are able to measure the cash effects of good faith adoption in the time series (in robustness tests we use alternate estimation methods with similar results). Given that labor laws are enforced at the state level and have multiple corresponding firm-observations, we use standard errors clustered by state.⁹ To minimize the effect of outliers, all independent variables except *Log Assets* and *Dividend Payer* are winsorized at 1% and 99%. Appendix A.3 reports a detailed overview of our variable definitions.

⁸ Opler et al. (1999) also include R&D expense as an indicator for cash holdings. We omit this variable as it is often missing for many observations, especially in the early years of our sample period. When including the variable (and putting the missing values equal to zero), our inferences remain unchanged.

⁹ Clustering at the state level takes into consideration potential time-varying correlations in unobserved factors that affect different firms within a certain state. In additional analyses, we cluster at the firm level as an alternative approach. Results are very similar.

3.3 Descriptive Statistics

Table 1 presents our descriptive statistics. The amount of cash held by the average firm is \$30.6 million. Cash holdings vary considerably across firms as the standard deviation is about 7 times the mean. The mean also exceeds the median and even Q 3, indicating severe skewness to the right. Consequently, we use the natural logarithm of cash in our multivariate specifications ($\text{Log}(1 + \text{Cash})$). Cash scaled by net assets, $\text{Cash} / \text{Net Assets}$, is 25.5% on average. Even scaled, this cash variable is heavily skewed to the right, so we again log transform it in our regressions. $\text{Cash} / \text{Sales}$ is 32.2% on average. Log transformed variables of these cash holding indicators prove to be much more normally distributed. Our three indicator variables for labor laws, *Good Faith*, *Implied Contract* and *Public Policy* have means of 16.8%, 50.8%, and 51.5%, respectively. These numbers indicate that Good Faith, the most stringent of the present set of labor laws, is observed for 16.8 percent of the firm-years and is adopted by 14 out of 50 states.¹⁰

(Insert Table 1 here)

The average firm has a balance sheet total (*Assets*) of \$846 million and has a debt ratio (*Book Leverage*) of 28.7%. The median firm has operating cash flows over assets (*Profitability*) of 8.8%. Similar to the above, the rest of our control variables have standard distributions based on the sampling procedures.

¹⁰ The respective states (state adoption years) are in alphabetical order: Alaska (1983), Arizona (1985), California (1980), Connecticut (1980), Delaware (1992), Idaho (1989), Louisiana (1998), Massachusetts (1977), Montana (1982), Nevada (1987), New Hampshire (1974, reversed in 1980), Oklahoma (1985, reversed in 1989), Utah (1989) and Wyoming (1994) – See Appendix A.2 for mor state-level adoption details.

In Figure 1, we provide a graphical illustration of the association between the good faith adoption and corporate cash holdings. We draw from Acharya et al. (2014) and Serfling (2016) and regress cash holdings on year fixed effects and dummy variables indicating the year relative to the good faith adoption, ranging from 5 years before until 10 years after the adoption. The first variable is set to one in the fifth year before adoption and zero otherwise. The last variable is set to one if it has been 10 or more years after the adoption of the law and zero otherwise. The graph plots the estimated coefficients (full line) for the three cash variables (Panel A: *Log Cash / Net Assets*; Panel B: *Log Cash / Sales*; Panel C: *Log(1+Cash)*) on each indicator variable as well as the 90% confidence intervals of the estimated coefficients (dotted lines). The x-axis reports the time relative to the adoption of the good faith exception for the period of 5 years before until 5 years after adoption. The graphical results illustrate that cash holdings increase after the passage of the good faith exception. The full line runs around zero before the adoption of good faith, suggesting that cash levels do not meaningfully differ between firms from adopting and non-adopting states. However, after good faith adoption, we notice an increasing trend in the line, suggesting that firms in good faith states increase their cash holdings, especially from two years after the adoption of the law.

(Insert Figure 1 here)

4. Empirical Results

4.1 Multivariate Fixed-Effects Regressions

We conduct firm fixed-effects regressions controlling for year effects and clustering our standard errors at the state level. Table 2 presents our results. Column (1) presents baseline regressions with our three labor law variables, firm effects and year effects. Results indicate that *Good Faith* is positive and statistically significant, while *Implied Contract* and *Public Policy* are not. Column (2) adds firm level controls, with similar results. *Good Faith* is still positive and significant, while the other two variables remain insignificant. The same conclusion can be inferred in columns (3)-(5), where we add state level control variables, and use two different dependent variables: *Log (Cash / Sales)* and *Log (1 + Cash)*. Next, we present a “control” specification to ensure that sample selection procedures due to missing data points on control variables do not influence the results in any important fashion (essentially, in column (6) we keep the same number of observations as column (3)). Results from this specification show us that this is not the case (column 6).

In examining the three labor laws in relation to cash holdings, we find that the good faith exception to at-will employment has a significant effect on corporate cash policies, while the public policy and implied contract exceptions do not. These results are consistent with the idea that firms increase internal cash levels to compensate for the probability of increased operating leverage given more rigid labor laws. The economic effects of the relations are relevant in magnitude: a firm that resides in a state that passes the good faith exception to at-will employment, will increase its cash levels by on average 7.2% (based on model (5) in Table 2).¹¹

(Insert Table 2 here)

¹¹ The unscaled cash variable in model (5) makes it most straightforward to interpret the economic magnitude of our predicted effect. When transforming the coefficient with all available digits behind the comma (i.e. $[\exp(0.0694591)-1]$), we find that cash increases by 7.193% which we report throughout the paper as 7.2%.

Our control variables show signs and significance consistent with prior research (e.g. Harford et al., 2014 and Opler et al., 1999). *Leverage* is negatively related to cash holdings. *Profitability* and *Market-to-Book* are positively related to cash, indicating that profitable firms and firms with growth opportunities are more likely to have higher cash levels. Both *Capex* and *Working Capital* are negatively related to cash levels: firms that invest in long term assets or in building up current assets such as inventories, typically have lower cash levels. The coefficient on *Dividend Payer* is marginally positive, indicating that cash rich firms are more likely to pay dividends. Firm size (*Log (Assets)*) is positively related to cash levels (columns (4) and (5)), in line with prior studies. In columns (2) and (3) the coefficient on *Log (Assets)* is mechanically correlated to the denominator of the dependent variable. So far, we have used a firm-fixed effects specification to examine the relation between labor laws and corporate cash holdings. This methodology tests for our relations using a time-series methodology, where a change in the independent variable, at the firm-level, is associated with a corresponding firm-level outcome.¹²

In unreported tests, we also include industry-year fixed effects to control for trends in industry composition. Additionally, we test a specification in which we restrain our sample to states that have adopted the good faith exception and their neighboring states to address potentially spuriously correlated state factors. We continue to find positive coefficients on the good faith indicator in each of these above described alternative specifications.

4.2 *The timing of labor laws*

¹² As an alternative specification to using firm fixed effects, we introduce industry fixed effects in combination with year effects separately as well as industry-year fixed effects. In each of these alternative specifications, we continue to find a highly significantly positive coefficient on *Good Faith* for all cash variables.

Having established a robust positive relation between labor laws and corporate cash holdings, we proceed to conduct a number of additional tests. First, we conduct timing tests in the spirit of Bertrand and Mullainathan (2003) to verify if the parallel trends assumption holds in our DiD design. This design can mitigate concerns of pretreatment trends and reverse causality potentially driving our results. Similar to Serfling (2016), we construct a number of time-specific indicator variables: $Good\ Faith^{t-1}$, $Good\ Faith^{t=0}$, $Good\ Faith^{t=1}$, $Good\ Faith^{2+}$. $Good\ Faith^{t-1}$ is equal to 1 if the firm is headquartered in a state that passes a good faith exception in the following year, and zero for all other firm-years. Similarly, $Good\ Faith^{t=0}$ ($Good\ Faith^{t=1}$) is equal to 1 if the firm is in a state that passes the law in the current year (previous year), and zero for all other firm-years. $Good\ Faith^{2+}$ is equal to 1 if the firm is headquartered in a state that passed the law two or more years ago, and zero for the other firm-years. As prior research has found that employment protection largely responds with a delay (e.g., Autor et al., 2006), we have no specific prior on the $Good\ Faith^{t=1}$ variable but predict a significantly positive coefficient on $Good\ Faith^{2+}$.

(Insert Table 3 here)

Table 3 presents our results. The table is organized in a similar fashion as Table 2. Column (1) presents the base model, while columns (2) and (3) add firm and state level controls, respectively. Columns (1)-(3) use $\text{Log}(\text{Cash} / \text{Net Assets})$ and columns (4)-(5) use $\text{Log}(\text{Cash} / \text{Sales})$ and $\text{Log}(1 + \text{Cash})$. Results indicate that $Good\ Faith^{2+}$ is uniformly significant across all the columns. Moreover, the results show that after we insert firm controls (column 2) and state controls (column 3), there is no observable time trend before the adoption of the good faith

exception. These results suggest there is no effect of the good faith exception on cash holdings prior to the adoption, and that the effects only take place well after the passage of the law.

4.3 Propensity Score Matching

Despite the rigor of the previous tests, there is still a possibility that unobserved firm characteristics may potentially influence our results. Our empirical strategy so far involves examining a large number of firms whose characteristics are not necessarily randomly distributed. In other words, specific states can have an over-representation of some industries, or, specific firms may have self-selected into certain states given credit, liquidity, and investment related considerations. Such non-random firm and state level characteristics might drive firms to increase cash holdings, irrespective of labor regulations, and introduce noise in our empirical analysis. Therefore, we re-examine the positive relation between cash holdings and the adoption of the good faith exception by controlling for covariate imbalances between treatment and control firms. In particular, we create a matched treatment and control sample from all observations based on a propensity score matched sample methodology as suggested by Rosenbaum and Rubin (1983). This covariance balance test provides a powerful additional check to estimate the correct impact of good faith adoption on treatment and control firms' cash holdings and mitigates concerns that nonlinearities in the matched control variables are not driving the results.

We start by retaining all observations for treatment and control firms in year ($t-1$) relative to the adoption of the good faith exception and estimate the probability of being a treated firm using all firm-specific control variables in our regression of interest. We then match each treatment firm in year $t-1$ to a control firm (with replacement), matching on year, 3-digit SIC

industry code and closest propensity score (caliper <0.01). To make sure that all treatment and control firms enter our sample with fairly similar weights in the regression model of interest, we require a panel of treatment and control firms that have at least 8 observations during the 10 years around (± 5 years before and after) the good faith adoption. When treatment firms have multiple control firm matches, we retain the control firm with the closest propensity score. Both treatment and control samples have 332 pairs of firms, resulting in a maximum of 6,640 observations around good faith adoption.

(Insert Table 4 here)

Panel A of Table 4 displays descriptive statistics for the pooled observations in the two left columns and for PSM treatment versus matched control firms in year ($t-1$) in the two right columns. For all covariates, we observe significantly different mean values for the pooled sample (t -test values are significant at $p<0.01$ for all variables). After matching in the pre-good faith year, our matched control variables are no longer significantly different across both samples. Panel B of Table 4 presents our multivariate results for the sample of treatment and matched firms using the model specification as per column (3) of Table 2, i.e., including all firm and state-level control variables as well as year, industry and firm fixed effects. The table has three columns for each of our dependent variables' specifications. Similar to the test design in Schepens (2016), we construct an interaction variable that indicates the post-adoption period for firms in states that adopt the good faith exception. Results show that our variable of interest *Post Period* \times *Good Faith* is positive and significant ($p<0.05$) in each of our three specifications, confirming our main results.

4.4. Cross-Sectional Differences across Industry and State Characteristics

In a series of cross-sectional tests, we examine the conditions in which the relation between the adoption of the good faith exception and cash holdings is particularly pertinent. Specifically, we exploit cross-sectional variation in industry and state-level characteristics for which we expect an effect on the association between good faith adoption and cash holdings. These cross-sectional analyses can provide us with more insight into the economic channel driving the observed relationship. Moreover, if an unobservable factor drives our results, such as state-level liquidity or investment trends, and cash levels increase as a consequence, then this should uniformly affect all firms.

We do four of such tests. First, we consider the extent of unionization. Unionized employees are generally less affected by the good faith exception (Autor, 2003). Therefore, we expect the good faith exception to have a larger impact on cash holdings for firms that have fewer unionized employees. Data is gathered from the IPUMS-CPS database where we assess the percentage of unionized workers per state per year. We create an indicator variable *Union Low*, equal to 1 for observations in state-years below the median unionization rate, and zero otherwise.

Second, we consider industry volatility. Firms operating in more volatile industries are expected to take stronger precautionary measures in response to an increase in labor rigidity.¹³ To capture industry volatility, we start by calculating each firm's cash flow volatility, measured as the standard deviation of operating cash flow scaled by assets over the preceding 5 years.

¹³ This logic is in line with the findings in Bates et al. (2009) showing that cash flow volatility is one of the prime determinants of increased cash holdings over the period 1980-2006. Note that their sample period is more recent than ours, however, but as their Figure 2 shows (p. 1196), cash flow risk may also start becoming an important factor in the second half of our sample period.

Next, we calculate the average cash flow volatility over all firms per industry, per state, and per year. We create an indicator variable *Ind. Vol. High* equalling 1 for firms operating in industries that have a state-year specific volatility above the median value of all industry volatility measures, and zero otherwise.

Third, we measure the extent to which employee dismissal is prevalent within an industry. Discharging workers is a frequent manner of restructuring, and firms operating in these environments are more likely to be affected by firing costs. Hence, we expect firms operating in industries with higher discharge rates during certain periods to be more affected by anti-dismissal regulations. Using Compustat data on the number of employees, we consider the percentage of firms in each industry in each state that have reduced their workforce by 5% or more in a five-year period.¹⁴ For robustness, we redo the test putting the threshold at 10% reduction. We create an indicator variable *Discharge High* equal to 1, for industry-state observations above the median, and zero otherwise.

Fourth, we consider the level of competition, measured by (the inverse of) industry concentration. We expect more competitive environments to provide greater incentives to firms to increase cash holdings in response to an increase in labor protection. The logic follows from the observation that more intense competition is associated with higher volatility of firms' operating cash flows (Irvine and Pontiff, 2009). This, in turn, suggests that corporate cash holdings are likely to be more responsive to increased operating leverage in high competition industries. To the extent that industry concentration is inversely correlated with competition, we

¹⁴ We split our sample period in 5 periods of five years (between 1967 and 1991) and 1 period of four years (between 1992 and 1995) to measure the discharge rate per industry per state.

therefore predict stronger effects of the adoption of the good faith exception in less concentrated industries. We measure industry concentration by the Herfindahl-Hirschman Index (HHI), calculated on a yearly basis as the sum of squares of the market share of firms in the same industry. We create an indicator variable *Ind. Conc. Low* equalling 1 for firms operating in industries that have a concentration below the median value of all industry concentration measures, and zero otherwise.

(Insert Table 5 here)

Results are summarized in Table 5. We show results for our three different measures of cash holdings: $\log(\text{cash} / \text{net assets})$ in Panel A; $\log(\text{cash} / \text{sales})$ in Panel B and $\log(1 + \text{cash})$ in Panel C. Each specification contains level and interaction terms of the state and industry variables, as well as control variables. For brevity, we only report coefficients on Good Faith and the interaction terms. Column (1) of Panel A shows a positive and highly significant interaction term between *Good Faith* and *Union Low* (0.162; $p < 0.01$), which is consistent with expectations that the adoption of the good faith exception has a more pronounced impact in states with low unionization. Column (2) shows that the good faith exception has a stronger impact on firms' cash holdings in more volatile industries (0.152; $p < 0.01$). Columns (3) and (4) show results for interactions between good faith adoption and industries' discharge rates. Firms operating in industries with high discharge rates engage in larger cash increases post-good faith. Results are strongest when using the more extreme 10% threshold (0.247; $p < 0.01$). Finally, Column (5) shows that the good faith effect is more pronounced in lower concentration (i.e., more competitive) industries (0.071; $p < 0.10$). Results in Panel B and C for alternative cash definitions provide qualitatively similar results. In sum, these cross-sectional analyses suggest

that cash holdings increase more strongly in response to tighter employee protection in those settings where one would expect them to do so.

4.5 The Value of Cash Holdings around Good Faith Adoption

4.5.1 The effect of Good Faith Adoption on the Value of Cash

So far, results are supportive for the conjecture that pro-labor regulation causes wages to become less elastic in a firm's production function, which creates an internal need for precautionary cash savings to increase. In the second part of our study, we examine how much value investors place on a marginal dollar of cash in the hands of management, both in general and after the adoption of pro-labor laws. On the one hand, it may be expected that investors would value higher cash holding negatively, if they believe that increased internal cash holdings increases management's leeway to overinvest. On the other hand, if investors are interpreting the increased cash holdings as a necessary response to the increased needs for financial flexibility resulting from labor rigidity, the value of cash holdings should be valued positively. In this case, our prediction is that investors view cash as worth more following the adoption of the good faith exception.

Given prior work has suggested that pro-labor regulations increase firm rigidity (e.g., Dertouzos and Karoly, 1992; Bird and Knopf, 2009), the flexibility associated with increased cash holdings post good faith adoption is expected to result into a valuation premium. To test for the value of cash after good faith adoption, we apply a model similar to Faulkender and Wang (2006) where excess stock returns are regressed on the change in cash, while controlling for the

changes in a battery of other firm-specific factors known to affect shareholder wealth. We run the following model:

$$[r_{i,t} - R_{Bit}] = \alpha_0 + \beta_1 \cdot \Delta Cash_{it} + \beta_2 \cdot Goodfaith_{st} + \beta_3 \cdot (\Delta Cash_{it} \times Goodfaith_{st}) + \Phi \cdot X_{it} + \gamma \cdot Y_{st} + \delta_i + \omega_t + \varepsilon_{ist} \quad (2)$$

Excess returns for firm i at time t , $[r_{i,t} - r_{m,t}]$, is returns calculated by subtracting out the return of a portfolio matched on size and market-to-book (Faulkender and Wang, 2006). The excess equity return is regressed over the change in cash, the good faith adoption indicator variable and the interaction of both variables. Additionally, we include a vector of firm characteristics similar to Faulkender and Wang (2006) that proxy for profitability, financing and investment policy. These control variables include: change in *Profitability*, change in *Net Assets*, change in *R&D*, change in *Interest*, change in *Div*, lagged *Cash*, *Market Leverage*, *New Finance*, the interaction between leverage and change in cash, and the interaction of lagged *Cash* with changes in cash. These control variables are defined in more detail in Appendix A.3 and are similar to those in Faulkender and Wang (2006). We also control for state time-trends and include year and firm fixed effects. Our primary coefficient of interest, β_3 , reflects the incremental change in the marginal value of cash when the good faith law is adopted compared to non-good faith years.

(Insert Table 6 here)

Results in Table 6 report the average marginal value of cash results for the full period of observation (column 1) and for the incremental effect post-good faith vis-à-vis non good faith years (column 2). In the baseline case, we find evidence suggesting that investors value an

additional dollar of cash at \$0.754 for a zero cash, zero-leverage firm. However, since the mean firm has cash holdings equal to 18.05% of market capitalization at the beginning of the fiscal year and a mean market leverage of 29.06%, the marginal value of cash to shareholders equals \$0.534 in the mean firm ($=\$0.754 + (-\$0.553)*0.2906 + (-\$0.330)*0.1805$). All control variables yield results consistent with prior work. Importantly, we observe a significantly positive coefficient on the interaction between *Good Faith* and $\Delta Cash$ of 0.177 in column (2), implying that the marginal value of cash increases by \$0.177 after the adoption of the law. These results suggest the market perceives excess cash more positively for the average firm, post-compared to pre-good faith, potentially allowing them to keep investing following potential negative shocks.

4.5.2 *The Value of Cash, Good Faith Adoption and Firm Financial Constraints*

In addition, we investigate whether a firm's financial constraints affect the relation between increased labor protection and the value of increased cash holdings as a response. Denis and Sibilkov (2010) observe that cash holdings for financially constrained firms are valued higher mainly because constrained firms can invest comparatively more if they hold high cash levels, causing a stronger association between investment and value for constrained firms than for unconstrained firms. This results into the logic that higher cash holdings allow constrained firms to undertake value-increasing projects that might otherwise be bypassed. Hence, the additional value of holding on to cash is expected to be comparatively higher for constrained firms vis-à-vis unconstrained firms.

As a separating test, we therefore split our sample based a firm's financial constraints based on three widely used indicators. The first measure is suggested by Whited and Wu (2006). This measure, indicated as *Whited-Wu*, is based on an index model using cash flow, dividends, long term debt, firm size, firm and industry-firm sales growth as inputs. We capture industry sales growth as the median sales growth per 3-digit SIC. Higher values of *Whited-Wu* indicate more financial constraints. The second and third measure of financial constraints relies on Hadlock and Pierce (2010), who proxy for financial constraints by firm size and age. Larger and older firms are considered to be less financially constrained. We measure firm size as *Log Assets* and age (*Firm Age*) as the number of years the firm has data available in Compustat. Each of the financial constraint indicators are lagged by one year.

(Insert Table 7 here)

Table 7 shows results of how the relation between changes in cash holdings and excess returns before versus after the adoption of the good faith law, interacted with the financial constraints indicator (*FCI*). Our variable of interest is the three-way interaction between *Good Faith*, $\Delta Cash$ and *FCI*. In each specification, we find a significant coefficient on this three-way interaction term. In column (1), testing the *Whited-Wu* index, the coefficient of interest is positive, indicating that internal cash increases are more valuable following the adoption of good faith when firms are more financially constrained. In columns (2) and (3), we observe negative interaction coefficients when using firm size and age as financial constraint indicators, indicating that cash increases are valued higher after the good faith adoption in smaller and younger firms (i.e. in financially more constrained firms). Overall, our additional marginal value of cash results in Tables 6 and 7 are consistent with the idea that creating more financial flexibility by increased

cash holdings in response to increased employee firing costs is valued positively by investors, and more so for firms that have higher needs for this flexibility.

5. Conclusion

This paper offers a novel explanation rooted in employment protection and labor adjustment costs for increased levels of corporate cash holdings. We find that the staggered adoption of the good faith exception to at-will employment relationships increases the cash levels of U.S. corporations by 7.2%, or about 2.2 m USD for the average firm. We argue that employee protection results in higher cash holdings, given that as wages become less elastic in a firm's production function, the degree of fixed costs increase with respect to variable costs, and firms become more susceptible to negative environmental shocks. Consequently, this increased riskiness leads to higher levels of cash balances, which can be used for future investment during downturns, lawsuits and restructurings.

We examine the passage of legal exceptions to the "at-will" employment doctrine in various U.S. states, which increased employment protection. The passage of these exceptions appears to be largely exogenous to an individual firm. Moreover, these labor law changes do not take place for all states uniformly, enabling us to use a difference-in-difference (DiD) approach in our empirical methodology. We conduct firm-fixed effects regressions, perform timing tests and select restrictive propensity score matched treatment and control firms. All of our results point in the same direction: we find a significant increase in cash holdings following the adoption of the good faith exception. Cross-sectional state and industry analyses indicate that cash holdings increase especially when unionization is low, when the industry is less

concentrated and more volatile in nature, and when there is a higher prevalence of employee dismissals.

Finally, we find evidence that, on average, investors value the increased cash holdings around the staggered introduction of good faith laws positively and especially so for financially constrained firms for which investment opportunities are more depending on internal cash buffers (Denis and Sibilkov, 2010). This finding of investors placing a value premium on increasing cash levels post passage of labor protection laws suggests that macro-level interventions by the government can create frictions related to financial flexibility.

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Appendices

Appendix A.1: Wrongful Discharge Laws

Good Faith Exception	Originates from contract (legal) law principle that no single party in an agreement can deny the other the full benefits of a contractual relationship. The exception requires employers to treat workers in a fair manner (i.e., in good faith) and not take actions that would deprive employees of the benefit of employment without “just cause”. For example, employers cannot discharge workers out of bad faith, malevolence, or retaliation nor can they prematurely terminate a working relationship before the employee received a compensation (stock options; bonus) to which he is entitled to. While this exception is rather broad in nature, it has been applied narrowly once adopted in the respective States on issues like pension benefits, sales commission, sick leave or earned vacation time (Autor, Donohue and Schwab 2006).
Implied Contract Exception	Originates from the principle that an employer cannot discharge an employee with whom the employer has created and explicit/implicit promise not to terminate without good cause. These promises may be oral; if written in a handbook, they do not need to be negotiated with employees individually. Courts have also determined that employee tenure, a history of promotions or salary raises, general company policies, and typical industry practices can constitute an implied promise of ongoing employment.
Public Policy Exception	Originates from contract law principle that an employer who discharges an employee in violation of an important public policy, does so for a reason that the legislature/society deems so unreasonable that statutory or common law prohibits it (either expressly or impliedly) (Baucus and Dworking 1998; Autor 2003). The exception is there to protect employees from being discharged for performing a public service even if the action is not in the employer’s interest (e.g., performing jury duties, refusing illegal act participations, exercising workers’ compensation claims, or reporting employer’s misbehavior).

Appendix A.2: State-Level Adoption of Wrongful Discharge Laws

State	Good Faith Exception	Implied Contract Exception	Public Policy Exception
Alabama		1987	
Alaska	1983	1983	1986
Arizona	1985	1983 (reversed in 1984)	1985
Arkansas		1984	1980
California	1980	1972	1959
Colorado		1983	1985
Connecticut	1980	1985	1980
Delaware	1992		1992
Florida			
Georgia			
Hawaii		1986	1982
Idaho	1989	1977	1977
Illinois		1974	1978
Indiana		1987	1973
Iowa		1987	1985
Kansas		1984	1981
Kentucky		1983	1983
Louisiana	1998		
Maine		1977	
Maryland		1985	1981
Massachusetts	1977	1988	1980
Michigan		1980	1976
Minnesota		1983	1986
Mississippi		1992	1987
Missouri		1983 (reversed in 1988)	1985
Montana	1982	1987	1980
Nebraska		1983	1987
Nevada	1987	1983	1984
New Hampshire	1974 (reversed in 1980)	1988	1974
New Jersey		1985	1980
New Mexico			1983
New York		1982	
North Carolina			1985
North Dakota		1984	1987
Ohio		1982	1990
Oklahoma	1985 (reversed in 1989)	1976	1989
Oregon		1978	1975
Pennsylvania			1974
Rhode Island			
South Carolina		1987	1985
South Dakota		1983	1988
Tennessee		1981	1984
Texas		1985	1984
Utah	1989	1986	1989
Vermont		1985	1986
Virginia		1983	1985
Washington		1977	1984
West Virginia		1986	1978
Wisconsin		1985	1980
Wyoming	1994	1985	1989

Appendix A.3: Variable Description and Measurement (Alphabetical Order)

Variable	Definition
Assets	The value of total book assets in millions. The natural log of <i>Assets</i> , indicated as <i>Log Assets</i> , is the prevailing measure of firm size. In Tables 6 and 7, <i>Log Assets</i> is lagged by one year.
Book Leverage	The sum of long-term debt and short-term debt in current liabilities scaled by total assets.
Capex	Capital expenditure scaled by total assets.
Cash	The sum of cash and cash equivalents (in millions USD).
Cash Flow Volatility	Standard deviation of the ratio of operating cash flow scaled by total assets over the preceding five years. Firms must at least have three consecutive years of data available.
Circuit States' Good Faith	The fraction of other states in the same federal circuit region as the firm's headquarters state that have passed the good faith exception by year t .
Discharge	The percentage of firms in each industry in each state that has reduced its workforce by at least 5% (alternatively, 10%) in a five-year period. We split our sample period in 5 periods of five years (between 1967 and 1991) and 1 period of four years for the final 4 observation years (between 1992 and 1995) to measure the discharge rate per industry per state. The industry classification is based on SIC 3-digit codes.
Discharge High	Indicator variable equal to 1 for industry-state <i>Discharge</i> proportions above the median, and zero otherwise.
Div	Total dividends measured as common dividends paid scaled by lagged market value of equity.
Dividend Payer	An indicator variable set to one if a firm pays a common dividend in year t , and zero otherwise.
Excess Returns	Returns adjusted for firm size and market-to-book ratio [25 FF portfolios] (as per Faulkender and Wang, 2006)

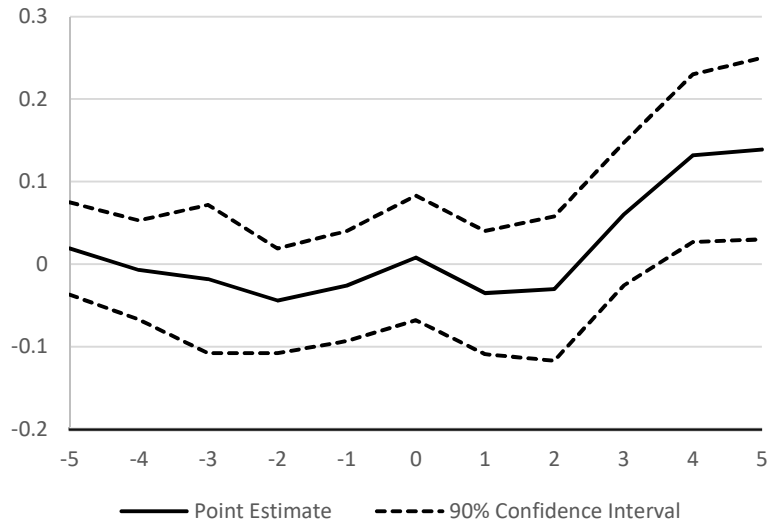
Firm Age	The number of years the firms has available observations in the Compustat database in year $t-1$.
Good Faith	An indicator variable set to one if the state in which a firm is headquartered has adopted the good faith exception by year t and zero otherwise.
Implied Contract	An indicator variable set to one if the state in which a firm is headquartered has adopted the implied contract exception by year t and zero otherwise.
Ind. Conc.	Herfindahl-Hirschman Index (HHI) calculated as the yearly sum of squares of the market share (Sales) of firms in the same SIC 3-digit industry.
Ind. Conc. Low	Indicator variable equal to 1 if <i>Ind. Conc.</i> is below the median of all industry-year <i>Ind. Conc.</i> observations, and zero otherwise.
Ind. Vol.	The average <i>Cash Flow Volatility</i> across all firms in the same industry, state and year. Industry classification is based on SIC 3-digit codes.
Ind. Vol. High	Indicator variable equal to 1 if <i>Ind. Vol.</i> is above the median of all industry-state-year <i>Ind. Vol.</i> observations, and zero otherwise.
Interest	Interest expense (<i>int</i>) scaled by lagged market value of equity.
Market Leverage	The sum of long-term debt and short-term debt in current liabilities scaled by the market value of equity (price per share at the end of the fiscal year multiplied by the number of shares outstanding).
Market-to-book	The market value of equity (price per share at the end of the fiscal year multiplied by the number of shares outstanding) divided by book value of equity.
Net Assets	Total assets minus cash and cash equivalents. In the value of cash analyses (Table 6 and 7), <i>Net Assets</i> is scaled by lagged market value of equity.
New Finance	Net stock issued plus net debt issues normalized by lagged market value of equity.

Profitability	Operating cash flow scaled by <i>Net Assets</i> . In the value of cash analyses (Table 6 and 7), <i>Profitability</i> equals operating cash flow scaled by lagged market value of equity.
Public Policy	An indicator variable set to one if the state in which a firm is headquartered has adopted the public policy exception by year t and zero otherwise.
R&D	Research and development expense scaled by lagged market value of equity. <i>R&D</i> is set to zero in case of missing values.
Sales	Total revenues of the company (in millions USD).
State GDP Growth	The state-level GDP growth rate over the prior year.
State GDP per Capita	A state's GDP (in thousands) divided by its total population.
Union	The average annual fraction of employees in each state that is unionized.
Union. Low	An indicator variable equal to 1 if <i>Union</i> is below the median of state-year <i>Union</i> observations and zero otherwise.
Whited-Wu	A measure of financial constraints stemming from the study by Whited and Wu (2006) by means of a linear combination of cash flow, dividends, long term debt, firm size, firm sales growth and industry sales growth. Industry sales growth is measured as the median sales growth per 3-digit SIC. Measure is lagged by one year. Higher values indicate more financial constraints.
Working Capital	Operating current assets (total current assets minus cash and cash equivalents) minus operating current liabilities (total current liabilities minus short-term debt) scaled by total assets.

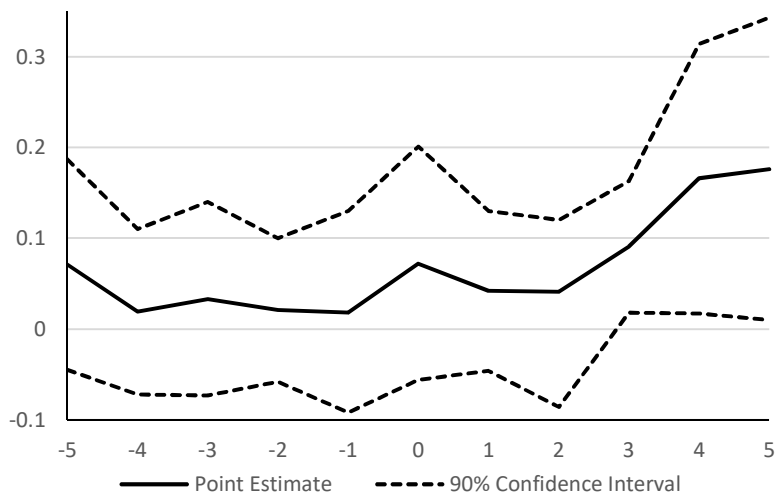
7. Tables and Figures

Figure 1: Good Faith Adoption and Cash Holdings Evolutions

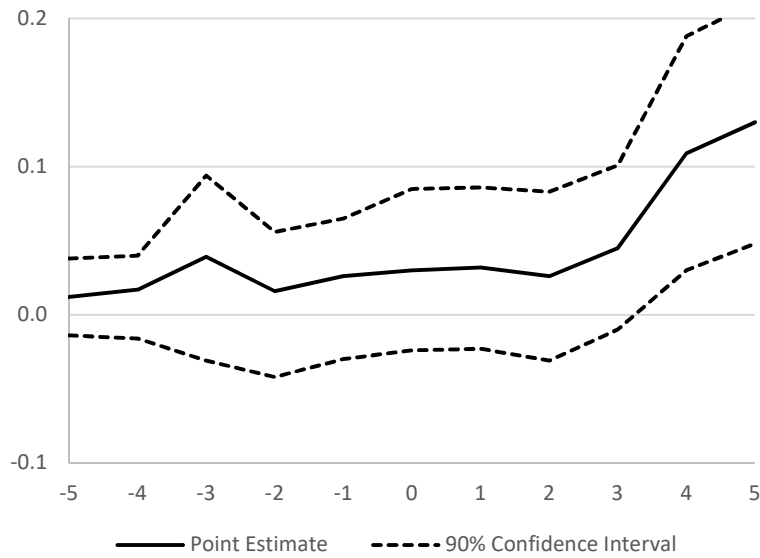
Panel A: Log (Cash / Net Assets)



Panel B: Log (Cash / Sales)



Panel C: Log (1+Cash)



This figure shows the effect of the adoption of the good faith exception on Log (Cash / Net Assets) in Panel A, Log (Cash / Sales) in Panel B and Log (1+Cash) in Panel C. On the y-axis, the graph reports the coefficients (full line) from regressing the cash variables on year fixed effects and dummy variables indicating the year relative to the adoption of the good faith exception. We create indicator variables for 5 years before adoption until 10 years after. The first indicator variable is set to one in the fifth year before adoption and zero otherwise, the second indicator variable is set to one in the fourth year before adoption, and zero otherwise, and so on. The last variable is set to one if it has been 10 or more years after the adoption of the law and zero otherwise. The x-axis shows the time relative to the adoption of the good faith exception from 5 years before until 5 years after adoption. The graph also shows the 90% confidence intervals of the estimated coefficients (dotted lines). The reported intervals stem from standard errors clustered by state. The sample period is from 1967-1995.

Table 1: Descriptive Statistics

Variable	N Obs	Mean	Std. Dev.	Q 1	Median	Q 3
Dependent Variables:						
Cash / Net Assets	134,843	0.255	0.654	0.025	0.065	0.188
Log (Cash / Net Assets)	134,843	-2.697	1.695	-3.703	-2.727	-1.674
Cash / Sales	132,600	0.322	1.268	0.017	0.048	0.140
Log (Cash / Sales)	132,577	-2.957	1.787	-4.052	-3.038	-1.965
Cash (in million USD)	134,843	30.642	210.280	0.495	2.314	11.086
Log (1 + Cash)	134,843	1.631	1.508	0.402	1.198	2.492
Explanatory Variables:						
Good Faith	134,843	0.168	0.374	0.000	0.000	0.000
Control Variables:						
Implied Contract	134,843	0.508	0.500	0.000	1.000	1.000
Public Policy	134,843	0.515	0.500	0.000	1.000	1.000
Assets (in million USD)	134,843	845.550	5,253.840	8.472	35.335	159.799
Book Leverage	134,376	0.287	0.255	0.095	0.247	0.405
Profitability	133,936	-0.008	0.459	0.028	0.088	0.141
Working Capital	127,814	0.146	0.262	0.015	0.164	0.313
Dividend Payer	134,385	0.403	0.491	0.000	0.000	1.000
Capex	131,943	0.079	0.084	0.026	0.054	0.101
Market-to-Book	106,016	2.368	3.767	0.793	1.428	2.670
Cash Flow Volatility	112,092	0.072	0.110	0.016	0.032	0.073
State GDP Growth	134,653	0.080	0.037	0.056	0.078	0.102
State per capita GDP	134,653	9.562	0.574	9.106	9.692	10.047
Circuit States' Good Faith	134,843	0.063	0.164	0.000	0.000	0.000

This table presents descriptive statistics for the full sample of observations for the period 1967-1995. *Cash* is cash and cash equivalents. *Cash / Net Assets* is *Cash* divided by *Net Assets*. *Net Assets* is total assets minus *Cash*. *Log (Cash / Net Assets)* is the natural logarithm of the prior variable. *Cash / Sales* is *Cash* divided by *Sales*. *Log (Cash / Sales)* is the natural logarithm of the prior variable. *Log (1 + Cash)* is the natural logarithm of (1+*Cash*). *Good Faith* is a dummy variable equaling one if the state has adopted a good faith exception in the year of analysis, zero otherwise. *Implied Contract* is a dummy variable equaling one if the state has adopted an implied contract exception in the year of analysis, zero otherwise. *Public Policy* is a dummy variable equaling one if the state has adopted a public policy exception in the year of analysis, zero otherwise. *Assets* is the book value of assets, adjusted for inflation. *Leverage* is the book value of long-term debt and short-term debt in current liabilities scaled by total assets. *Profitability* is operating cash flow scaled by *Net Assets*. *Working Capital* is operating current assets minus operating current liabilities scaled by total assets. *Dividend Payer* is an indicator variable set to one if a firm pays a dividend and zero otherwise. *Capex* is capital expenditure scaled by total assets. *Market-to-Book* is the market value of equity divided by the book value of equity. *Cash Flow Volatility* is the standard deviation of the ratio of operating cash flow on total assets over the preceding five years with a minimum of three years of data. *State GDP Growth* is the state-level GDP growth rate over the prior year. *State per capita GDP* is a state's GDP divided by its total population (in thousands). *Circuit States' Good Faith* is the fraction of other states in the same federal circuit region as the firm's headquarters state that have passed the good faith exception by year *t*.

Table 2: Employment Protection and Corporate Cash Holdings

	Base Model	Firm Controls	State Controls	Alternative Dependent Variable	Control Model	
	(1)	(2)	(3)	(4)	(5)	
	log (cash/net assets)	log (cash/net assets)	log (cash/net assets)	log (cash / sales)	log (1 + cash)	
Good Faith	0.059** (0.022)	0.073** (0.033)	0.078** (0.037)	0.103** (0.039)	0.069*** (0.021)	0.089*** (0.032)
Implied Contract	-0.019 (0.034)	-0.017 (0.032)	-0.017 (0.032)	-0.012 (0.033)	-0.008 (0.016)	-0.009 (0.038)
Public Policy	-0.018 (0.023)	0.017 (0.029)	0.015 (0.029)	0.014 (0.030)	0.003 (0.016)	0.019 (0.033)
Log Assets		-0.049* (0.025)	-0.047* (0.025)	0.105*** (0.027)	0.633*** (0.013)	
Book Leverage		-2.219*** (0.105)	-2.216*** (0.106)	-1.967*** (0.115)	-1.185*** (0.054)	
Profitability		0.158*** (0.055)	0.156*** (0.055)	-0.087 (0.060)	0.128*** (0.024)	
Working Capital		-1.592*** (0.119)	-1.591*** (0.119)	-1.471*** (0.108)	-1.207*** (0.071)	
Dividend Payer		0.050* (0.026)	0.049* (0.025)	-0.014 (0.029)	0.042** (0.017)	
Capex		-1.558*** (0.121)	-1.570*** (0.119)	-1.201*** (0.122)	-1.065*** (0.071)	
Market-to-book		0.012*** (0.002)	0.012*** (0.002)	0.012*** (0.002)	0.004*** (0.001)	
Cash Flow Volatility		0.214 (0.132)	0.217 (0.134)	-0.175 (0.163)	0.366*** (0.075)	
State GDP Growth			0.572** (0.228)	0.308 (0.209)	0.404*** (0.106)	
Log GDP per Capita			-0.253 (0.231)	-0.394 (0.243)	-0.140 (0.120)	

Circuit states' Good Faith			-0.004 (0.095)	0.010 (0.087)	-0.056 (0.060)	
Firm Effects	yes	yes	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes	yes	yes
Clustering	state	state	state	state	state	state
Observations	134,843	89,031	88,916	88,917	89,470	88,916
Adj. R-squared	0.528	0.602	0.602	0.648	0.862	0.555

This table presents coefficients and corresponding *t*-statistics of firm fixed effects regressions examining the relation between employment protection laws and corporate cash holdings. The table has six columns: the first three columns and column (6) utilize $\log(\text{cash} / \text{net assets})$ as a dependent variable. Columns (4) and (5) utilize $\log(\text{cash} / \text{sales})$ and $\log(1 + \text{cash})$ respectively. Column (1) is the base model with no control variables, columns (2) and (3) progressively add firm level control variables followed by state level control variables. Column (6) presents a control model where we use the same observations as in column (3). All regressions include controls for firm and year effects (unreported), and standard errors are clustered by state. See appendix A.3 for variable definitions. ***, **, * denote significance at 1%, 5%, and 10% respectively.

Table 3: The Timing of Employment Protection and Corporate Cash Holdings

	(1)	(2)	(3)	(4)	(5)
	log (cash / net assets)	log (cash / net assets)	log (cash / net assets)	log (cash / sales)	log (1 + cash)
Good Faith ^{t-1}	-0.046** (0.023)	0.029 (0.043)	0.030 (0.040)	0.038 (0.040)	0.028* (0.016)
Good Faith ^{t=0}	-0.005 (0.032)	0.033 (0.040)	0.030 (0.040)	0.053 (0.036)	0.018 (0.026)
Good Faith ^{t=1}	0.005 (0.034)	0.015 (0.040)	0.021 (0.046)	0.038 (0.047)	0.027 (0.032)
Good Faith ²⁺	0.064** (0.025)	0.098** (0.040)	0.107** (0.042)	0.144*** (0.043)	0.095*** (0.025)
Implied Contract	-0.009 (0.032)	-0.013 (0.032)	-0.014 (0.031)	-0.009 (0.032)	-0.005 (0.017)
Public Policy	-0.021 (0.023)	0.018 (0.029)	0.016 (0.028)	0.017 (0.030)	0.005 (0.015)
Log Assets		-0.050** (0.025)	-0.048* (0.025)	0.103*** (0.027)	0.633*** (0.013)
Book Leverage		-2.220*** (0.106)	-2.217*** (0.106)	-1.967*** (0.116)	-1.187*** (0.054)
Profitability		0.159*** (0.056)	0.156*** (0.055)	-0.078 (0.061)	0.130*** (0.025)
Working Capital		-1.586*** (0.120)	-1.585*** (0.120)	-1.462*** (0.108)	-1.208*** (0.071)
Dividend Payer		0.050* (0.026)	0.049* (0.025)	-0.015 (0.030)	0.041** (0.017)
Capex		-1.559*** (0.122)	-1.570*** (0.120)	-1.197*** (0.123)	-1.073*** (0.071)

Market-to-book		0.012***	0.012***	0.012***	0.004***
		(0.002)	(0.002)	(0.002)	(0.001)
Cash Flow Volatility		0.202	0.206	-0.173	0.375***
		(0.133)	(0.136)	(0.166)	(0.077)
State GDP Growth			0.592**	0.331	0.413***
			(0.223)	(0.209)	(0.102)
Log GDP per Capita			-0.272	-0.433*	-0.157
			(0.224)	(0.228)	(0.112)
Circuit states' Good Faith			0.002	0.018	-0.048
			(0.094)	(0.086)	(0.058)
Firm Effects	yes	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes	yes
Clustering	state	state	state	state	state
Observations	131,848	88,513	88,398	88,399	88,935
Adj. R-squared	0.530	0.602	0.602	0.648	0.862

This table presents coefficients and corresponding t -statistics of firm fixed effects regressions examining the relation between the timing of employment protection laws and corporate cash holdings. The table has five columns: the first three columns utilize $\log(\text{cash} / \text{net assets})$ as a dependent variable, while columns (4) and (5) utilize $\log(\text{cash} / \text{sales})$ and $\log(1 + \text{cash})$ respectively. Column (1) is the base model with no control variables, columns (2) and (3) progressively add firm level control variables followed by state level control variables. Good Faith^{t-1} is a dummy variable that equals one if it is the year prior to the adoption of a good faith exception. Good Faith^{t=0} is a dummy variable that equals one if it is the year of the adoption of a good faith exception. Good Faith^{t=1} is a dummy variable that equals one if it is the year after the adoption of a good faith exception. Good Faith²⁺ is a dummy variable equal to one if the current fiscal year is two or more years after the adoption of a good faith exception. All regressions include controls for year effects (unreported), and standard errors are clustered by state. See appendix A.3 for variable definitions. ***, **, * denote significance at 1%, 5%, and 10% respectively.

Table 4: Propensity Score Matching

Panel A: Comparisons of Means across Matched Samples

	Pooled Sample All Observations		Matched Sample [-5+5] Pre-Good Faith Year	
	Treatment	Control	Treatment (Obs. = 332)	Control (Obs. = 332)
Log Assets	3.435	3.697***	4.012	3.985
Leverage	0.270	0.293***	0.261	0.258
Profitability	-0.129	0.012***	0.100	0.089
Working Capital	0.102	0.150***	0.247	0.228
Capex	0.076	0.800***	0.078	0.083
Market-to-Book	2.948	2.245***	1.456	1.442
Cash Flow Volatility	0.115	0.066***	0.046	0.044

Panel B: Matched Sample Regressions

	Log (Cash / Net Assets)	Log (Cash / Sales)	Log (1 + Cash)
Postperiod	0.043 (0.049)	0.059 (0.051)	0.011 (0.032)
Postperiod × Good Faith	0.082** (0.039)	0.081** (0.039)	0.068** (0.028)
Control Variables	yes	yes	yes
Firm Effects	yes	yes	yes
Year Effects	yes	yes	yes
Observations	6,577	6,577	6,580
Adj. R-squared	0.506	0.531	0.856

Panel A of this table presents means of all control variables across treatment and control firms for the pooled sample (left two columns) and a sample of 332 treatment and control pairs (right two columns), matched on all firm-specific covariates measured in year $(t-1)$ and where ***, **, * indicates the significance of mean differences in both samples at the 1%, 5% or 10% level. For each treatment firm in year $t-1$, we match a control firm (with replacement) on year, 3-digit SIC industry code and with the closest propensity score (caliper distance <0.01). See appendix A.3 for variable definitions. Panel B of this table presents coefficients and corresponding t -statistics of firm fixed effects regressions examining the relation between the timing of employment protection laws and corporate cash holdings, utilizing the propensity score matched sample. This sample includes observations of the 332 pairs of firms over the 5 years before and after the good faith (pseudo) adoption. The table has three columns: the first three column utilizes $\log(\text{cash} / \text{net assets})$ as a dependent variable, while columns (2) and (3) utilize $\log(\text{cash} / \text{sales})$ and $\log(1 + \text{cash})$ respectively. All regressions include the full set of control variables as per Table 2 column 3 (unreported), and standard errors are clustered by state. ***, **, * denote significance at 1%, 5%, and 10% respectively.

Table 5: Cross-Sectional State and Industry Variation, Employment Protection, and Cash Holdings

Panel A: Dependent variable is log (cash/net assets)

Interaction variable:	Unionization	Industry Volatility	Industry Discharge Rate 5%	Industry Discharge Rate 10 %	Industry Concentration
	(1)	(2)	(3)	(4)	(5)
Good Faith	0.003 (0.044)	-0.001 (0.033)	0.031 (0.048)	-0.102 (0.062)	0.115** (0.046)
Good Faith * Union. Low	0.162*** (0.049)				
Good Faith * Ind. Vol. High		0.152*** (0.047)			
Good Faith * Discharge High			0.077* (0.039)		
Good Faith * Discharge High				0.247*** (0.079)	
Good Faith * Ind. Conc. Low					0.071* (0.038)
Firm Controls	yes	yes	yes	yes	yes
State Controls	yes	yes	yes	yes	yes
Firm Effects	yes	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes	yes
Cluster	state	state	state	state	state
Observations	88,916	88,916	88,916	88,916	88,916
Adj. R-squared	0.602	0.602	0.603	0.602	0.603

Panel B: Dependent variable is log (cash/sales)

Interaction variable:	Unionization	Industry Volatility	Industry Discharge Rate 5%	Industry Discharge Rate 10 %	Industry Concentration
	(1)	(2)	(3)	(4)	(5)
Good Faith	0.047 (0.046)	0.024 (0.033)	0.047 (0.039)	-0.097 (0.075)	0.132*** (0.042)
Good Faith * Union. Low	0.119** (0.053)				
Good Faith * Ind. Vol. High		0.152*** (0.043)			
Good Faith * Discharge High			0.092*** (0.031)		
Good Faith * Discharge High				0.275*** (0.102)	
Good Faith * Ind. Conc. Low					0.057 (0.038)
Firm Controls	yes	yes	yes	yes	yes
State Controls	yes	yes	yes	yes	yes
Firm Effects	yes	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes	yes
Cluster	state	state	state	state	state
Observations	88,917	88,917	88,917	88,917	88,917
Adj. R-squared	0.648	0.648	0.648	0.648	0.648

Panel C: Dependent variable is log (1+cash)

Interaction variable:	Unionization	Industry Volatility	Industry Discharge Rate 5%	Industry Discharge Rate 10 %	Industry Concentration
	(1)	(2)	(3)	(4)	(5)
Good Faith	0.025 (0.021)	0.024 (0.027)	0.063** (0.031)	-0.007 (0.063)	0.099*** (0.028)
Good Faith * Union. Low	0.089*** (0.031)				
Good Faith * Ind. Vol. High		0.088** (0.043)			
Good Faith * Discharge High			0.014 (0.029)		
Good Faith * Discharge High				0.106* (0.061)	
Good Faith * Ind. Conc. Low					0.057** (0.022)
Firm Controls	yes	yes	yes	yes	yes
State Controls	yes	yes	yes	yes	yes
Firm Effects	yes	yes	yes	yes	yes
Year Effects	yes	yes	yes	yes	yes
Cluster	state	state	state	state	state
Observations	89,470	89,470	88,470	89,470	89,470
Adj. R-squared	0.862	0.862	0.862	0.862	0.862

This table presents coefficients and corresponding *t*-statistics of firm fixed effects regressions examining the interacting effect of employment protection laws and industry characteristics on corporate cash holdings. Panel A shows results for log (cash/net assets) as the dependent variable, Panel B for log(cash/sales) and Panel C for log(1+cash). Column (1) tests the interaction with unionization rates, column (2) with industry volatility, columns (3) and (4) with industry discharge rates of 5% and 10%, and column (5) with industry concentration. All variables are defined in Appendix A.3. All regressions also include the main effect of each cross-section but these are not tabulated for brevity. Control variables as per Table 2 column 3 are included but also not reported for brevity. Standard errors are clustered by state. ***, **, * denote significance at 1%, 5%, and 10% respectively.

Table 6: The Value of Cash Holdings and Employment Protection Changes

	Excess Returns	Excess Returns
	(1)	(2)
Good Faith	0.007 (0.015)	0.008 (0.016)
Δ Cash	0.754*** (0.071)	0.713*** (0.055)
Good Faith x Δ Cash		0.177*** (0.039)
Δ Profitability	0.291*** (0.015)	0.292*** (0.015)
Δ Net Assets	0.022*** (0.003)	0.022*** (0.003)
Δ R&D	0.926*** (0.108)	0.884*** (0.096)
Δ Interest	-0.902*** (0.041)	-0.901*** (0.041)
Δ Div	1.383*** (0.169)	1.420*** (0.164)
Cash (t-1)	0.465*** (0.033)	0.465*** (0.032)
Market Leverage	-0.895*** (0.026)	-0.894*** (0.026)
New Finance	0.154*** (0.013)	0.153*** (0.013)
Market leverage x Δ Cash	-0.553*** (0.132)	-0.534*** (0.125)
Cash (t-1) x Δ Cash	-0.330*** (0.034)	-0.326*** (0.034)
State GDP Growth	0.513*** (0.118)	0.512*** (0.117)
Log GDP per Capita	-0.237*** (0.060)	-0.238*** (0.060)
Circuit states' Good Faith	-0.036 (0.032)	-0.037 (0.033)
firm effects	yes	yes
year effects	yes	yes
cluster	state	state
Observations	51,481	51,481
Adj. R-squared	0.266	0.267

This table presents coefficients and corresponding t -statistics of firm fixed effects regressions examining the relation between excess returns, employment protection laws and corporate cash holdings. The dependent variable is always

excess stock return calculated by subtracting out the return of a portfolio matched on size and market-to-book as in Faulkender and Wang (2006). The breakpoints for the 25 portfolios on size and market-to-book are from Kenneth French's website: <https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/>. Variables measured in changes are indicated with Δ and measured as the current value minus the lagged value. All variables are defined in Appendix A.3. Standard errors are clustered by state. ***, **, * denote significance at 1%, 5%, and 10% respectively.

Table 7: The Value of Cash Holdings, Employment Protection Changes and Financial Constraints

	<i>Financial Constraints Indicator (FCI):</i>		
	Whited-Wu	Log Assets	Firm Age
	Excess Returns	Excess Returns	Excess Returns
	(1)	(2)	(3)
Good Faith	0.086*	0.088	-0.039
	(0.046)	(0.055)	(0.047)
Δ Cash	0.767***	0.767***	0.807***
	(0.052)	(0.055)	(0.057)
Good Faith x Δ Cash	0.333***	0.387***	0.341***
	(0.090)	(0.095)	(0.080)
<i>FCI</i>	1.362***	-0.120***	0.012**
	(0.095)	(0.008)	(0.004)
Good Faith x <i>FCI</i>	0.265**	-0.014	0.003
	(0.130)	(0.009)	(0.002)
Δ Cash x <i>FCI</i>	0.574***	-0.028**	-0.010***
	(0.188)	(0.011)	(0.002)
Good Faith x Δ Cash x <i>FCI</i>	0.903**	-0.051**	-0.017**
	(0.396)	(0.022)	(0.007)
control variables	yes	yes	yes
firm effects	yes	yes	yes
year effects	yes	yes	yes
cluster	state	state	state
Observations	51,481	51,481	51,481
Adj. R-squared	0.276	0.278	0.268

This table presents coefficients and corresponding *t*-statistics of firm fixed effects regressions examining the relation between excess returns, employment protection laws, corporate cash holdings and financial constraints. The dependent variable is *excess returns*, as in Table 6. Variables measured in changes are indicated with Δ and measured as the current value minus the lagged value. All variables are defined in Appendix A.3. All regressions include the full set of control variables as per Table 6 (unreported). Standard errors are clustered by state. ***, **, * denote significance at 1%, 5%, and 10% respectively.