

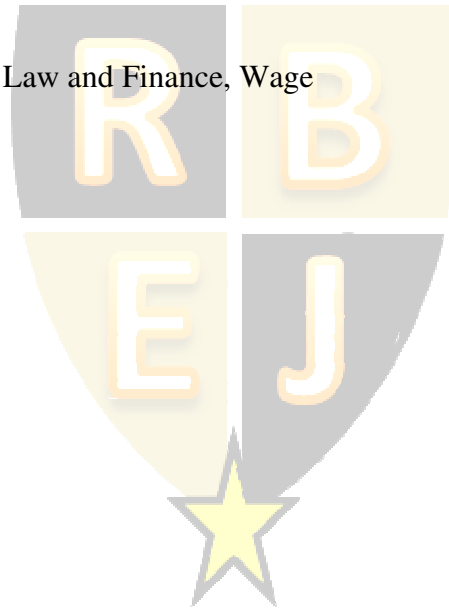
## Effect of Job Security on Firm Value: Evidence from Wrongful Discharge Law

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### ABSTRACT

Using Wrongful Discharge Law (WDL) adoption as an exogenous change, this paper examines how increased employee protection affects the firm value. A difference-in-difference method suggests that increased protection allows employers to reduce premiums for unemployment risk, resulting in lower wages and lower firm value after the adoption of WDL. A decrease in firm value could be attributed to the reduced effort after receiving a lower wage. The finding is robust to various tests and different samples using financial firms. The results suggest that increases in employee protection may work against enhancing firm value and harm shareholders' wealth.

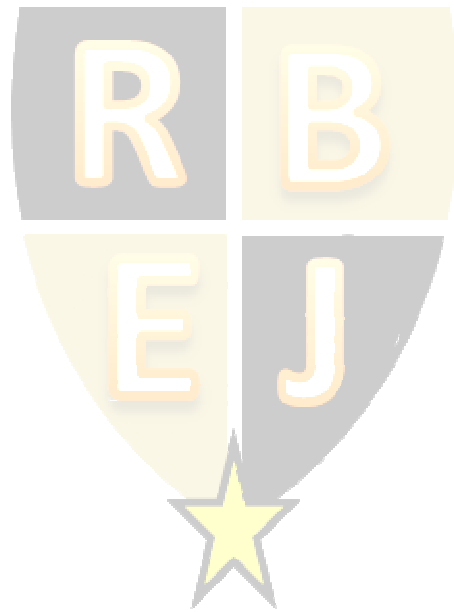
Keyword: WDL, Job Security, Law and Finance, Wage



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## INTRODUCTION

Do firms benefit from providing employees with increased job security? With the consumption risk at hand, employees of the firm should be concerned with both wage level and job security of the firm for which they decide to work. Therefore, from workers' perspectives, a legal change that may increase job security should, *ceteris paribus*, improve the marginal utility of workers. However, from a firm's perspective, whether there exists a marginal benefit or cost with respect to the change in the level of job security is inconclusive, with mixed evidence from previous studies. Theoretically, a perfect, frictionless financial market should make any employee protection laws (EPL) redundant as the employee could always find perfect insurance and be insured against unemployment risk faced by dedicating to work for a certain firm. As the insurance is provided by the outside market, the impact of EPL on corporate behavior should be negligible, if not at all. Similarly, in the rational firm argument, if a firm is required to provide severance pay at the end of the employment contract, an employer could ask the employee to pay upfront the equivalent amount of severance pay at the beginning of the employment contract, also resulting in no impact on the firm value (Lazear (1990)). However, as a real financial market is imperfect, Bertola (2004) argues that while it may be redundant, the overall welfare level may increase with some degree of EPL provided by the government, proving the worth of EPL at the aggregate economic level. However, for firms, current research on the effect of employee protection on firm value remains largely inconclusive. Some find that increased job security brings about more risk-taking behavior of employees by reducing hold-up problems of incomplete contracts, thereby increasing innovation and the number of patents in the firm (Acharya, Baghai, and Subramanian (2014)). If a change in the level of job security is perceived as the increase in perquisite that the firm provides to the employees, there is another set of evidence that treating employees well and increasing employee benefits may increase the return of the firm's stock and the marginal value delivered to the shareholders, not only both for U.S. firms but for also international firms in developed countries (Edmans (2011), Edmans, Li and Zhang (2014), Fauver, McDonald and Taboada (2017)). Meanwhile, other studies find that increased employee protection reduces the firm's total factor productivity while employment stagnates (Autor, Kerr, and Kugler (2007)).

Therefore, although various aspects of job security and employee benefit are studied in the finance literature, previous studies on changes in job security level do not provide a precise prediction or decisive conclusion on the impact of increased security of employees on a firm's value. To fill the gap, this study investigates the impact changes in employee protection have on the value of the firm and evaluate whether a decisive conclusion could be drawn from the empirical test. However, since the firm's labor decision may endogenously be determined depending on the firm's level of financial constraints or growth opportunity, a naïve approach to simply comparing the relative employment or wage to the value of the firm would provide no meaningful conclusions. To tease out the relevant relationship between job security and firm value, the study exploits an adoption of state-level Wrongful Discharge Law as an exogenous shock to the level of employment protection and evaluate the impact this shock has on the value of firms. Wrongful Discharge Law (WDL) is known to increase the expected firing cost of the firm and has been extensively used as an exogenous shock in various studies as a proxy for increased employee protection. In addition, to examine possible channels in which the firm's value may be affected, this study evaluates whether the shock to job security affects wage level in a way that affects the value of firms.

Using staggered state adoption of WDL as a shock, the difference-in-difference (DID) empirical method suggests that the firm value decreases and wage level decreases compared to the previous level when the wrongful discharge law was in place. This finding is consistent with the argument that increased employee protection with the adoption of the law frees employers from having to compensate employees for the unemployment risk and thus provide lower wages than before the adoption of the law. This reduction in wage level, in turn causes firm values to decrease due to the reduced effort level exerted by the employee with a lower level of wage. This lowered effort level is partially backed by the separate study carried out by Autor, Kerr, and Kugler (2007). They find meaningful decreases in the total factor productivity after the adoption of the same sets of WDL, suggesting that the lowered effort explanation as a channel in the reduction of firm value may be valid. To further validate the finding, the impact of differing magnitude of past wage changes and the degree to which the firm value is affected are examined. The test results confirm that firms that had the tendency to change wages to a higher degree or in greater volatility experienced larger declines in the firm value after the adoption of WDL, confirming that the effort level change brought forth by wage change is the channel. To further test that changes in employee number are not the source of the channel in which the firm value is affected, a similar test using the number of employees instead of wage level is run and finds mixed results, unlike the analysis on wage change with different magnitude. Overall, evidence from various tests indicates that an increase in job security reduces firm value through wage channel.

A strand of research that considers non-financial stakeholders as an important factor in corporate behavior has continued since Titman (1984) first documented the possible impact that the supplier relationship and employees may have on firms' capital structures. Bae, Kang, and Wang (2011) evaluate the degree of impact that employee treatment has on firms' leverage, and they find that when the employee treatment rating is higher, the firm maintains a lower level of leverage. In a very closely related paper by Serfling (2016), he finds that the increased firing costs from the adoption of WDL subsequently reduce the leverage of the firm due to the increased concern arising from potential financial distress costs. WDL adoption itself has been widely used as a source of exogenous variation in labor economics. However, prior studies focused primarily on labor economics variables such as employment level at the state level, productivity, or wage (Dertouzos and Karoly (1992), Autor, Donohue and Schwab (2006), Autor, Kerr and Kugler (2007)). Another thread of closely related study would be evaluating the employee treatment and satisfaction on the return delivered to the shareholder (Edmans (2011), Edmans, Li, and Zhang (2014), Fauver, McDonald, and Taboada (2017)). The current research adds a marginal contribution to these literatures by evaluating a relationship between employee protection and the effect on the firm's value.

The remainder of the paper is organized as follows. Section 2 discusses the details of the Wrongful Discharge Law and hypothesis development. Section 3 describes the dataset and methodology used to test the hypotheses. Section 4 discusses the results of the test, and section 5 concludes.

## INSTITUTIONAL DETAIL AND HYPOTHESES

### Institutional Detail – Employment-at-will exception Law

Traditionally, the dominating employment practice in the United States has taken the form of at-will employment, where the employer could discharge an employee without any reason and at any time. This practice bases its rationale on the fact that the employer should be entitled to a similar degree of right as the employee who may quit the work at any time without reason or notice to the employer. However, at-will employment practice was deemed unjust by those who considered the employment relationship as bargaining between two parties with unequal power. While it was a common practice during the late 19<sup>th</sup> century to protect employees from wrongful dismissal practices by employers, states started to recognize exceptions to the employment-at-will rule during the 20<sup>th</sup> century. These exceptions eventually developed into three distinct laws and were adopted by the state court in the 1970s. The good faith exception originates from the legal theory that there exists an implied promise of good faith and fair dealing between employer and employee relationship. This exception requires the employer to treat employees fairly and not to release them out of bad faith, malice, or retaliation or derive employees from their earned benefits during employment. Implied contract exception stands to provide some exceptions when an employer has made an implicit promise regarding the tenure or discharge of the employee. These implied contracts can be oral and could be related to salary or employment tenure. Public policy exception protects from wrongful termination when an employee refuses to break the law, commits a crime, or violates established public policy. The basic idea is to protect employees from being wrongly discharged after performing a public service, even if such action goes against the will or interest of the employer.

Because the connection between the Wrongful Discharge Law and job security is not clear, examining past legal liabilities resulting from past WDL cases may help illustrate the possible magnitude of the cost that an employer must bear once proven guilty. Dertouzos, Holland, and Ebener (1988) review WDL trials in California from 1980 to 1986. Plaintiffs win in 68% of the trials and, on average, are awarded \$650,000, of which about 40% make up punitive damages that plaintiffs had to suffer. These amounts are significant to employees and quite large to employers as well because the annual average salary of a plaintiff in their sample is about \$36,254. In another study, Jung (1997) investigates WDL jury verdicts in California and Texas between 1992 and 1996. In California, plaintiffs win 54% of the cases brought to trial. Average compensatory damages are approximately \$449,000, whereas average punitive damages are about \$675,000. Such awards were not exclusive to California (Edelman, Abraham, and Erlanger (1992); Abraham (1998)). Overall, the evidence indicates that WDL-related trials, especially when punitive damages are applied, can be costly for employers and that WDL has erected substantial protection to employment-at-will practice and increased job security.

Table 1 provides the passage dates of each type of wrongful discharge law for respective states. Since each type of exception law is common law, legal literature recognizes the date of ruling outcome for certain cases related to each type of the law as the adoption date. However, as there exists a time lag between the court ruling and the information to be passed to the legal department of companies that may be affected, many of the studies that utilize the WDL only specify the event up to month and year.

Out of these three exceptions, good faith exception law is claimed to be the most far-reaching in the sense that this rule provides a baseline that the termination must be based on a

"just cause" standard and expand the set of situations where the employee may be able to sue the company. In addition, while the burden of proof lies on the employee side for the other two, the burden lies on the employer side with the good faith exception, making the dismissal of the employee more difficult and possibly costlier since an employee can recover not only the contractual loss from employment but also any compensation arising from emotional stress or punitive damages. For these reasons, in his study in relation to the leverage of the firm, Serfling (2016) finds significant results with the Good Faith treatment compared to the other two exception provisions. However, studies conducted in a legal context provide evidence that puts more emphasis on the implied contract being the most influential of all three exception laws (Dertouzos and Karoly (1992)). The main argument for such a claim is that implied contract exception law resulted in more explicit labor contracting between the employer and the employee, changing the employment practice. As a result, in one of the legal research that examined the impact of the same set of Wrongful Discharge Laws on employment and wage, Autor, Donohue, and Schwab (2006) find a significant impact of implied contract exception law than the other two, good faith and public policy law. Due to these contrasting previous findings depending on the objective of the study, this study examines the impact of all three exception laws at the same time for all empirical tests conducted in the paper.

### **Hypotheses development**

This paper investigates how increased employee protection from the adoption of WDL is associated with wage expense and may affect the value of the firm. It is an interesting question to ask because there are mixed predictions on the possible relationship between wage and job security. One set of studies argues that since the unemployment risk is a large concern for the employee, workers will demand a premium in wage or benefit for the potential job loss in their labor contract (Topel (1983), Abowd and Ashenfelter (1981), Agrawal and Matsa (2013)). Therefore, increased job security from the WDL adoption would partly reduce the unemployment risk borne by the employee and eliminate the required compensation from the remuneration of labor provided, suggesting a negative relationship between WDL and the wage expense of the firm.

Meanwhile, because the adoption of the WDL introduces higher labor adjustment costs (i.e., the firing of incumbent workers, education of new workforce when hired, etc.), employment activity may stagnate, and firms may have to stick with the incumbent labor force (Autor, Kerr, and Kugler (2007)). Understanding the increased perception of job security from the adoption of WDL, employees may demand a higher level of wage that they could not dare previously in fear of losing their job, suggesting a positive relationship between WDL adoption and wage. While it may seem counterintuitive at first glance, Aaronson and Sullivan (1998) find, in their survey study, that the wage growth of the firm is negatively related to the perceived likelihood of displacement by the employee. Although they agree that the result may be tentative due to the limited number of samples, the authors make a clear point on the fact that wage bargaining is closely related to the degree of job security, as employees would be better off working with lower wages than losing the job itself. Since both positive relationship and negative relationships are consistent with literatures on the issue so far, empirically investigating the relationship between wage and increased job security would be interesting.

While previous studies provide contrasting predictions on the relationship between the adoption of WDL and wages, it is obvious that both predictions would lead to a decrease in the

value of the firm. If the firm reduces the portion of wage that was previously compensated due to unemployment risk, employees of such a firm would, in turn, reduce the amount of effort put into the work, decreasing the value of the firm (Akerlof (1982), Akerlof and Yellen (1990), Rabin (1993), Hannan (2005)). Consistent with this argument, in a very closely related study done by Autor, Kerr, and Kugler (2007), they find that the total factor productivity decreases after the adoption of the law. Meanwhile, if the adoption of WDL causes the employee to demand higher wages due to the increase in perceived job security, the increase will cause a rise in operating leverage of the firm, negatively affecting firm value with increase in inefficiency.

If wage change arising from the different levels of job security is indeed a channel that impacts the firm value, the presumption is that the individual firm's different inclinations in its magnitude of past wage adjustment would result in different degrees of impact on firm value by the adoption of WDL. This hypothesis bases its argument on the same crucial assumption that the difference-in-difference (DID) method also bases its validity on, which is the continuing parallel trend assumption. DID methodology relies heavily on the assumption that should the treatment or intervention not have occurred in the treated group, the same trend would have continued for both the treated and control groups. Therefore, it is reasonable to assume past inclination in wage adjustment would have continued for each individual firm and is affected differently by the adoption of WDL. As for the direction of the relationship, Akerlof and Yellen (1990) suggest that employees will proportionately put less effort as the wage level decreases. Therefore, should wages be negatively affected by the adoption of WDL, the value of those firms that used to adjust wages at higher levels would be more negatively affected by wage change brought forth by the job security and firing cost. On the other hand, if we observe a relative increase in wage level after the adoption of the law, those firms that had less degree of wage and employment adjustment will suffer from the WDL adoption more, as those are the firms that had been sluggish with its labor adjustment and would be bear more inefficiency arising from the increased wage. Since each side of the argument provides different predictions, comparing the impacts of wage change on the firm value from subsamples with different magnitudes of past change may further validate the linkage between the effect from the job security and wage have on the firm value. While one cannot always assume that the existence of monotonicity may not always guarantee the existence of the association, testing for the magnitude would indirectly provide evidence in support of the relationship between job security and firm value through wage channel. To sum up, this study intends to test the following hypotheses;

H1: With the introduction of the Wrongful Discharge Law against employment-at-will and increased relative job security, wages will decrease due to the reduced unemployment risk the firm must compensate for.

H1<sub>Alternate</sub>: With the introduction of the Wrongful Discharge Law against employment-at-will and increased relative job security, wages will increase due to increased demand.

H2: A decreased wage would induce employees to put less effort into the work and, in turn, negatively affect the overall firm value.

H2<sub>Alternate</sub>: Increased wage for the incumbent employee increases the inefficiency of the firm and negatively affects the overall firm value.

H3: Firms that have more actively adjusted wages in the past would be more negatively affected by the adoption of WDL, as persisting past practices would induce the firms to reduce wages to a larger extent if the overall wage level decreases after the adoption of WDL.

H3<sub>Alternate</sub>: Firms that have more actively adjusted wages in the past would be more positively affected by the adoption of WDL, as higher past labor adjustment reduced the set of labor force inefficiencies that would have otherwise been increased by WDL.

## DATA & METHODOLOGY

### Data

In order to test the hypotheses on the relationship between job security and the value of the firm, the data is obtained from Compustat Annual data starting from 1970 to 1998 to include U.S.-incorporated non-financial firms. While the sample period is very similar to that of the one used by Serfling (2016), the study extends the sample year to include the latest passage event (Louisiana's good faith exception passage was in 1998). This is done mainly to include as many of the samples available in the analysis as possible when using wage variables. All variables in the analyses are winsorized at a 99% level at both top and bottom, except for the indicator variables, which consist of zero and one. wage variable is adjusted for inflation as of the 1998 dollar, using the CPI index. Table 2 presents the summary statistics of firms included in the analysis. Good Faith is an indicator variable set equal to one if the state in which the institution is based has passed the Good Faith exception law by year  $t$ . Implied Contract is an indicator variable set to one if the state in which the institution is based has passed the Implied contract exception law by year  $t$ . Public Policy is an indicator variable set equal to one if the state in which the institution is based has passed the Public Policy exception law by year  $t$ . A detailed description of the accounting variable is explained in Appendix A.

From the number of observations, it is easy to notice that wage has the most limiting sample. Wage here is defined as the firm's total salary expense (XLR) divided by the number of employees (emp), basically indicating an average wage for the employee for the firm. While the total staff expense data (Compustat item: xlr) is reported by firms in the dataset, the total number of firms that report the item is quite small, consisting of up to only 10% of the firm-year observation even with the final sample.

### Empirical Methodology

The main empirical tool used throughout this study is a difference-in-difference regression design to evaluate the relative change in the variable of interest with the adoption of the Wrongful Discharge Law. Specifically, the following panel regression specification is estimated;

$$Firm\ value_{ist} = \alpha_1 GoodFaith_{st} + \alpha_2 ImpliedContract_{st} + \alpha_3 PublicPolicy_{st} + X_{ist}\beta + \gamma_i + \lambda_t + \epsilon_{ist} \quad \dots (1)$$

where  $Firm\ value_{ist}$  is the measure of the value of the firm, and  $GoodFaith_{st}$  is the indicator variable for whether the state in which the firm is headquartered has passed the good faith exception law or not. Similarly, both  $ImpliedContract_{st}$  and  $Public\ Policy_{st}$  represent the indicator variables for whether the state in which the firm is headquartered in has passed the implied contract or public policy exception law, respectively.  $X_{ist}$  represents a set of controls for the test,  $\gamma_i$  for the firm-fixed effect,  $\lambda_t$  for the year-fixed effect, and  $\epsilon_{ist}$  for the error term, respectively. The same specification with a change in the dependent variable to wage and other



possible proxies is estimated to gauge the impact WDL adoption has on wage level. For the measure of firm value, I utilize both Tobin's q and market-to-book value to measure the value of the firm. To measure the average wage instead of the total labor expense, I divide the total wage expense by the number of employees to proxy for the average wage level of specific firms. In order to address omitted variable bias in the test of the hypotheses, I refer to previous studies that also used WDL adoption as an exogenous change for the control variables in the regression (Autor, Donohue, Schwab (2006), Autor, Kerr, Kugler (2007), Acharya, Baghai and Subramanian (2014), Serfling (2016)). A detailed definition of the variable is described in Appendix A.

## RESULTS

Table 3 presents the result of the test of the first hypothesis, evaluating the impact of increased job security and firing costs from the adoption of WDL on the firm's employment and wage level. Columns 1 and 2 test whether the adoption of the WDL causes any change in the number of employees hired by the firm. Consistent with previous labor economics studies that examine the employment effect, I find employment stagnates, not providing any meaningful changes before and after the adoption of the law. The reason for the stagnation is indeed due to increased job security from the increased firing cost firms would want to avoid. However, since firms must also deal with the inefficiency arising from the more rigid labor adjustment, no new hiring will be carried out by the firms, causing no significant change after the adoption of the law.

One of the issues with the Compustat database when employee wage is the variable of interest is that Compustat data for non-financial firms does not report the Total Staff Salary Expense very extensively. While the item itself exists, less than 1% of the firm or less than 10% of total firm-year observation is reported with wage data. Therefore, the test with this limited wage variable may seriously hamper the investigation of the true relationship between firm-level outcomes and WDL law. The second-best measure that could proxy for wage of a non-financial firm could be Selling, General, and Administrative Expenses (SG&A), which may contain the salary of staff who are not involved in the production stage. To validate the relationship between WDL and wage, in addition to the existing wage variable, I use SG&A as the dependent variable in Table 3.

With the limited number of samples of firms with wage data, I still find a significant result: the increased job security arising from the adoption of WDL is negatively associated with wage for the employee. Specifically, the adoption of the implied contract law caused wage to drop, while the adoption of the other two laws showed insignificant results, with public policy law being a negative sign. This result is consistent with the underlying mechanism that because of the increased job security, firms now do not have to compensate for the unemployment risk and decrease wage level for the employee after the adoption of the law. While SG&A provides the coefficients with expected signs, it lacks statistical significance. This statistical insignificance may be acceptable as SG&A may not be the best proxy for wage expense of the firm after all.

Table 4 presents the result of the impact that WDL has on the firm value, measured by q and market-to-book value. Columns 1 to 4 contain the results from using q as the dependent variable, and 5 to 8 contain the market-to-book ratio. The methodology applied here is a difference-in-difference technique for the set of firms that were headquartered in the states that passed respective WDLs against ones that did not. Columns 1 and 5 contain the result of

regression without any control but only with firm and year-fixed effects. With this specification, I do not find much impact of WDL on the firm value. With proper controls, however, I find the result that the adoption of WDL is negatively associated with the value of the firm that was affected by them relative to the group that did not for both of the dependent variables. Specifically, I find that the implied contract law has a negative and significant impact on the value of the firm when measured with both  $q$  and market-to-book ratio. To check for whether wage or SG&A affects the result particularly, I separately include wage and SG&A for additional controls and find that while coefficients for them are significant, the general result is unaffected.

It is interesting to note that the passage of both good faith law and implied contract exception in other neighboring states that belong to the same legal federal circuit has a significant impact on the value of the firm, regardless of the state's passage of the good faith law. Each of the variables represents the fraction of the passage of each type of different WDLs (good faith, implied contract, public policy) in other states in the same federal legal circuit region other than the firm's headquarters state by year  $t$ . I presume the result represents the hint of labor mobility caused by the adoption of each discharge law. As it has been shown that wage level would decrease with the adoption of WDL in one state, implied contract to be more specific, those skilled and mobile labor force will move to neighboring states to seek higher wages. This line of argument is well-developed in labor economics, and income convergence due to labor mobility may slow down if the mobility is higher, making an individual's incentive for seeking higher wages stronger (Rappaport (2005)). Overall, the results from wage and firm value seem to suggest that the decrease in firm value is due to the reduced effort level by the firm's employees after facing the reduction in wage level post-adoption of the WDLs.

To test for Hypothesis 3, I next turn to the magnitude of past change in wage and employment and evaluate whether there is a magnifying effect on the effect of firm value depending on the firm's past behavior. Table 5 presents the result of DID regression on the value of the firm proxied by  $q$  and market-to-book value in two separate sets of subsamples based on two separate criteria. For columns 1 to 4, I divide the firm into two distinct groups depending on whether their year-to-year absolute percentage change in wage level was above the median or not in a given year compared to the previous year. If the percentage change is above the median, the firm belongs to the above-median group and vice versa. Likewise, for columns 5 to 8, I divide the sample into two subgroups depending on whether their standard deviation of the past four year's wage is above the 70<sup>th</sup> percentile or lower than the bottom 30<sup>th</sup> percentile. If the standard deviation is higher than the 70<sup>th</sup> percentile, I put the sample into the "More Volatile" subgroup, and vice versa. Here, I expect to find those groups of firms that have the tendency to make higher adjustments to wage variables to be more negatively affected by the adoption of WDL with respect to their firm value.

In line with the expectation, I find that the firms that had more volatile change or more absolute change were more negatively affected by the adoption of WDL. Specifically, I find that the firms that tended to change wage higher year to year or had more volatility on wage for the past four year are more negatively affected by the increased job security that those firms which had smaller changes in the past. I believe the result is due to the fact that past habit of adjustment would have resulted the similar degree of change after adoption of WDL, causing higher adjusting firm to decrease wage more, and in turn depressing the value of the firm further, indirectly confirming wage be the one of the possible channel that the firm value is affected by the adoption of WDL.

To further validate that indeed wage, but not other variable like employment, is the source that is impacting the value of the firm, I run the same set of test as in Table 5 to examine the impact of employment adjust to the firm value with the subsamples whose past tendency has been different. Specifically, I divide the firm into two distinct group depending on whether their year to year absolute percentage change in the number of employees level was above median or not in a given year, compared to the previous year. If the percentage change is above median, the firm belongs to the above median group and vice versa. Similarly, I divide the sample into two subgroups depending on whether their standard deviation of past 4 year's employment is above 70<sup>th</sup> percentile or lower than bottom 30<sup>th</sup> percentile. If the standard deviation is higher than 70<sup>th</sup> percentile, I put the sample into "More Volatile" subgroup and put the firm into "Less volatile" group if the standard deviation is less than 30<sup>th</sup> percentile.

The result of DID regression of the subsamples based on its employment change is reported in Table 6. Unlike before, we see mixed result with respect to the magnitude of adjustment with the level of employee in the firm. From the adoption of the good faith law, if the firm's percentage change in the employee level was higher than the median, the firm value was positively affected by such adoption. I believe the reason is because the firm could adjust its labor force more actively before the firing became harder and the manager of the firm could improve the value, unlike the ones that were not able to adjust as actively. The interpretation of the result with respect to the past standard deviation result is bit trickier than the simple percentage change. First, it is reasonable to observe that the firm value would be negatively affected by the smaller adjustment practice in the past represented by less volatile standard deviation of the employee number, as the firm is sitting on its inefficient labor force that the manager now is faced with increased difficulty in firing them. And I believe the generally negative result on the more volatile firms may indirectly indicate the increased security and firing cost that the more actively adjusting firm had to bear after adoption of the law. However, as the direction of the association is not one-sided and unclear, I believe that the employment is not the channel of which the firm value was affected by the adoption of WDL.

## **CONCLUDING REMARK**

Using Wrongful Discharge Law (WDL) adoption as an exogenous change, I examine how increased firing cost and thus increased employee protection affects value of the firm. I find that the overall increase in the job security causes wage level to drop relative to those group that was not affected by the law, due to reduced necessity for the firms to compensate for the unemployment risk. I also find that the adoption of the law caused firm value to decrease, partly due to the less effort put by the employee with decreased level of wage. The negative relationship between the increased job security, and equivalently increased firing cost, and firm value seem to be supported by the additional evidences provided. The result suggests that when considering the change in employment practice by the firm, it would be beneficial for the shareholder to be mindful of the fact that increase in employee protection may work against enhancing firm value and may be harmful to shareholder's interest.

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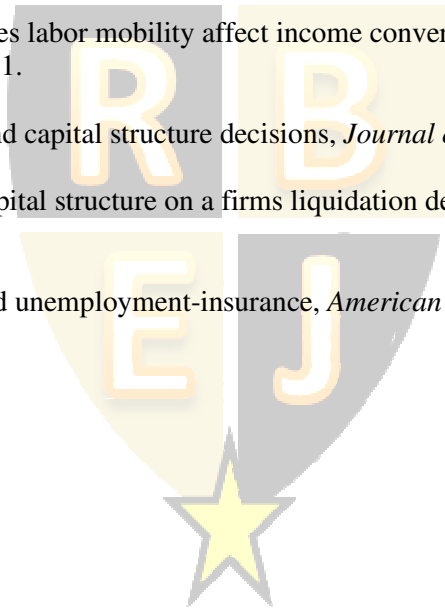
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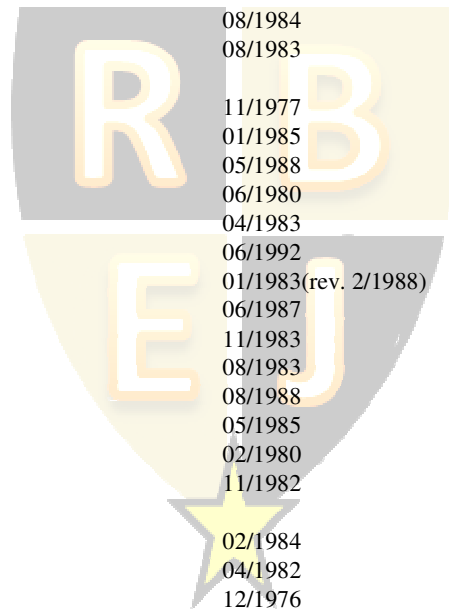
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**Table 1. Employment-at-will exception clause law passage by U.S. states**

This table summarizes the date when each state passed each exception law against traditional employment-at-will rule. Source: Serfling (2016)

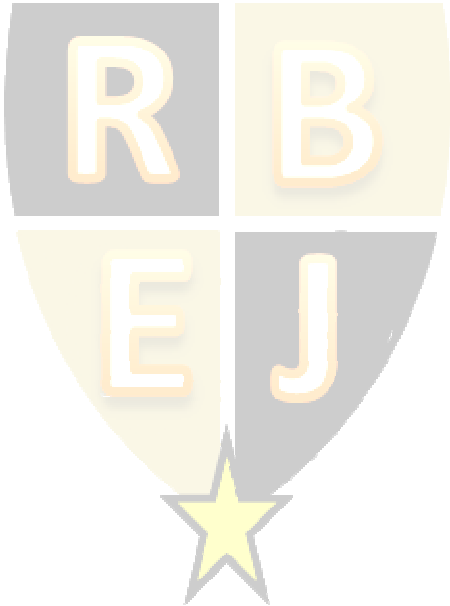
States	Good Faith Exception Passed	Implied Contract Exception Passed	Public Policy Exception Passed
Alabama		07/1987	
Alaska	05/1983	05/1983	02/1986
Arizona	06/1985	06/1983(rev. 4/1984)	06/1985
Arkansas		06/1984	03/1980
California	10/1980	03/1972	09/1959
Colorado		10/1983	09/1985
Connecticut	01/1985	10/1985	01/1980
Delaware	04/1992	03/1992	03/1992
Florida			
Georgia			
Hawaii		08/1986	10/1982
Idaho	08/1989	04/1977	04/1977
Illinois		12/1974	12/1978
Indiana		08/1987	05/1973
Iowa		11/1987	07/1985
Kansas		08/1984	06/1981
Kentucky		08/1983	11/1983
Louisiana	01/1998		
Maine		11/1977	
Maryland		01/1985	07/1981
Massachusetts	07/1977	05/1988	05/1980
Michigan		06/1980	06/1976
Minnesota		04/1983	11/1986
Mississippi		06/1992	07/1987
Missouri		01/1983(rev. 2/1988)	11/1985
Montana	08/1983	06/1987	01/1980
Nebraska		11/1983	11/1987
Nevada	02/1987	08/1983	01/1984
New Hampshire	02/1974	08/1988	02/1974
New Jersey		05/1985	07/1980
New Mexico		02/1980	07/1983
New York		11/1982	
North Carolina			05/1985
North Dakota		02/1984	11/1987
Ohio		04/1982	03/1990
Oklahoma	05/1985	12/1976	02/1989
Oregon		03/1978	06/1975
Pennsylvania			03/1974
Rhode Island			
South Carolina		06/1987	11/1985
South Dakota		04/1983	12/1988
Tennessee		11/1981	08/1984
Texas		04/1985	06/1984
Utah	03/1989	05/1986	03/1989
Vermont		08/1985	09/1986
Virginia		09/1983	06/1985
Washington		08/1977	07/1984
West Virginia		04/1986	07/1978
Wisconsin		06/1985	01/1980
Wyoming	01/1994	08/1985	07/1989



**Table 2. Summary Statistics of Variables**

This table summarizes the descriptive statistics of main variables used in the analysis. Data is from Compustat Annual database from 1963 to 1998. Good Faith is an indicator variable set equal to one if the state in which the institution is based has passed the Good Faith exception law by year t. Implied Contract is an indicator variable set to one if the state in which the institution is based has passed the Implied contract exception law by year t. Public Policy is an indicator variable set equal to one if the state in which the institution is based has passed the Public Policy exception law by year t. Employee is the number of employees in thousand. Wage is the total salary expense (xlr) divided by the number of employee. All accounting variables (Cash, Capex, Profitability, ROA, R&D, Selling, General, & Administrative Expense) are scaled by total value of book asset. Detailed definitions of all variables can be found in Appendix A.

	N	Mean	Std. Dev.	Min	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	Max
Good Faith	161,007	0.175	0.380	0	0	0	0	1
Implied Contract	161,007	0.526	0.499	0	0	1	1	1
Public Policy	161,007	0.535	0.499	0	0	1	1	1
Employee	134,247	5,715	16,684	0	131	656	3,010	129,000
Wage	14,764	40,600	24,780	1,645	26,510	38,820	52,200	261,200
Cash	149,265	0.144	0.190	0	0.0235	0.0664	0.182	0.957
Ln(Asset)	145,800	3.918	2.428	-3.016	2.421	3.946	5.492	10.24
Capex	146,554	0.0803	0.0861	0	0.0260	0.0538	0.101	0.482
Profitability	148,298	-0.0238	0.519	-7.707	0.0107	0.0765	0.123	0.354
ROA	148,330	0.0359	0.442	-6.114	0.0306	0.118	0.184	0.438
R&D	78,275	0.0824	0.175	0	0.00385	0.0269	0.0856	1.606
Selling, General, & Administrative	133,608	0.375	0.440	0.00833	0.143	0.275	0.465	5.769
Book Leverage	161,007	0.322	0.295	0	0.0891	0.254	0.449	1
Market Leverage	121,999	0.276	0.252	0	0.0481	0.216	0.449	0.942
Ln(State GDP)	143,570	11.96	1.059	9.159	11.24	11.99	12.73	13.96





**Table 3. Relationship between Good Faith Exception law, employee, and wage**

This table presents the results of DID regression on labor related variable on Good Faith law. Data is from Compustat Annual database from 1963 to 1998. Good Faith is an indicator variable set equal to one if the state in which the institution is based has passed the Good Faith exception law by year  $t$ . Implied Contract is an indicator variable set to one if the state in which the institution is based has passed the Implied contract exception law by year  $t$ . Public Policy is an indicator variable set equal to one if the state in which the institution is based has passed the Public Policy exception law by year  $t$ .  $Employee_{t+1}$  is the number of employees at  $t+1$ . SG&A is Compustat item Selling, General, and Administrative Expense divided by the total book value of asset. Wage is the firm's total salary expense (XLR) divided by the number of employees (emp). Size is log value of sales. Profitability is income before extraordinary items (I.B.) plus depreciation (D.P.) divided by the book value of asset (AT). Cash is cash and equivalents (CHE) divided by the book value of asset (AT). Numbers in parenthesis are t-statistics using firm level clustered standard error. \*, \*\*, \*\*\* denote statistical significance level at 10%, 5%, and 1%, respectively.

	Dependent Variables					
	Employee <sub>t+1</sub> (1)	Employee <sub>t+1</sub> (2)	SG&A (3)	SG&A (4)	Wage (5)	Wage (6)
Good Faith	-0.016 (-0.05)	-0.107 (-0.31)	-0.006 (-0.72)	-0.000 (-0.00)	0.619 (0.34)	0.192 (0.11)
Implied Contract	0.058 (0.23)	0.079 (0.32)	0.003 (0.61)	0.002 (0.68)	-1.603** (-2.09)	-1.334* (-1.80)
Public Policy	0.321 (1.30)	0.381 (1.58)	-0.003 (-0.59)	0.001 (0.29)	-1.056 (-1.39)	-0.996 (-1.32)
Book Leverage		-0.294 (-1.32)		-0.063*** (-6.08)		-0.934 (-0.38)
Size		1.917*** (17.60)		-0.013*** (-6.16)		0.441 (0.69)
Profitability		-0.707*** (-11.14)		-0.546*** (-42.32)		-6.230** (-2.20)
Cash		1.066*** (4.53)		-0.304*** (-23.29)		9.270** (2.00)
Observations	133,764	128,578	133,608	130,533	14,764	14,485
R-squared	0.023	0.076	0.003	0.466	0.042	0.063
Year FE	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES

**Table 4. Relationship between Good Faith exception law and value of firm**

This table presents the result of OLS DID regression of Wrongful Discharge Law (WDL) enactment on the value of firm. Good Faith is an indicator variable set equal to one if the state in which the institution is based has passed the Good Faith exception law by year t. Implied Contract is an indicator variable set to one if the state in which the institution is based has passed the Implied contract exception law by year t. Public Policy is an indicator variable set equal to one if the state in which the institution is based has passed the Public Policy exception law by year t. Wage is total staff expense (xlr) divided by the number of employees (emp). SG&A is selling, general, and administrative expense (xsga) divided by the book value of asset (at). Book Leverage is the sum of short term debt (dlcc) and long term debt (dlt) divided by book value of asset (AT). Profitability is income before extraordinary items (I.B.) plus depreciation (D.P.) divided by the book value of asset (AT). Ln(Asset) is the log value of the book value of asset. Ln(State GDP) is the log value of state GDP. Federal Circuit State's Good Faith (Implied Contract / Public Policy) is the fraction of other states in the same federal legal circuit region as the firm's headquarters state that have passed the good faith (Implied Contract / Public Policy) exception law by year t. Numbers in parenthesis are t-statistics using firm level clustered standard error. \*, \*\*, \*\*\* denote statistical significance level at 10%, 5%, and 1%, respectively.

	Dependent Variable : $q_t$				Dependent Variable : {Market to Book} $_t$			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Good Faith	-0.041 (-0.51)	0.025 (0.35)	-0.021 (-0.10)	0.005 (0.08)	-0.028 (-0.32)	0.022 (0.29)	-0.018 (-0.08)	-0.008 (-0.11)
Implied Contract	-0.006 (-0.15)	-0.072* (-1.71)	-0.245** (-2.10)	-0.076** (-2.09)	-0.009 (-0.22)	-0.082* (-1.84)	-0.230** (-2.01)	-0.089** (-2.36)
Public Policy	0.032 (0.93)	0.037 (1.06)	-0.020 (-0.25)	0.050 (1.54)	0.036 (0.92)	0.035 (0.94)	-0.026 (-0.32)	0.043 (1.28)
Wage			-0.006 (-1.37)				-0.008* (-1.73)	
SG&A				1.176*** (5.33)				1.288*** (5.36)
Book Leverage		-0.490*** (-4.55)	-1.088*** (-2.63)	-0.494*** (-4.64)		-0.760*** (-6.69)	-1.267*** (-3.03)	-0.776*** (-6.80)
Ln(Asset)		-0.446*** (-14.03)	-0.408*** (-4.13)	-0.293*** (-8.52)		-0.496*** (-14.10)	-0.496*** (-4.47)	-0.335*** (-8.98)
Ln(Employee)		0.012*** (7.43)	0.003 (1.49)	0.007*** (4.25)		0.012*** (7.82)	0.004* (1.76)	0.008*** (4.73)
Ln(State GDP)		-0.063 (-0.51)	0.085 (0.36)	-0.148 (-1.17)		-0.045 (-0.35)	0.170 (0.69)	-0.149 (-1.14)
Federal Circuit's Good Faith		-0.345** (-2.38)	-0.908** (-2.00)	-0.342** (-2.41)		-0.336** (-2.17)	-0.840* (-1.79)	-0.334** (-2.21)
Federal Circuit Implied Contract		0.125* (1.75)	0.630*** (3.34)	0.139** (2.02)		0.143* (1.90)	0.633*** (3.35)	0.158** (2.19)
Federal Circuit Public Policy		-0.021 (-0.28)	-0.014 (-0.10)	-0.099 (-1.31)		-0.021 (-0.28)	-0.004 (-0.02)	-0.099 (-1.28)
Observations	121,954	104,991	10,391	96,249	125,206	107,553	10,628	98,636
R-squared	0.009	0.138	0.169	0.144	0.008	0.180	0.192	0.188
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES

**Table 5. Relationship between firm value and magnitude of change in Labor Earning**

This table presents the result of OLS regression of Wrongful Discharge Law (WDL) enactment on the value of firm using subsamples based on wage variable. Column 1 to 4 present the result of WDL adoption using two subsamples based on the change in the average labor earning (total staff expense divided by the number of employee). Subsample Below (Above) Median contains those firms whose year-to-year change in wage is less (more) than the median change in wage in given year. Column 5 to 8 present the result of WDL adoption using two subsamples based on the standard deviation of wage for the previous 4 years at given year t. Subsample Less (More) Volatile contains those firms whose standard deviation of wage is less (more) than the 30<sup>th</sup> (70<sup>th</sup>) percentile in given year. Good Faith is an indicator variable set equal to one if the state in which the institution is based has passed the Good Faith exception law by year t. Implied Contract is an indicator variable set to one if the state in which the institution is based has passed the Implied contract exception law by year t. Public Policy is an indicator variable set equal to one if the state in which the institution is based has passed the Public Policy exception law by year t. Control variables include book leverage, profitability, log value of asset, log value of state GDP, federal circuit state's WDL's, including good faith, implied contract, and public policy. Numbers in parenthesis are t-statistics using firm level clustered standard error. \*, \*\*, \*\*\* denote statistical significance level at 10%, 5%, and 1%, respectively.

	Year-to-Year Wage Change				Std. Dev (Wage)			
	Q <sub>t</sub>		{Market to Book} <sub>t</sub>		Q <sub>t</sub>		{Market to Book} <sub>t</sub>	
	Below Median	Above Median	Below Median	Above Median	Less Volatile	More Volatile	Less Volatile	More Volatile
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Good Faith	0.005 (0.07)	-0.088 (-0.50)	-0.010 (-0.15)	-0.044 (-0.25)	0.005 (0.07)	-0.181 (-0.45)	-0.007 (-0.10)	-0.181 (-0.47)
Implied Contract	-0.073* (-1.93)	-0.124 (-1.39)	-0.087** (-2.24)	-0.114 (-1.28)	-0.072* (-1.83)	-0.263 (-1.62)	-0.089** (-2.17)	-0.295* (-1.79)
Public Policy	0.048 (1.42)	-0.024 (-0.31)	0.041 (1.18)	-0.030 (-0.37)	0.043 (1.23)	0.136 (0.83)	0.035 (0.95)	0.171 (1.04)
Observations	4,315	3,375	4,424	3,450	1,956	2,680	1,995	2,721
R-squared	0.146	0.201	0.192	0.247	0.140	0.414	0.187	0.411
Control	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES

**Table 6. Relationship between firm value and the magnitude of change in Employment**

This table presents the result of OLS regression of Wrongful Discharge Law (WDL) enactment on the value of firm using subsamples based on employee variable. Column 1 to 4 present the result of WDL adoption using two subsamples based on the change in the number of employee. Subsample Below (Above) Median contains those firms whose year-to-year change in the number of employees is less (more) than the median change in the number of employees in given year. Column 5 to 8 present the result of WDL adoption using two subsamples based on the standard deviation of the number of employees for the past 4 years. Subsample Less (More) Volatile contains those firms whose standard deviation of the number of employees is less (more) than the 30<sup>th</sup> (70<sup>th</sup>) percentile in given year. Good Faith is an indicator variable set equal to one if the state in which the institution is based has passed the Good Faith exception law by year t. Implied Contract is an indicator variable set to one if the state in which the institution is based has passed the Implied contract exception law by year t. Public Policy is an indicator variable set equal to one if the state in which the institution is based has passed the Public Policy exception law by year t. Control variables include book leverage, profitability, log value of asset, log value of state GDP, federal circuit state's WDL's, including good faith, implied contract, and public policy. Numbers in parenthesis are t-statistics using firm level clustered standard error. \*, \*\*, \*\*\* denote statistical significance level at 10%, 5%, and 1%, respectively.

	Year-to-Year Employee Change				Std. Dev (Employee)			
	q <sub>t</sub>		{Market to Book} <sub>t</sub>		q <sub>t</sub>		{Market to Book} <sub>t</sub>	
	Below Median	Above Median	Below Median	Above Median	Less Volatile	More Volatile	Less Volatile	More Volatile
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Good Faith	-0.099 (-1.11)	0.204** (2.39)	-0.103 (-1.15)	0.194** (2.16)	-0.425 (-1.61)	0.001 (0.02)	-0.519* (-1.92)	0.009 (0.14)
Implied Contract	-0.058 (-1.38)	-0.049 (-0.99)	-0.072 (-1.61)	-0.063 (-1.30)	-0.008 (-0.05)	-0.078** (-2.02)	-0.044 (-0.28)	-0.083** (-2.06)
Public Policy	0.073* (1.81)	0.025 (0.63)	0.064 (1.54)	0.028 (0.69)	0.286* (1.78)	0.005 (0.18)	0.288* (1.71)	-0.006 (-0.21)
Observations	50,251	45,451	51,476	46,607	22,134	30,532	22,305	31,985
R-squared	0.217	0.095	0.278	0.113	0.209	0.097	0.249	0.103
Control	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES