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ESSAYS ON MERGER AND ACQUISITION ACTIVITY

AND IMPLICATIONS THEREOF

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ABSTRACT

This dissertation is composed of two essays regarding merger and acquisition (M&A) activity. The first takes a narrower view and makes use of merger and acquisition activity to assess governance faced by individual firms, while the second takes a broader view and investigates how labor market frictions impact overall merger and acquisition activity.

The first essay examines how serving as trustee of a sponsor firm's 401(k) assets alters the incentives of mutual fund companies to monitor firm behavior. The author uses the M&A decisions of firms to reveal the governance effort of mutual fund families serving as trustee. Over a sample of acquisitions announced between 1999-2013, the evidence presented shows that firms with mutual fund family trustees undertake lower quality mergers at higher frequencies. These firms are more likely to select private or diversifying targets, to pay with cash, and to complete the mergers they announce. This evidence suggests mutual fund families decrease their monitoring of retirement asset client firms.

In the second essay, which is joint work with Matthew Gustafson and Adam Welker, the authors provide evidence on the nuanced effect of firing costs on U.S. M&A activity. Following the adoption of state laws that increase firing costs, there is an immediate increase in withdrawn deals and an immediate and persistent 30% reduction in M&A dollar volume, suggesting that post-merger employee turnover is a first-order source of value for large U.S. mergers. In contrast, small firms respond to firing costs by using the M&A market to reorganize into larger entities. There is no decline in small M&As. Instead, small M&As increase over time as average M&A size and the number of small firms decline.

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PREFACE

The second chapter of my dissertation is based on co-authored work with Matthew Gustafson and Adam Welker.

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When I was toying with the decision to go to graduate school and pursue my Ph.D., my advisor at the time, Jeff Peterson, told me something I'll never forget. He said, "Graduate school contains many types of days. Bad days. Really bad days. Extra really bad days. Medium days. Good days. Hectic days. Quiet days. Etcetera. And there are plenty of each of those. But there are only two truly 'great' days in graduate school – the day you get your acceptance letter so you know you're getting in, and the day you submit your dissertation so you know you're getting out." As I sit here on the eve of submission, I can truly appreciate the sentiment he expressed, though I concede there were several other great days along the way – accepting a job offer, passing my final defense, and all the great memories with friends come to mind. But it was all the experiences, both good and bad, that helped me get to this point, and I would not have had them without so many people along the way. Therefore, I would like to take a few moments to express my thanks to everyone who helped make the good times so rich and complete, and the bad times easier to weather, during my time in State College. In no particular order…

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Thank you to all of you, for all that you contributed, be it love, happiness, support, intellectual challenges, companionship, or whatever the occasion called for. You have all helped me, and I will be forever grateful.

DEDICATION

To my parents…

David and Jeanine, the greatest parents anyone could ever ask for. You dedicated so much

of your life, love, and support to me that it is only fitting that I dedicate this manuscript to

you. I can never fully express the depth of my love for you and the gratitude I have for

everything you have done.

EPIGRAPH

"Getting an education is a bit like a communicable disease. It makes you

unsuitable for a lot of jobs and then you have the urge to pass it on."

- Sir Terrence David John Pratchett, OBE

Chapter 1

Don't Bite the Hand that Feeds: Mutual Fund 401(k) Management and Firm M&A Activity

1. Introduction

In 2000, defined contribution assets invested in mutual funds totaled $2.5 trillion and accounted for 35% of mutual fund assets; by 2015 these figures had grown to $7.1 trillion and more than 45%, respectively[1]. One way mutual fund companies could capture this dramatic growth in defined contribution assets was to become the designated trustee for firms that sponsored 401(k) retirement plans [Cohen and Schmidt (2009)]. By acting as trustee, a mutual fund company could select its own funds for inclusion as investment options on the menu of choices for plan participants, converting both existing and future retirement contributions into fee-producing assets under management [Pool, Sialm, Stefanescu (2013)]. As the importance of defined contribution plans to mutual funds' assets under management rose, so too did concerns that the incentive to become and remain trustee could create a conflict of interest for mutual fund companies.

This issue gained increasing amounts of attention in the wake of the financial scandals of the early 2000s, where the prevailing opinion was that a lack of oversight had allowed firms to commit financial fraud[2]. Investors were concerned that mutual fund companies were reducing monitoring activities at firms

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[1] The Investment Company Institute groups three types of retirement plans under the heading of "defined contribution plan"; 1) employer sponsored plans such as 401(k), 403(b), and 457 plans, 2) the Federal Employees Retirement Savings (FERS) Thrift Savings Plan, and 3) Individual Retirement Accounts (IRAs). In 2000, ICI reports total DC assets numbered $5.2 trillion. As of the end of 2015, this figure had risen to $14.0 trillion.

[2] In his keynote speech at The Corporate Governance Conference, John C. Bogle, the founder and former CEO of the Vanguard Group, read excerpts from Benjamin Graham's *The Intelligent Investor* to express his feelings on the matter: "Stockholders are king…(but) the leading investment funds (are) missing a great opportunity for rendering service to the investing public…they can bend managements completely to their will…but unless prodded violently into action, they show neither intelligence nor alertness." Additionally, then Attorney General of New York Eliot Spitzer summarized the prevailing opinion in a 2002 speech: "If there was a group at fault, it was the institutional

with defined contribution plans in an attempt to gain favor with firm management [Teitelbaum (2003)]. However, despite the attention from both investors and regulators on how this potential lack of oversight could have contributed to negative firm outcomes, prior studies investigating the relationship between mutual fund families serving as trustee and 401(k) sponsor firms have focused on the benefits to mutual funds, and how these benefits impact the holdings and voting practices of mutual funds, rather than firm actions. Thus, the question of how mutual funds alter their monitoring activities for retirement asset client firms (henceforth "connected firms", or "connected acquirers"), and what effect this might have had on subsequent firm behavior, remains unanswered. This paper is, to the best of this author's knowledge, the first that seeks to address this question.

To investigate the impact of the mutual fund family trustee-sponsor firm relationship on monitoring effort and subsequent changes to firm behavior, I follow existing literature and examine the merger and acquisition (M&A) decisions of connected firms relative to unconnected firms [Gaspar, Massa, Matos (2005), Chen, Harford, Li (2007), Qiu (2006), Fich, Harford, Tran (2015)]. These studies note that the M&A setting is ideal for assessing the governance role of institutional investors because there is the potential for meaningful divergence in the interests of shareholders and management, as acquisitions can have substantial negative impacts on shareholder value [Moeller, Schlingemann, Stulz (2005)] and provide managers with opportunities to extract private benefits [Gaspar et al (2005)]. Consequently, shareholders with large holdings may have both the incentive and the ability (either individually, or as part of a group) to exert their influence and reduce the incidence of value-destroying mergers, *ceteris paribus*. Additionally, Masulis, Wang, and Xie (2007) find that governance is linked to M&A announcement returns. Thus, the governance effort level of mutual funds serving as trustees may be inferred from the ensuing M&A behavior

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investors, whose equity powers were not exercised. There were things that were outrageous going on, and institutional investors never stood up".

of connected firms; a reduction in the incidence of value-destroying mergers indicates an improvement in governance and an increase suggests a decrease in monitoring efforts.[3]

I test the following two hypotheses to assess how mutual fund monitoring and resulting firm behaviors change. The *Trustee Benefits* hypothesis surmises that the presence of a retirement asset management connection will cause the monitoring effort of mutual funds to decline, and management at sponsor firms will be more likely to undertake mergers with poorer performance. The *Size and Duration of Holdings* hypothesis posits that mutual funds will increase their monitoring effort of connected firms because their holdings of client firms are abnormally large and longer term [Cohen and Schmidt (2009)], and so management at connected firms will be more likely to undertake better performing mergers. It is possible that different subsets of firms will exhibit behaviors supporting either or both of these hypotheses, as the costs and benefits of monitoring change across trustees and firms. The cost to trustees includes the potential to face litigation from the mutual funds' own investors for breach of fiduciary duty for failing to properly monitor the firms in their portfolio, and so I might expect mutual funds to only reduce monitoring activities in M&As where this oversight is least likely to be noticed.

Using a sample of mergers by publicly traded U.S. acquirers during the period 1999-2013, I assess the effects on monitoring of the relationship between firms that sponsor 401(k) retirement plans and the mutual fund families that serve as trustees of these plans. I consider a firm to be connected if it has a large mutual fund family designated as trustee of its 401(k) plan at the time of the merger.[4] Approximately 17.3% of the deals in my sample are deals initiated by connected firms. Consistent with the *Trustee Benefits* hypothesis, I find that the presence of a mutual fund trustee allows management at connected firms to focus more on extracting private benefits from deals and less on capturing value. The presence of a connection

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[3] It seems likely that both the incentives to monitor more and the incentives to monitor less are present for mutual fund trustees. However, it is intuitively unlikely that they have exactly equal (but opposite) magnitudes, and so mutual funds should respond to whichever set of incentives is stronger.

[4] Following Cohen and Schmidt, large mutual fund families are those that are ranked in the top 100 for total net assets under management during any quarter in my sample, which will capture the bulk of mutual funds selected as trustee.

lowers announcement returns by 0.420%, representing a 39% decrease from the average announcement

return. The decline is equivalent to more than $110 million in market capitalization foregone by

shareholders at connected firms, on average. This result holds even when controlling for firm specific

governance (as in Masulis, Wang, and Xie (2007)) and accounting for endogeneity, indicating that the

decline in acquisition performance is due to the trustee relationship and not spuriously caused by poor

overall firm governance or trustee selection.

Previous studies have found a distinct difference in the announcement CARs when firms pursue

public targets relative to private targets – market reactions are positive for private acquisitions and negative

for public ones – and postulate that this variation is the result of disparities in the available information

regarding firm values [Capron and Shen (2007), Fuller, Netter, Stegemoller (2002), Makadok and Barney

(2001), Ragozzino and Reuer (2007)]. To accommodate this difference, I subdivide the sample into public

and private targets and repeat my main analysis.[5] After partitioning the sample, I note that the decline in

returns I observe for connected acquirers is concentrated entirely in the announcement CARs for

acquisitions of private firms. Additionally, when I examine the subset of public deals where the trustee is

most likely to enable the extraction of private benefits by firm management, I still do not observe significant

results. This evidence suggests that trustees are selectively turning a blind eye to the M&A decisions of

connected firm management, and are allowing mergers of poorer quality only when the information

asymmetry is largest and the likelihood of investors noticing is lowest.[6]

I next examine whether the effects of mutual fund companies serving as trustee extend beyond

announcement returns. I find that managers at firms with mutual fund trustees extract private benefits from

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[5] Following the results of Fuller, Netter, and Stegemoller (2002), I classify a merger as public only if the target itself is a publicly traded company. These authors document that the relative increase in information asymmetry when switching from a public target to a subsidiary is similar to that between a public target and a private target, and so returns to acquiring a subsidiary are more similar to returns from acquiring a private target.

[6] Intuitively, it seems much more likely that investors would voice concerns over abnormally low returns when they are experiencing losses, as is commonly the case when the target is publicly traded. Additionally, the opacity of private firms makes it difficult for investors to identify what the true value of the target is, and overpayment is less easily identified.

a variety of avenues. They are more likely to undertake larger numbers of acquisitions, to complete the acquisitions they announce, and to show a preference for inefficient targets and payment methods that allow for additional benefit extraction. Regarding target and payment selection, I document that acquirers with mutual fund trustees are more likely to undertake diversifying mergers, which are often driven by agency costs and desire for private benefits [Denis, Denis, Sarin (1997), Hyland and Diltz (2002), Aggarwal and Samwick (2003), Morck, Shleifer, Vishny (1990)], and pay for private targets with cash, which may be suboptimal for tax reasons [Fuller et al. (2002)].

This paper contributes to several strands of literature. Primarily, my results demonstrate that the effects of the connection between firms sponsoring 401(k) plans and mutual fund companies serving as trustees extend beyond changes to mutual fund behaviors. While previous studies provide evidence that this relationship influences the holdings of trustees [Cohen and Scmidt (2009)], the voting behavior of trustees [Cvijanovic, Dasgupta, Zachariadis (2015), Davis and Kim (2007), Ashraf, Jayaraman, Ryan (2012), Iliev and Lowry (2015)], and the benefits that accrue to trustees [Pool, Sialm, Stefanescu (2014), Duan, Hotchkiss, Jiao (2014)], my research shows that this connection also has real effects on sponsor firm behaviors. Complementing existing work, I show that connected firms increase their M&A frequency in spite of a reduction in the value of the deals to shareholders, and that these effects are concentrated to acquisitions where information asymmetry is highest (i.e., private targets).

In addition to my findings on the real effects to firm behavior of the pension management relationship, I add to the literature on the M&A announcement returns to acquirers. For example, the size of the acquirer [Moeller, Schlingemann, Stulz (2004)], the availability of cash [Harford (1999)], and CEO overconfidence [Malmendier and Tate (2008)] have all been shown to be determinants of market reactions to M&A disclosure. Additional work has shown that monitoring and subsequent M&A announcement returns rise with increases in the importance of a mutual fund's position [Fich, Harford, and Tran (2015)] and with increases in the duration of holdings [Chen, Harford, Li (2007), Harford, Kecskes, Mansi (2015)]. My work stands in contrast to these last two, demonstrating that the incentives provided by business ties

may overshadow those provided by the importance and duration of an institutions holdings. This finding is in line with those of Masulis, Wang, and Xie (2007) who provide evidence of a decline in M&A quality as firms are more insulated from market discipline.

Lastly, in a broader sense, the evidence I provide in this paper contributes to the literature examining mutual funds as a source of governance. Prior literature has assumed that mutual funds are free from conflicts of interest that plague other institutions [Brickley, Lease, Smith (1988), Chen, Harford, Li (2007), Harford, Kecskes, Mansi (2015), Gaspar, Massa, Matos (2005)]. My results provide conflicting evidence to the key assumption in these papers, as mutual funds who serve as trustee for retirement assets demonstrate a lack of willingness to properly govern client firms.

The rest of the paper is as follows. Section II provides a detailed discussion of the background literature and develops a rationale for my two hypotheses in the context of these papers. Section III describes the sample collection. Section IV details the main empirical results. Section V provides additional supporting evidence and Section VI concludes.

2. Background and Hypothesis Development

While it is clear that public opinion believed the trustee link between mutual funds and sponsor firms led to a decrease in the monitoring effort exerted by mutual fund trustees and subsequent firm outcomes [Teitelbaum (2003)], the existing literature provides conflicting predictions on the directionality of these changes.

2.1 Trustee Benefits Hypothesis

Evidence from the literature investigating the impact of business ties on governance suggests that if mutual funds are "connected" to firms through 401(k) management, they might exert less monitoring

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effort. Mutual funds derive substantial benefits when serving as trustee of a firm's 401(k) assets, which establishes a potential business tie to the firm. The benefits from trusteeship come via two major avenues; 1) mutual fund companies are able increase their assets under management, and thereby revenues, by securing existing assets and future contributions through the inclusion of their own mutual funds in the retirement plans of sponsor firms [Pool et al. (2013)], and 2) mutual funds gain a tradeable information advantage in sponsor firms' stock [Duan, Hotchkiss, Jiao (2014)]. As a result, the costs to mutual funds of effectively monitoring firms connected via 401(k) management might be substantially higher, because oversight could displease management and jeopardize the mutual fund company's trustee status (and the advantages it confers) [Chen, Harford, Li (2007), Cornett, Marcus, Saunders, Tehranian (2007), Almazan, Hartzell, Starks (2005)].

In addition, existing studies on the mutual fund trustee-sponsor firm relationship suggest that mutual funds do not simply avoid aggravating management at connected firms. Changes in the behavior of a mutual fund trustee with respect to connected firms may reflect a trustee's attempts to gain favor with sponsor firm management. Cohen and Schmidt (2009) demonstrate that mutual fund trustees overweight their holdings by 47% on average and use this increased position to provide price support for firms whose 401(k) assets they manage. Mutual funds are also more likely to vote in a pro-management manner for all firms in their portfolio when serving as a trustee [Davis and Kim (2007), Ashraf, Jayaraman, Ryan (2012)], and specifically in a pro-management manner for connected firms when the outcome of the vote is uncertain [Cvijanovic, Dasgupta, Zachariadis (2015), Iliev and Lowry (2015)]. These behaviors are similar to the pro-management actions taken by non-mutual fund institutional investors documented as compromised by Brickley, Lease, Smith (1988), and indicate that mutual funds may be compromised as monitors in a similar fashion.

Following Masulis, Wang, and Xie (2007), I predict that a decline in governance will lead to poorer M&A announcement returns. Formally, the *Trustee Benefits* hypothesis states that the threat of losing trusteeship of a firm's 401(k) assets will cause mutual funds to reduce their monitoring efforts of connected

firms, and this will lead to a decline in the quality of M&As undertaken by sponsor firm management. This hypothesis is in line with previous studies that examine the effects of business relationships on governance [Brickley et al. (1988), Almazan et al. (2005), Cornett et al. (2007)], as well as those that examine the impact of becoming trustee on the behavior of mutual funds [Cohen and Schmidt (2009), Cvjanovic et al. (2015)].

2.2 Size and Duration of Holdings Hypothesis

The evidence in favor of the *Trustee Benefits* hypothesis is strongly suggestive, but it is insufficient to conclude definitively that mutual funds reduce the effort expended on governance. Doubt remains because studies from the corporate governance literature, including many of those previously mentioned, traditionally consider mutual funds to be above reproach where monitoring efforts are concerned and therefore do not treat mutual funds as compromised firms. For example, in assessing the impact of institutional governance on M&A decisions, Chen et al. (2007) treat all mutual funds as independent monitors. Brickley et al. (1988) and Cornett et al. (2007) claim mutual funds "are more likely to oppose management" than other institutions and "have become increasingly willing to use their ownership rights to pressure managers to act in the best interest of the shareholders" (respectively), while results from Almazan et al. (2005) indicate that mutual funds should have a comparative advantage when monitoring firm management. This evidence suggests that mutual fund monitoring may not be affected when serving as trustee.

Evidence from the legal literature also argues that the conflicts of interest restraining other institutions with large holdings (such as insurance companies) from effectively monitoring are absent in mutual funds, as funds are legally obligated to represent the best interests of their shareholders [Black (1990), Palmiter (2002), and Roe (1996)]. In light of the scrutiny from both regulators and investors following the financial scandals of the early 2000s, and the number of lawsuits that have been aimed at

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mutual funds in recent years, the incentives for mutual funds to avoid violating this fiduciary responsibility have only grown since these papers were published. Mutual funds may not be willing to risk the legal consequences of a breach of fiduciary responsibility, regardless of the benefits provided by a business relationship, and so their monitoring efforts remain unchanged.

Beyond implying that mutual funds should maintain preexisting governance efforts, findings from studies in the corporate governance literature suggest that mutual funds may be incentivized to actually monitor *more effectively* following their nomination to trustee. The persistent overweighting in connected firms' shares found by Cohen and Schmidt (2009) effectively transforms trustee mutual funds into larger, longer term shareholders. This transition comes, in part, from mutual funds' unwillingness to sell shares of connected firms. As trustees are less likely to exercise "exit" as an indirect means of governance (Kahn and Winton (1998) refer to this as "cut and run"), they may be more likely to utilize "voice" and exert governance effort directly. This form of monitoring manifests itself as letters to executives, negotiations with management (jawboning), and shareholder proposals.

Accompanying a shift to "voice", the increased share positions and investment horizons that Cohen and Schmidt (2009) document may provide additional incentives for trustees to monitor. Larger share positions raise the relative importance of a stock to the trustee's overall portfolio, which has been shown to increase incentives to monitor [Fich, Harford, Tran (2015)], and allow funds to reap more benefits from good governance [Edmans (2013)]. These effects are especially pronounced because trustees have an information advantage [Duan, Hotchkiss, Jiao (2014)], which helps funds better identify when changes will be positive [Kahn and Winton (1998)] and reduces per year costs. Longer term shareholders have been shown to reduce value-destroying acquisitions and managers' ability to bargain for personal benefits [Gaspar, Massa, Matos (2005)], and to increase post-merger performance [Chen, Harford, Li (2005)]. These benefits to monitoring come at a lower per year cost as longer term shareholders are able to amortize expenses over increased investment horizons [Harford, Kecskes, Mansi (2015)].

In light of this evidence, I formalize the *Size and Duration of Holdings* hypothesis to state that mutual fund trustees will be more effective monitors of management at connected firms because they have longer ownership horizons and larger positions, which increase the benefits and reduce the costs of good governance for mutual funds. Consequently, I expect to see an improvement in the quality of M&A activity undertaken by connected funds. This hypothesis is in line with previous studies suggesting the monitoring efforts of mutual funds are not compromised by business ties [Chen, Harford, Li (2005), Gaspar, Massa, Matos (2005), Cornett et al. (2007), Almazan et al. (2005), Brickley et al. (1988)] and the literature on how size and duration of holdings improves the monitoring of institutional shareholders [Fich, Harford, Tran (2015), Chen, Harford, Li (2007), Harford, Kecskes, Mansi (2015)].

The competing evidence from existing literature makes it difficult to assess how the costs and benefits of reduced monitoring compare to those of increased monitoring for trustees. Ex ante, I might expect to find support for the *Trustee Benefits* hypothesis because existing literature on the trustee relationship illustrates actions by mutual funds that indicate they may be compromised. However, it is unclear whether these effects will carry over to the overall monitoring efforts of mutual funds and connected firm behaviors. Therefore, the question of how firms respond ultimately remains an empirical one.

2.3 Passive Institutions

The role of passive institutional investors has grown substantially. Appel, Gormley, and Keim (2016a) note that the market share of passively managed mutual funds has quadrupled since 2000, and that these funds represent fully one third of all mutual fund assets. Such growth in passive investors gives rise to concerns that many of the trustees in my sample may not function as monitors of the firms they own, and thus neither of the above hypotheses should find support.

However, empirical support for these claims is lacking. Recent papers by Appel, Gormley, and Keim (2016a, 2016b) suggest that while mutual fund companies may pursue passive investment strategies,

they are not passive owners. These papers show passive investors are willing to influence firms' governance and to engage in activist campaigns when governance initiatives are unsuccessful. Additionally, the idea of passive investors as active owners is not new. Romano (1993) acknowledges that the rise in index investing was accompanied by a rise in monitoring effort exerted by mutual funds. This increase in governance can be associated with the "voice" channel described above. Index investors are tied to their investments, and cannot govern the firm through "exit". Thus, with one avenue of governance closed, they are more likely to make use of the remaining choice and be more active in monitoring the firm. Thus, the presence of a number of passive investors in my sample should not preclude me from finding evidence for at least one of the preceding hypotheses.

3. Sample Description

3.1 Mutual Funds, Trustees, and Mutual Fund Trustees

In this study, I focus on trustees rather than other service providers, because Cohen and Schmidt (2009) suggest that the benefits to mutual fund family companies are largest when a fund family serves as trustee, and thus the potential conflicts of interest are strongest for this relationship. I hand collect data on trustees for 401(k) retirement plans from both the Form 11-K documents that companies file with the SEC, which is available through the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system, and from Schedule C of the Form 5500 filed with the Department of Labor. A firm must file form 11-K pursuant to the Securities and Exchange Act of 1934 if the defined contribution plan it sponsors allows employees to contribute funds to company stock. The Employee Retirement Income Security Act of 1974 (ERISA) requires any firm with a qualifying retirement plan, including all firms that sponsor 401(k) plans regardless of size or participation, to file a Form 5500. This data is available for firms from 1999-2013.

In many cases, a firm may sponsor more than one 401(k) plan and/or have more than one trustee. In cases where multiple plans exist but all assets are managed by a single trustee, I sum the total assets of the plan and record the single trustee. When firms have multiple trustees for a single plan, all trustees are recorded. However, when multiple plans are present and each plan has a separate trustee, I calculate the total assets managed by each trustee and assign the firm the trustee with the largest total holdings. In nearly all multi-plan, multi-trustee firms, a single trustee manages the vast majority of retirement assets, and so trustees on secondary plans are less likely to have altered incentives.

To obtain data on which trustees qualify as mutual funds, I make use of data from CRSP's Survivor Bias Free US Mutual Fund database. Following Cohen and Schmidt (2009), I focus on the top 100 mutual fund family companies as measured by total net assets under management. These authors note that the largest mutual fund families are the ones most likely to serve as trustee for 401(k) plans, and they are also the ones that have deep enough pockets to own a meaningful portion of client firms' stock. A mutual fund family is considered in the top 100 in my sample if the total net assets under management by the family is in the top 100 for any quarter during my sample period (1999-2013). This criteria leaves me with 247 distinct mutual fund family companies[7].

This data is then matched by hand to trustee data from Form 11-K and Form 5500. I also match this data to the 13F holding data from Thomson Reuters to identify overall institutional ownership of a given firm, as well as the relative importance of a given firm to a trustee's portfolio. Table 1-1 presents summary statistics for this data.

Panel A of Table 1-1 examines the average institutional holdings of this data. The average ownership stake by individual institutions of a firm is 0.45% of shares outstanding. However, mutual fund

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[7] These 247 largest mutual funds represent the vast majority of the mutual fund market. Additionally, while a large number of mutual fund companies serve as trustee, the majority of trusteeship is concentrated to a small number of mutual fund companies. Ten mutual fund companies serve as trustee in 84.4% of my sample, and the largest two (Northern Trust and Fidelity Investments) have market shares of 17.8% and 16.1%, respectively. Thus, the restrictions I place on mutual funds placing in the 100 largest in any given quarter seems to incorporate the vast majority of mutual fund companies acting as trustee.

companies that serve as trustee hold 2.00% of outstanding shares on average, while non-trustee institutions

hold 0.45%. When the sample is restricted to firms that have a mutual fund company serving as trustee, the

average ownership by an institution drops to 0.24% while the average ownership by non-trustees drops to

0.23%[8]. After restricting the sample to firms that serve as trustee, either during the quarter of the observation

or during any quarter in my sample period, the average ownership rises substantially. However, a trustee's

ownership stake in client firms is significantly larger than in non-client firms, which is consistently with

the findings of substantial overweighting in client firm shares by Cohen and Schmidt (2009). Both a

trustee's holdings in client and non-client firms is higher than the average holding in a company by non-

trustees of 0.39%.

Panel B of Table 1-1 examines the characteristics of retirement plans drawn from SEC Form 11-K

and DOL Form 5500 in my sample, with subdivisions for connected and unconnected firms (i.e. those who

do/do not have a mutual fund company serving as trustee of the plan). Firms that have a connection to a

mutual fund company operate plans that are significantly larger in terms of participants, contributions made

yearly by both employers and employees, plan assets, and the portion of assets that are invested – which is

the portion from which the mutual fund would draw fees.

3.2 M&A Data

To assemble data on mergers and acquisitions for my sample, I use Thomson One's Mergers and

Acquisitions database. I collect all deals announced by U.S. acquirers between January 1, 1999 and

December 31, 2013 for U.S. private, public, and subsidiary targets. My data begin in 1999, because this is

the earliest that complete data on trustees is available. I exclude buybacks, recapitalizations, exchange

offers, divestitures, repurchases, and self-tenders, as well as financial and utility firms (SIC codes 6000-

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[8] This drop off in average ownership may be partially due to the size of the firm, as firms with trustees tend to be much larger, and a smaller ownership stake in percentage terms might actually indicate a larger investment by the institution in dollar terms.

6999 and 4000-4999 respectively). I require that the acquirer seeks a controlling stake in the target firm (i.e. must be seeking to own more than 50% of the shares), and that the value of the deal represents at least 5% of the acquirer's market value. Further, I require acquiring firms to have available accounting data from Compustat and share price data from the Center for Research in Security Prices (CRSP). This data is matched to the trustee and holdings data described above, leaving me with data on 5,788 deals.

In Table 1-2, I provide summary statistics on the complete set of deals in my sample, as well as only those conducted by connected of unconnected firms[9]. Panel A provides the average cumulative abnormal return (CAR) of the three day window (-1, 1) around announcement. The average CAR for deals in my sample is 1.07%, though this figure is significantly different when the target is public (-0.92%) versus private (1.48%), which is in line with the announcement returns for public and private targets documented in Fuller et al. (2002). Table 1-2 also shows that returns to connected firms are lower than returns to unconnected firms, and that this difference is concentrated in deals for private targets.

Panels B and C provide firm and deal specific characteristics for the sample. Connected firms tend to be larger firms, with higher cash flow and institutional ownership, and slightly worse internal corporate governance as measured by their Entrenchment Index score as in Bebchuk et al. (2009). They also target firms that are smaller in terms of relative deal size and are more likely to select targets that are diversifying, pay entirely with cash rather than stock, and require a target termination fee provision. Other differences I observe, such as across the market-to-book ratio of an acquiring firm, are statistically significant across connected and unconnected firms, but are less so in an economic sense.

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[9] I consider a firm connected if it had a mutual fund family company serving as trustee of its 401(k) retirement assets during the quarter in which the deal was announced, and unconnected otherwise.

4. Main Empirical Results

Figures 1 and 2 present the abnormal and cumulative abnormal returns (respectively) to acquiring firms around announcement for both connected and unconnected acquirers. Notably, I observe that when mutual fund families serve as trustees, sponsor firms experience substantially lower abnormal returns around M&A announcement. At announcement, connected firms experience a 0.5% lower abnormal return relative to unconnected firms, and the three day cumulative abnormal return from t = -1 to 1 is nearly 1%. However, connected firms differ from unconnected firms on a number of dimensions, both in the characteristics of the firms themselves and the deals they choose to initiate, which have been shown to influence announcement returns. Therefore, I examine the question of the impact of the 401(k) management relationship in a formal statistical setting to control for these factors.

4.1 Cumulative Abnormal Return at Announcement

Table 1-3 presents results from OLS regressions in both the univariate and multivariate settings to assess the impact of having a mutual fund serve as trustee. The dependent variable in all specifications is the cumulative abnormal return for the three days surrounding announcement [-1:1], as measured by the standard market model. This variable has been scaled so that coefficients represent percentage points. Model 1 represents a univariate analysis and includes fixed effects for both industry and year. Model 2 includes control variables common to the literature [Chen, Harford, and Li (2007), Fich, Harford, and Tran (2014)].

The variable of interest in all specifications is *Connected MF Indicator*, which is a (0,1) dummy variable indicating whether the acquiring firm had a large mutual fund family serving as trustee of its 401(k) retirement assets during the quarter in which the deal was announced. The coefficients on *Connected MF Indicator* are negative and significant in all specifications, which suggests that mutual fund trustees lead to lower announcement returns. These effects are economically meaningful as well. The coefficient from

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Model 2, which I treat as my baseline model, suggests that connected firms have announcement returns that are 0.420% lower on average, which corresponds to roughly a 39% decline relative to the mean of 1.07%. This represents approximately $110 million in market value foregone for each deal announced by connected firms on average, and represents a little more than $110 billion left on the table by connected firms over my entire sample period. These results suggest connected firms face reduced amounts of monitoring, and provides support for the *Trustee Benefits* hypothesis outlined above.

The other control variables included in the specifications are as described in Appendix A. Consistent with prior work, deals that have higher relative deal sizes, deals that are paid for with all cash, and tender offers have positive effects on announcement returns. Conversely, I observe negative effects on announcement returns when the target is public, the acquirer is larger (as measured by natural log of assets), an acquirer termination fee is present, the deal is for a diversifying target (one in a different industry than the acquirer), when deals are classified as hostile, or when the deal is competed (meaning there is more than one bidder).[10]

4.2 Public vs. Private Targets

Existing literature has documented that abnormal returns to bidders at announcement are negative when the target is a publicly traded firm and positive when the target is a privately owned firm, on average [Fuller, Netter, Stegemoller (2002), Capron and Shen (2007)]. Evidence from summary statistics in Table 1-2 and the large negative and significant coefficient on the public target indicator in Table 1-3 suggests that returns to firms in my sample that select public targets may also differ substantially from when selecting a private target. Fuller et al. (2002) suggest that the bimodal nature of the returns is due to multiple factors; private firms have less information available publicly and opportunities for value-creating private

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[10] Differences may arise here because my sample is somewhat different from prior studies. I include both public and private targets. However, the results I find are generally similar to those in existing work.

information are more prevalent, the market for private firms is less liquid and acquirers may obtain a liquidity discount, and private deals paid for with stock may result in a discount as this helps private firm owners defer taxes.

In light of this evidence, it is possible that connected firms are more likely to select private firms as targets than unconnected firms because private firms are harder to value and so managers may be able to extract more private benefits. My results could then be driven by average differences in returns based on the target's public status rather than the presence of a mutual fund trustee. I therefore divide the data into two subsamples (one for public targets and one for private targets) and repeat the analysis.

Table 1-3 presents the evidence from these tests, with Models 3 and 4 replicating the baseline specification from column 2 after subdividing the sample into public and private targets, respectively. These results show a meaningful decline in the announcement return to acquirers when pursuing both public and private targets in an economic sense, as I observe a 42.5% decline from the average return of -0.92% for firms selecting public targets and a 36.4% decline from the average return of 1.48% for firms selecting private targets. However, I only observe a statistically significant decline in the market reaction for connected acquirers who are attempting to purchase private targets. The coefficient on Connected MF Indicator for private targets is more negative (-0.539%) and significant than when all targets are considered together, indicating that the poor acquisition performance of connected firms is concentrated within the market for private targets. This evidence stands in direct contrast to what one would expect if differences in a target's public status were driving my results, and provides further support for the *Trustee Benefits* hypothesis.

One possible explanation for why I observe poorer announcement performance surrounding deal announcements for private targets could be that mutual fund trustees are selective in their governance efforts, only allowing managers at connected firms to extract private benefits when information about the target is less readily available. A number of factors for public targets, such as regulatory disclosure, analyst coverage, and an actively traded market all reduce uncertainty about the value of the firm. As a result,

insufficient monitoring effort should be more easily noticed by market participants and regulators alike, increasing the chances that the sponsor firm or the trustee may be singled out for regulatory discipline or litigation. The lack of publicly available information regarding private companies makes these outcomes less likely, as it is be harder for outsiders to value firms precisely and thus identify when the trustee is monitoring insufficiently. In this manner, trustees are able to please connected firm management and still avoid undesirable market outcomes.

4.3 Importance of Holdings to Trustee

Thus far, the evidence I have presented suggests that mutual fund companies serving as trustees reduce their monitoring efforts for client firms and allows managers to extract private benefits, providing support for the *Trustee Benefits* hypothesis. However, it still remains a possibility that a subset of mutual fund trustees are monitoring connected firms more, or that they are improving governance in a subset of cases, and so I have not yet eliminated the *Size and Duration of Holdings* hypothesis as a possibility. A cornerstone of this hypothesis was the finding by Cohen and Schmidt (2009) that mutual fund trustees overweight their holdings of client firms and are less likely to sell these shares as a result of becoming trustee. While the nature of the trustee position is such that all trustees are inherently long-term shareholders, as they wish to retain trustee status and reap the benefits that result for as long as possible, trustees do exhibit considerable heterogeneity in the total holdings positions they have in connected firms. Accordingly, some connected firms will represent large enough share positions in the overall portfolio of the trustee to qualify as significant holdings for the mutual fund trustee, while others will not.

Following Fich, Harford, and Tran (2014), I recognize that mutual funds will most likely monitor firms that embody their largest holdings because the performance of these firms will have the largest impact on the overall portfolio. If any evidence to support the notion that mutual funds will monitor more as a result of serving as trustee exists, I should expect to find it in cases where the trustee's holdings of the client

firm are large relative to their other positions. As such, I use the threshold from Fich et al. (2014) of whether

or not the trustee's holdings of a given connected firm is in the top 10% of the trustee's portfolio to identify

which connected firms represent "significant holdings". This information is contained in the variable

Matters to Trustee, which is a dummy variable with a value of 1 when a connected firm is important to the

trustee's portfolio performance (i.e. the holding is in the top 10% of holdings). Table 1-4 contains the results

of these tests.

Column 1 represents the results of a regression that includes all targeted firms. The coefficient on

Connected MF Indicator is still negative and significant, indicating that mutual fund trustees do still enable

value reducing M&A activity. Additionally, the coefficient on *Matters to Trustee* is positive and significant,

and the magnitude of this coefficient is statistically similar to the one I observe on *Connected MF Indicator*.

This evidence suggests a reversal of the effects of mutual fund trustees when the connected firm represents

an especially large holding for the mutual fund, and is consistent with Fich et al. (2014).

However, when I restrict the sample to just private targets (results in column 3), which is the subset

of deals where the decline in M&A quality is concentrated, the coefficient on *Matters to Trustee* attenuates

while the magnitude of the coefficient on *Connected MF Indicator* becomes larger (more negative). The

coefficient on *Matters to Trustee* is still positive and economically large, but is approximately only two

thirds the magnitude of the coefficient for *Connected MF Indicator*. The net effect of being a connected

firm is then still negative and economically large (-0.260%) when the performance of the connected firm is

important to the trustee's portfolio[11]. This evidence suggests that the negative effects of mutual funds

serving as trustees of 401(k) retirement plans persist even when incentives for mutual funds to monitor

connected firms are maximized. Additionally, a mutual fund's decision to monitor a given firm is driven at

least as much by its trustee status as it is by the importance of the firm to the overall portfolio performance.

This evidence, in conjunction with that previously discussed, is sufficient to dismiss the *Size and Duration*

of Holdings hypothesis.

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[11] The difference in the coefficients is not statistically significant, however.

4.4 Governance

The average firm in my sample has more than 94 institutions that own shares in the company, and so it is highly unlikely that the trustee is the only shareholder that may exert monitoring effort on the firm. Individual firms may therefore face different degrees of external governance based on varying institutional ownership structures. Additionally, heterogeneity exists across the level of internal governance that managers are subject to, which may also constrain the private benefits managers are able to extract.

Existing literature demonstrates that both of these factors can have an impact on M&A performance. Gaspar, Massa, Matos (2005), Chen, Harford, Li (2007), and Fich, Harford, Tran (2015) all demonstrate the importance of institutional ownership structure, and Masulis, Wang, and Xie (2007) provide evidence that better internal firm governance leads to more desirable outcomes for shareholders. The evidence previously presented posits that connected firms experience a decrease in the level of monitoring from the mutual fund that is serving as trustee, which represents a decline in the quality of firm governance. However, it is possible the results I observe are driven spuriously by poor firm governance characteristics or poor institutional governance in general rather than a decline in the monitoring efforts of trustees specifically. The indicator I use for the presence of a mutual fund connection would then merely proxy for poor overall corporate governance.

To account for this possibility, I control for internal governance and overall institutional monitoring. First, following Bebchuk, Cohen, and Ferrell (2009) and Masulis, Wang, and Xie (2007)[12], I construct the E-index as a measure of the anti-takeover provisions present at the time of the merger, which should address concerns that firm specific governance characteristics are driving my findings. Additionally, to ensure that it is not a lack of external governance from non-trustee institutional shareholders, I include the percentage of a firm's shares outstanding that are held by institutions. Because I previously observed

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[12] Masulis et al. (2007) use both the E-index created by Bebchuk et al. (2009) and the G-index created by Gompers, Ishii, and Metrick (2003). Due to restrictions in the data availability on anti-takeover provisions these authors use to create their indices, I am only able to include the E-Index of Bebchuk et al. (2009).

that the impacts of the retirement asset management relationship are concentrated in mergers concerning private targets, I examine the impact of these variables for all targets and then divide the sample into public and private targets. Table 1-5 presents results from these tests.

When examining the impacts of governance provisions and institutional ownership on all targets, I still observe a negative relationship between connected firms and M&A announcement returns. Some attenuation is present, but the magnitudes observed are still economically large. Moreover, when I subdivide the sample into deals for public or private targets in Panels B and C respectively, I note that the effects are again concentrated within private targets. This evidence rules out the possibility that other governance explanations account for the decline in M&A performance that I document.

4.5 Endogeneity

The matching process between sponsor firms and trustees is not random, as firm management is generally able to choose who serves as trustee for the retirement assets of the firm. Management's choice of a trustee may be driven by a number of considerations including, but not limited to: which trustee offers the lowest cost investment options to retirees, which trustee offers the most price support for the firm's share price [Cohen and Schmidt (2009)], which trustee minimizes the search costs faced by the firm, which trustee the firm has historically used, or any combination thereof. An additional possibility is that managers choose a trustee that offers the greatest degree of latitude and the least amount of oversight.

This last possibility makes a causal interpretation of my results difficult, as lower quality managers are more likely to initiate lower quality M&As and face reduced announcement returns. These same managers may also be more likely to select a trustee that will shield them from market oversight and facilitate additional private benefit extraction. Mutual fund families serving as trustee may then be the conduit that enables lower quality managers to undertake lower quality M&As, and the decline I observe

in M&A performance may then simply be a reflection of manager quality rather than the result of a mutual fund family serving as trustee.

From an intuitive standpoint, if the reduction in oversight was the primary driver for trustee selection, managers should predominantly choose the mutual fund family that holds the largest share position, which would provide the most protection from market discipline. While the mutual fund families that serve as trustee have a share position in the top quartile of institutional holdings for the firm in the vast majority of cases, it is relatively rare the that trustee is the largest shareholder overall. This anecdotal evidence suggests that it is the presence of a mutual fund family serving as trustee, and not the choice component, that drives the decline in M&A quality. In support of this, I present a more rigorous analysis below.

To address concerns about selection in a formal sense and better identify a causal link between mutual fund family trustees and lower quality M&A behavior by connected firms, I investigate a setting where the choice component of a trustee has been minimized; acquisitions that were undertaken when the current trustee predates the current CEO. These situations are incorporated via a dummy variable, *Trustee Predates CEO*, where 1 represents when a trustee predates the CEO and 0 otherwise. In these cases, managers at the connected firm are less likely to be paired with their top choice of trustee, and would thus not be able to extract the maximum amount of private benefits.

To examine how trustee relationships established prior to the appointment of the current CEO differ, I examine the coefficient on the indicator variable *Trustee Predates CEO* in two settings. In the first, I include *Trustee Predates CEO* in the main specification from column 2 of Table 1-3. Panel A of Table 1-6 provides the coefficients on my primary independent variable of interest, *Connected MF Indicator*, and *Trustee Predates CEO* from this specification. In all cases, the coefficient on *Trustee Predates CEO* is statistically insignificant, though it is positive and economically large for all targets and when the sample is restricted to private targets. This could be seen as evidence that attenuation occurs when choice is eliminated. However, the effect from *Connected MF Indicator* remains negative and significant when the

sample examines all targets or when the sample is restricted to private targets, and in both cases is larger in magnitude than the coefficient on *Trustee Predates CEO*. Thus, the net effect is still negative and economically large, suggesting that while choice may influence the results to some extent, it cannot explain the entirety of my results.

In the second setting, I restrict the sample to M&A activity announced by firms that had a connection, and compare the announcement CARs of firms where the trustee predated the CEO with the returns of those where the CEO was able to choose the trustee. Panel B of Table 1-6 illustrates the results of this test. The coefficient on *Trustee Predates CEO* is positive but insignificant, indicating that the announcement returns for firms where the choice component was limited are statistically similar to firms where management was able to select the trustee.

In an additional attempt to address endogeneity concerns and establish a causal link, I perform a propensity score matched sample analysis. I start with the original sample used in Table 1-3, and then calculate the propensity score associated with being a connected firm in any given quarter for each observation. This score is derived from a logistic regression where the dependent variable is *Connected MF Indicator* and the independent variables are *Firm Size* and either of two measures of institutional ownership (IO): *% Institutional Ownership*, which is as in previous tests, and *IO Less Trustee's Shares*, which is defined as the institutional ownership of the firm less the shares owned by the trustee. This first measure of IO represents cases where the trustee's stake in the firm is replacing another institutional investor's stake, and the second measure represents cases where the trustee's stake replaces retail ownership. An optimal matching algorithm that minimizes the total distance between pairs of observations then matches firms on their propensity scores. I repeat this procedure for both public and private targets.

The final samples for all targets, one for each of when the trustee's stake replaces institutional vs. retail investors, contain 1,610 and 1,606 observations respectively. Table 1-7 presents means and differences in means for the two variables the sample was matched on to assess the balance of the samples. Panel A gives details on the balance between the samples with respect to firm assets measured in billions,

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and Panel B gives details on the institutional ownership. No significant differences exist between the means of firm assets across my samples, while some significant differences exist across the means of institutional ownership across my samples. However, these differences are approximately a quarter or less of what they are in the original sample, indicating that this sample demonstrates decidedly more balance than the initial sample.

Table 1-8 contains the results of my multivariate analyses using the matched samples. The first three columns examine the impact of a mutual fund trustee when the trustee's stake replaces another institutional investor, while the last three columns examine the impact when the trustee replaces a retail investor. In either setting, the coefficient on *Connected MF Indicator* when the acquiring firm selects a private target is negative and economically large. However, this coefficient is only statistically significant and similar in magnitude to my original specification when the trustee replaces another institutional investor, providing support for the notion that mutual fund trustees exert less governance on client firms.[13]

Taken together, this evidence suggests that selection cannot fully account for the magnitude of my results. Additionally, even if a choice component is the driver for a portion of my findings, this does not diminish the fact that it is the presence of mutual fund companies serving as trustee which reduces the quality of M&As undertaken by firms. Having a mutual fund family oversee a firm's retirement assets could act as a signal of manager quality, and remains a possibility for future work.

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[13] One caveat to this interpretation is that in the matched sample, the largest firms have been omitted which disproportionately affects my treatment group (i.e. those firms that have a mutual fund serving as trustee). These largest firms typically have the largest pools of retirement assets, and are the most lucrative customers for trustees. Consequently, they are also the clients where trustees are most likely to allow manager misbehavior. Thus, the lack of significance and decline in magnitude of the coefficient on *Connected MF Indicator* when trustees replace retail investors could be due to power issues.

5. Effect of Trustees on Managerial Actions

If mutual fund families serving as trustee for the 401(k) assets of sponsor firms truly erodes incentives to monitor and thus allows managers to extract more private benefits, the effects of this relationship should extend beyond the returns at announcement. In this section, I examine other M&A outcomes to assess whether managers alter their behavior accordingly in the face of lower monitoring.

5.1 Completions

Following the public announcement of an acquisition, there is a publicly observable takeover process that occurs prior to deal completion [Boone and Mulherin (2007)]. Dikova, Sahib, and Witteloostuijn (2010) note that a deal may fall through during this intermediate period for any number of reasons, including adverse rulings by courts, breach of contract, or blockage by a regulatory agency. Liu (2016) suggests an alternative mechanism; if a deal is viewed in an unfavorable light, a firm may withdraw its bid to offset the negative market reaction.

In light of the evidence presented above that shareholders of connected firms forgo $110 million in value on average for every M&A transaction the firm initiates, the deals announced by connected firms may be less likely to succeed as shareholders push management to abrogate the deal. However, the presence of a captive mutual fund family serving as trustee may insulate management from this pressure. The net effect between these two is unclear. Therefore, I examine the impact of the trustee relationship on the likelihood of an announced deal succeeding.

In Table 1-9, I conduct logistic regressions where the dependent variable is an indicator variable equal to 1 if the deal ultimately fails, and 0 if the deal is completed[14]. The independent variables of interest are *Connected MF Indicator*, *3 Day CAR*, and the interaction between the two (*Connection * 3 Day CAR*).

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[14] I follow Chen, Harford, and Li (2007) in defining a deal as completed only when indicated, and failed otherwise.

The remaining control variables are similar to those suggested by Chen, Harford, and Li (2007). Coefficients presented represent marginal effects, calculated as the partial derivative of the response with respect to the covariate while the remaining variables are evaluated at their sample averages for continuous variables, and as the difference in the likelihood of failure from either possible outcome of binary variables when the remaining variables are evaluated at their sample averages.

The coefficient on *Connected MF Indicator* is negative and significant only when the sample is restricted to deals where the acquirer has selected a private target. This result is consistent with earlier findings that the effects of mutual fund families serving as trustee are concentrated in deals for private targets, and consequently I will concentrate my analysis on this model. The coefficient from this specification suggests that firms with connections to mutual fund families via retirement asset management have a failure rate that is 1.9% lower than unconnected firms when selecting private targets, which is economically large compared to the sample average of 7.8%. Similar to Chen et al. (2007), I note that the effect of the announcement return is small and insignificant. However, the coefficient on the interaction term *Connection * 3 Day CAR* is positive and significant, indicating that the failure rate for connected firms will fall as announcement returns decline. Thus, connected firms are less likely to withdraw a deal, and are even less likely to do so when the announcement return is low.[15]

5.2 M&A Frequency

My multivariate results from Tables 1-3 and 1-9 indicate that managers at connected firms are able to extract private benefits when undertaking mergers and acquisitions, specifically when targeting private firms, and that they are more likely to complete these deals. In light of prior literature suggesting that private

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[15] In light of the Ai and Norton critique on the interpretation of interaction terms in non-linear models, I present my interpretation tentatively. To ensure that my interpretation persists over all values of the interacted variables in my sample, I repeat this analysis using the linear probability model and find qualitatively similar results. The magnitude and significance on the interaction variable are virtually unchanged.

benefits are a driver for merger activity [Morck, Shleifer, and Vishny (1990), Hartzell, Ofek, Yermack (2004)], managers at connected firms should have incentives to increase the frequency with which they initiate mergers.

Table 1-10 presents the results of formal tests addressing the frequency of mergers undertaken by managers at connected firms. The dependent variable in all columns is the number of mergers initiated by a firm in a given year, and the sample includes all Compustat firms during my sample period (1999-2013) where sufficient data was available. The first column of Table 1-7 incorporates all deals, and the coefficient on my independent variable of interest (*Connected MF Indicator*) is positive and significant (0.043), representing a 25% increase from the average (0.175). Columns 2 and 3 subdivide the sample into public and private targets respectively. These columns show that the increase in M&A announcement frequency by connected firms is concentrated solely in acquisitions of private targets. When considered together with my prior findings, this result is intuitively appealing; managers at connected firms are increasing the frequency of merger initiation only for the subset of targets where mutual fund family trustees allow private benefit extraction.

5.3 Diversifying Mergers

Previous papers have established that when agency costs are higher, managers are more likely to undertake diversifying mergers [Aggarwal and Samwick (2003), Denis, Denis, Sarin (1997), Hyland and Diltz]. These mergers increase the size and complexity of the firm, which can lead to higher levels of executive compensation [Smith and Watts (1992), Morck, Shleifer, and Vishny (1990)]. Therefore, CEOs at connected firms may also choose to pursue diversifying acquisitions with greater frequency, as this is another avenue to obtain private benefits.

Table 1-11 presents the results of tests on the frequency of diversifying mergers announced by connected firms. The sample criteria are similar to those in Table 1-7. However, the dependent variable in

these specifications is the number of diversifying mergers a firm initiated in a given year, where I classify

a deal as diversifying when the target is in a different industry[16] than the acquirer. Columns 1-3 again show

the results over all deals, deals for public firms, and deals for private firms, respectively. The coefficient on

Connected MF Indicator is positive and significant in all models, which demonstrates a shift by managers

at connected firms towards more diversifying acquisitions, regardless of the target's public status, though

these effects are most heavily concentrated in acquisitions involving private targets. The coefficient on

Connected MF Indicator when the sample is restricted to private targets is also economically large, as it

represents a 37.4% increase over the average number of diversifying deals. Thus, connected firms are much

more likely to pursue a diversifying acquisition if the target is private.

5.4 Large Losses

While my results suggest that the presence of a mutual fund company serving as trustee for a firm's

401(k) assets does not generally impact the selection of public targets by connected client firms, this does

not mean that this is never the case. Indeed, Cvijanovic et al. (2015) indicate that trustees only vote against

Institutional Shareholder Services recommendations and on behalf of management when it matters most to

the manager – in votes where the outcome is uncertain. In the context of mergers and acquisitions for public

targets, it is possible that trustees are doing something similar and only assisting management when they

need it most. From an intuitive standpoint, this would occur when management faced the most pressure to

rescind an offer, which would be deals where the market reacted least favorably – deals that are met with

the lowest announcement returns and thus destroy the most shareholder value.

To test this hypothesis, I examine cases where the acquirer experiences a large loss around

announcement. I follow Field and Mkrtchyan (2017) in defining a large loss as one in which the market

capitalization of the acquirer declined more than $500 million from day t-2 to t+1. Table 1-12 presents the

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[16] I make use of the Fama-French 49 industry scheme to identify industries.

marginal effects from a logistic regression of an indicator for the presence of a large loss. The coefficient on *Connected MF Indicator* is insignificant in all specifications, suggesting that the presence of a mutual fund family serving as trustee does not have any impact on the selection of public targets by retirement asset management client firms.[17] This lack of evidence may be unsurprising, as deals with the largest losses may also be the deals that encounter the most shareholder scrutiny, potentially presenting the largest litigation risks to mutual fund trustees.

5.5 Payment Method

If managers at connected firms are aware they are being monitored less by shareholders (specifically, the mutual fund family that serves as trustee) and they are able to extract private benefits out of mergers, then they should be less concerned about the payment method used to acquire targets and more willing to make use of inefficient payment methods. Table 1-13 presents results from formal tests of this conjecture. Columns 1 and 2 examine a firm's likelihood of initiating a deal that is financed entirely by cash or stock, respectively. The coefficient on *Connected MF Indicator* is positive and significant for cash deals and negative and significant for stock deals. At first glance, this seems like evidence that mutual fund family trustees have a positive effect on at least one aspect of connected firm M&A behavior, as previous literature suggests all cash deals are better and all stock deals are worse [Bouwman, Fuller, Nain (2009), Shleifer and Vishny (2003), Loughran and Vijh (1997)]. However, after subdividing the sample to the payment methods used across public and private targets (Columns 3-6), I find evidence that this may not be the positive outcome it initially seems.

Fuller, Netter, and Stegemoller (2002) hypothesize that using cash to purchase privately owned firms results in overpayment, as private owners face immediate tax implications when their firms are

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[17] Table 1-12 examines the probability of incurring a large loss across all targets and just private targets as well. However, Field and Mkrtchyan (2017) note that large loss deals are concentrated to public targets, so the lack of an effect for these specifications is unsurprising.

purchased with cash. When the transaction for a private target is financed with stock, private firm owners are able to defer these tax implications, and so they may accept a discounted price for the firm. Thus, deals that are financed entirely with cash for private firms may involve overpayment to compensate private firm owners for the taxes they will face. If I observe an increase in cash payment for private targets by connected firms, this would be further evidence of managers pursuing mergers for personal gains and disregarding shareholders. Column 6 of Table 1-9 documents evidence of exactly this, as the coefficient on *Connected MF Indicator* is positive and significant (and the coefficient in column 3 is insignificantly different from zero), which shows the increase in the use of cash as a payment method is concentrated in deals for private targets[18].

5.6 Public Target Premiums

In addition to inefficient methods of payment examined in the previous section, it is possible that connected firms are overpaying for target firms outright. I address this possibility by examining the premiums offered to public targets by acquiring firms, as measured by the stock price run-up over the course of the four weeks leading up to announcement. To test this properly, I follow the methodology of Fich, Harford, and Tran (2015) and perform a two stage analysis. In the first stage, I utilize the entirety of firms from Compustat with available data and assess the probability of becoming a target. To control for self-selection into becoming a target, the inverse Mills ratio from the first stage regression is then included in the second stage, where I restrict the sample to fiscal years in which a public firm became a target.

The rests from these tests are presented in Table 1-14. Panel A presents the marginal effects from a logistic regression where the dependent variable is an indicator for whether a firm became a target in a given fiscal year. The unconditional probability of being a target in any given year is 4.98%. My main

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[18] I also observe a statistically significant negative coefficient for connected firms' use of stock to fund deals for public firms, which may be viewed as a positive effect, but this coefficient is economically insignificant.

variable of interest (*Connected MF Indicator*) is marginally statistically insignificant. It is, however, negative and economically significant, as it suggests connected firms have a 16.1% lower chance of being targeted.

Panel B presents the results of OLS regressions where the dependent variable is the target premium over the four weeks leading up to announcement. The independent variables of interest in this specification are *Target Connection* and *Acquirer Connection*, which are indicator variables similar to *Connected MF Indicator*, identifying if the target or the acquirer had a mutual fund family serving as trustee during that fiscal year. The coefficient on *Acquirer Connection* is insignificant, indicating that connected acquirers are not overpaying for targets on average[19]. However, the coefficient on *Target Connection* is negative and significant, suggesting that premiums paid to target firms are lower when the target has a mutual fund serving as trustee of its retirement assets. This effect (-28.4%) is large relative to the average premium offered of 48.4%.

Together, these findings present an interesting dichotomy. Firms that have a mutual fund trustee are less likely to be acquired, but demand a lower premium when they are acquired. I hypothesize that these results suggest that trustees shield managers from market discipline in many cases. However, in cases where the benefits managers realize when their firm is acquired (such as golden parachute provisions and stock option vesting) outweigh the drawbacks of being acquired (such as loss of employment), or when sufficient market demand for a change in control exists to override the support of the trustee, then managers are willing to sell for less to realize these private benefits and mutual fund trustees are supporting them. These last results have potentially interesting implications, which are left as an area for further study.

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[19] The lack of significance here is again unsurprising, as this sample is restricted to public targets and I find the effects of an acquirer having a mutual fund trustee are concentrated in deals where a private target is selected.

6. Conclusion

In this paper, I address the question of whether or not acting as trustee provides incentives for mutual fund families to alter their monitoring efforts, and how this affects subsequent firm behavior. In the context of the M&A markets, I demonstrate a reduction in the quality and an increase in the completion rate and quantity of mergers announced by connected firms, which suggests a decline in the overall monitoring effort exerted by mutual fund family trustees. These results are concentrated in mergers that target private firms, deals that are diversifying, and acquisitions where all cash is the proposed method of payment. When viewed together, my results suggest a selective lack of monitoring by mutual fund family trustees, which enables managers at connected firms to increase the private benefits they are able to extract during certain M&A transactions. Thus, I conclude that the effects of the retirement asset connection I investigate extend beyond the previously documented effects on the holdings and voting practices of mutual fund families to the impacts on the governance these mutual fund families put forth and the subsequent real behaviors of sponsor firms.

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Appendix A

Variable Definitions From Chapter 1

Variables	Definition and Sources
Dependent Variables	
3-Day CAR	The 3 day cumulative abnormal return for the three days surrounding the announcement of a merger or acquisition beginning at day t = -1. Abnormal returns were calculated using a standard market model approach.
Withdrawn Deal [0,1]	An indicator variable equal to 1 if a deal ultimately fails to be completed and zero otherwise.
Large Loss [0,1]	An indicator variable equal to 1 if a firm experienced a loss of at least $500 million in 2013 dollars during the time frame [t-2, t+1] around announcement.
Number of Mergers Announced	The number of mergers announced by a firm in a given year.
Diversifying Mergers	The number of mergers where the target is in a different Fama-French 49 industry than the acquirer in a given year.
Target (0,1)	An indicator variable equal to 1 if a firm became a target during that fiscal year.
4 Week Premium	The change in stock price over the 4 week period prior to announcement, as reported by Thomson SDC.
Main Independent Variables	
Connected MF Indicator	An indicator variable equal to 1 if the acquiring firm had a mutual fund family serving as trustee of the firm's 401(k) retirement assets at the time of the deal's announcement and 0 otherwise.
Trustee Predates CEO	And indicator variable equal to 1 if the acquiring firm has both a mutual fund family serving as trustee of the firm's 401(k) retirement assets and the trustee was appointed prior to the current CEO taking office, and 0 otherwise.
Matters to Trustee	An indicator variable equal to 1 if a firm is in the top 10% of holdings for the mutual fund company that serves as trustee.
Firm Characteristics	
Firm Size	The natural log of the assets of the acquiring firm as of the most recent fiscal year ended prior to the announcement of a deal.

Market to Book	Market value of assets (as measured by the book value of debt plus the market value of equity) divided by the book value of assets.
Cash Flow	Operating income before depreciation minus interest and related expense, income taxes, and capital expenditures, scaled by the book value of total assets.
Leverage	Book value of debt divided by market value of total assets.
Stock Price Run-up	Bidder's buy-and-hold abnormal return (BHAR) during the period (-210, -11), where the market index is the CRSP value-weighted return. Field and Mkrtchyan (2017)
Prior Year Market Adj. Return	The cumulative abnormal return during the one year window ending four weeks prior to the merger announcement, calculated as the residual from the market model estimated during the year before. Fich, Harford, Tran (2015)
Target H-H Index	A variable representing the competitiveness of the firms' industry. It is computed as the sum of squared market shares of all firms in the industry using data on sales, as in Fich et al. (2015) and Masulis et al. (2007).
Target Industry Liquidity Index	The sum of the value of all M&A transactions worth at least $1 million in a given industry for each year, divided by the total book value of all assets within that same industry. Fich et al. (2015)
One Yr. Macroeconomic Change	The change in the industrial production index over the one year period before the merger.
% Institutional Ownership	The percentage of shares outstanding owned by institutions, as measured by 13F holdings.
IO Less Trustee's Shares	The percentage of shares outstanding owned by institutions, less the percentage owned by the firm's trustee.
Entrenchment Index	The firm's E-index score, constructed according to Bebchuk, Cohen, Ferrell (2009).
Deal Characteristics	
Relative Deal Size	Deal value reported by Thomson One divided by the market value of equity.
Public Target	An indicator variable equal to 1 if the target is a publicly traded firm and 0 otherwise.
Cash Deal	An indicator variable equal to 1 if the offer is financed only by cash and/or liabilities and zero otherwise.
Stock Deal	An indicator variable equal to 1 if the offer is financed only by stock and zero otherwise.
Diversifying M&A	An indicator variable equal to 1 if the target is in the same Fama-French 49 industry as the acquirer and zero otherwise.

Tar. Termination Fee	An indicator variable equal to 1 if a target termination provision is present and zero otherwise.
Acq. Termination Fee	An indicator variable equal to 1 if an acquirer termination provision is present and zero otherwise.
Lockup	An indicator variable equal to 1 if the deal includes a lockup of target or acquirer shares and zero otherwise.
Toehold	An indicator variable equal to 1 if the acquirer owns a non-zero fraction of the target's shares prior to bidding and zero otherwise.
Tender Offer	An indicator variable equal to 1 if the deal is classified as a tender offer by Thomson One and zero otherwise.
Hostile Deal	An indicator variable equal to 1 if the deal is classified as hostile by Thomson One and zero otherwise.
Merger of Equals	An indicator variable equal to 1 if the deal is classified as a merger of equals by Thomson One and zero otherwise.
Competed Deal	An indicator variable equal to 1 if the deal was competed and zero otherwise.

Trustee and Retirement

Individual IO	The institutional ownership of an individual institution.
IO When Trustee Present	The institutional ownership of an individual institution in a firm that has a mutual fund trustee.
IO If Current Trustee	The institutional ownership by a mutual fund trustee in a quarter where it serves as trustee.
IO If Ever Trustee	The institutional ownership by an mutual fund company that serves as a trustee at some point in the sample.
Plan Participants	The total number of participants in a firm's 401(k).
Employer Contributions	The dollar amount the employer contributed to the plan.
Participant Contributions	The dollar amount the employee contributed to the plan.
Plan Assets	The total assets within the 401(k), measured at end of year.
Plan Investments	The total investments within the 401(k), measured at end of year.

0.7

0.6

0.5

0.4

0.3

0.2

0.1

0

-0.1

-0.2

Abnormal Return (Percent)

Firms Without Connections

Firms With Connections

-5 -4 -3 -2 -1 0 1 2 3 4 5

Trading Days Relative to Merger Announcement
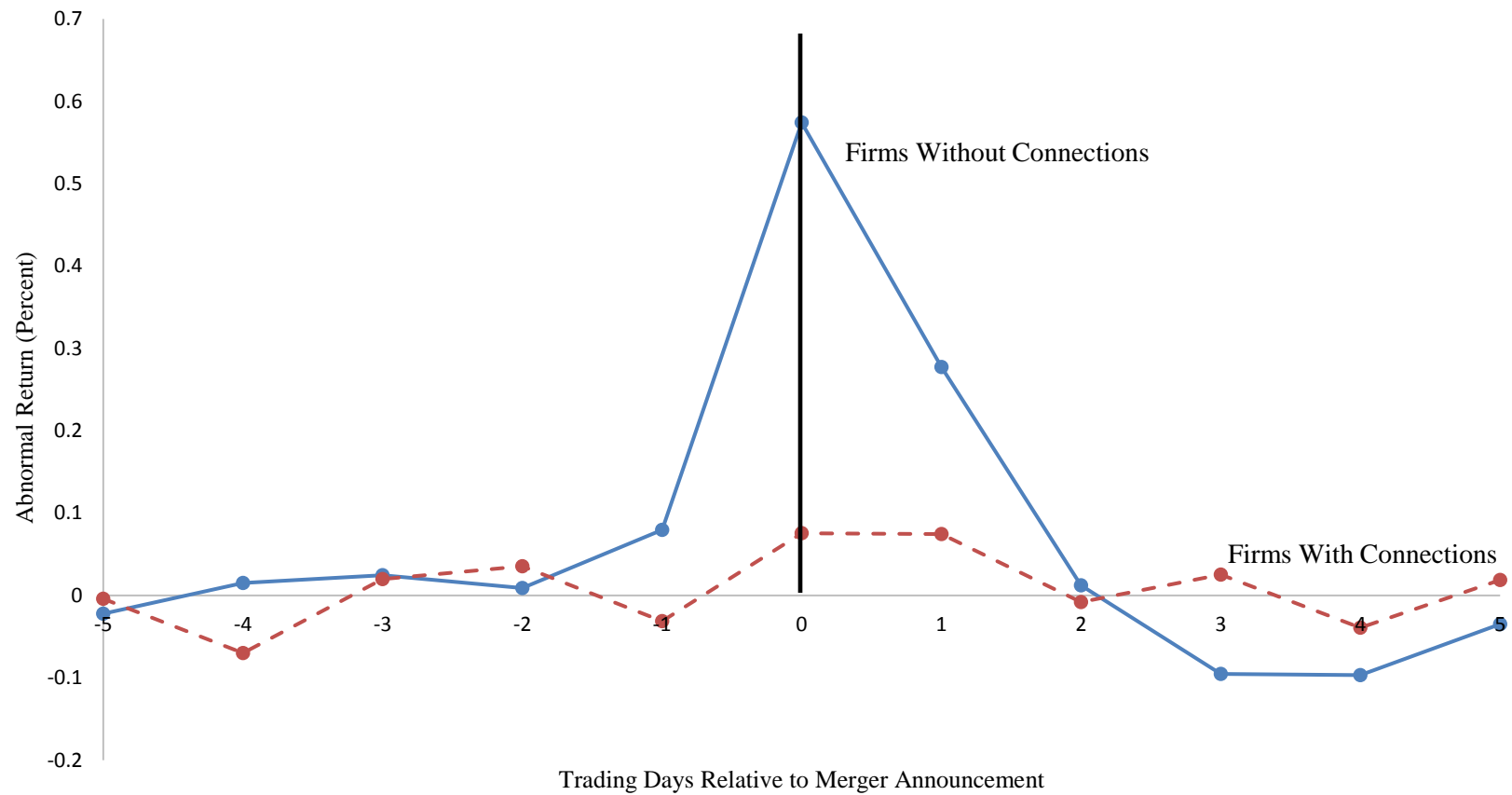
Figure **1-1**: Abnormal Returns Around Announcement

Note: This figure plots abnormal returns, as measured using a standard market model, for the 10 day window [-5, 5] surrounding M&A announcement. The solid line represents abnormal returns for firms without connections, while the dotted line represents abnormal returns to firms with a connection at the time of announcement. I consider a firm to be connected if a mutual fund family served as trustee of the firm's 401(k) retirement assets at the time the deal was announced.
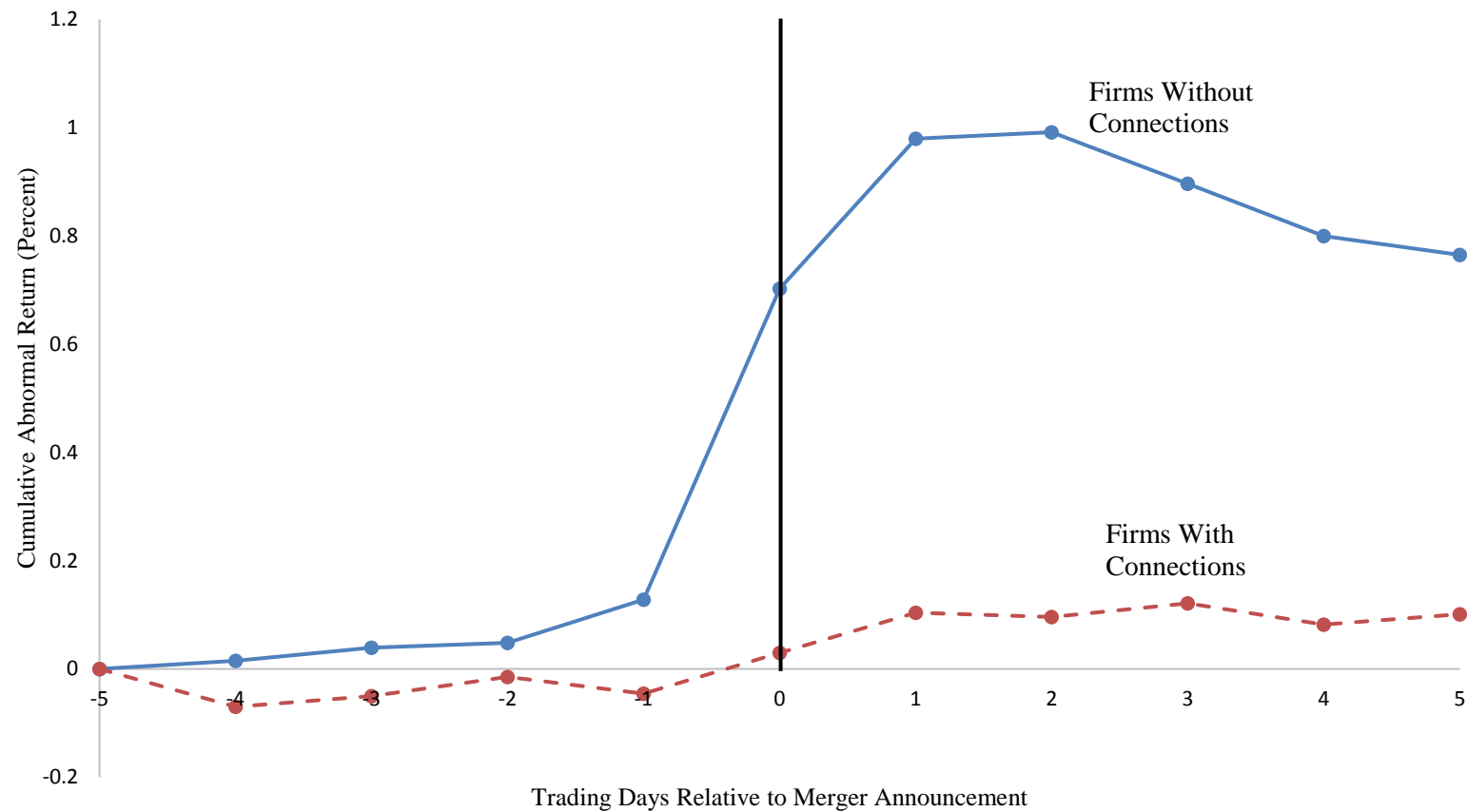
Figure **1-2**: Cumulative Abnormal Returns Around Announcement

Note: This figure plots Cumulative Abnormal Returns (CARs), as measured using a standard market model, for the 10 day window [-5, 5] surrounding M&A announcement. The solid line represents CARs for firms without connections, while the dotted line represents CARs to firms with a connection at the time of announcement. I consider a firm to be connected if a mutual fund family served as trustee of the firm's 401(k) retirement assets at the time the deal was announced.

Table **1-1**: Summary Statistics for Trustees and Retirement Plans

This table presents summary stats on ownership data for institutions, as well as for end-of-year data on the retirement plans for which they serve as trustee, over the span 1999-2013. Panel A presents means of institutional ownership for trustees, and subdivides the sample into all institutions and just institutions that serve as trustee. The first column in both subsections represents all firms in each sample. The second and third columns examine institutional ownership by trustees and non-trustee or by retirement asset management client firms and non-client firms across the respective subsections. Panel B presents means of characteristics of the retirement plans in my sample. The first column presents data for the full sample, the second column presents data for Connected Firms (i.e. those that had a mutual fund family serving as trustee), and the third column presents data for Unconnected Firms (i.e. those without a mutual fund family serving as trustee). The last column in both panels presents the differences across means, and *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively, from *t*-tests of the differences in means. All variables are defined in Appendix A.

Panel A: Individual Institutional Ownership Characteristics

All Institutional Ownership

	All	Trustee	Non-Trustee	Difference
Individual IO	0.45%	2.00%	0.45%	1.55%***
IO When Trustee Present	0.24%	2.00%	0.23%	1.77%***

Trustee Institutional Ownership

	All	Client	Non-Client	Difference
IO If Current Trustee	0.85%	2.00%	0.84%	1.16%***
IO If Ever Trustee	0.79%	2.00%	0.78%	1.22%***

Panel B: Retirement Plan Characteristics

	All	Connected	Unconnected	Difference
Plan Participants	17,274	31,018	15,484	15,534**
Employer Contributions	8.1M	29.2M	4.9M	24.3M**
Participant Contributions	227.3K	602.7K	173.1K	429.6K**
Plan Assets	650.4M	1,836.3M	445.7M	1,390.6M**
Plan Investments	508.5M	1,686.9M	341.1M	1,345.8M**

Table **1-2**: Summary Statistics for Main Sample

This table presents summary stats for my sample, which spans 1999-2013. Panel A presents means and medians (in brackets) for 3 day CARs, as measured in percentage terms, surrounding announcement. Panel B presents means and medians (in brackets) for firm characteristics. Panel C presents means for deal characteristics. For each panel, the first column presents data for the full sample, the second column presents data for Connected Firms (i.e. those that had a mutual fund family serving as trustee), and the third column presents data for Unconnected Firms (i.e. those without a mutual fund family serving as trustee). The last column presents the difference between Connected and Unconnected firms, and *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively, from *t*-tests and Wilcoxon rank sum tests of the differences in means and medians. The full sample includes 5,788 deals, with 1,010 deals by connected firms and 4,778 by unconnected firms. All variables are defined in Appendix A.

Panel A: Cumulative Abnormal Returns at Announcement

	Full Sample	Connected	Unconnected	Difference
All Deals	1.07%	0.19%	1.25%	-1.06%***
	[0.47%]	[0.02%]	[0.59%]	[-0.57%]***
Public Targets	-0.92%	-0.59%	-1.01%	0.42%
	[-0.40%]	[-0.14%]	[-0.51%]	[0.37%]
Private Targets	1.48%	0.39%	1.70%	-1.31%***
	[0.67%]	[0.07%]	[0.83%]	[-0.76%]***

Panel B: Firm Characteristics

	Full Sample	Connected	Unconnected	Difference
Assets (Billions)	5.97	13.89	4.29	9.60***
	[0.97]	[5.50]	[0.64]	[4.86]***
Cash Flow	2.32%	5.93%	1.55%	4.38%***
	[5.26%]	[6.72%]	[4.95%]	[1.77%]***
Market-to-Book	2.70	2.15	2.81	-0.66***
	[1.71]	[1.79]	[1.69]	[0.10]**
Leverage	30.39%	32.42%	29.96%	2.46%***
	[26.79%]	[30.31%]	[25.61%]	[4.70%]***
Inst. Ownership	63.05%	75.82%	60.35%	15.47%***
	[70.18%]	[78.85%]	[66.80%]	[12.05%]***
E-Index	2.19	2.46	2.09	0.37***
	[2.00]	[2.00]	[2.00]	[0.00]***

Panel C: Deal Characteristics

	Full Sample	Connected	Unconnected	Difference
Relative Deal Size[a]	9.59%	4.24%	10.94%	-6.70%***
Cash Deal	64.43%	78.22%	61.51%	16.71%***
Stock Deal	6.76%	1.68%	7.83%	-6.15%***
Diversifying	42.59%	48.81%	41.27%	7.54%***
Acquirer Termination Fee	4.99%	4.46%	5.11%	-0.65%
Target Termination Fee	14.82%	17.43%	14.27%	3.16%**
Lockup	1.19%	0.59%	1.31%	-0.72%*
Toehold	2.76%	4.16%	2.47%	1.69%***
Tender Offer	4.84%	6.73%	4.44%	2.29%***
Hostile Deal	0.17%	0.10%	0.19%	-0.09%
Merger of Equals	0.38%	0.10%	0.44%	-0.34%
Competed Deal	0.78%	1.19%	0.69%	0.50%

[a] Denotes medians presented instead of means

Table **1-3**: M&A Announcement Returns and 401(k) Management Connections

This table presents the results from OLS regressions of M&A announcement returns on connections to mutual fund families formed through retirement asset management. The sample includes deals for both public and private targets announced by U.S. acquirers between 1999-2013, excluding buybacks, recapitalizations, exchange offers, divestitures, repurchases, and self-tenders. I additionally omit acquisitions announced by financial and utility firms (SIC codes 6000-6999 and 4000-4999 respectively). The dependent variable in all columns is the 3 day cumulative abnormal return around announcement [-1, 1]. My explanatory variable of interest, *Connected MF Indicator*, indicates that the acquiring firm had a mutual fund family serving as trustee of the firm's 401(K) retirement assets during the quarter the deal was announced. All other variables are defined in Appendix A. Column 1 presents the raw univariate result, including year and industry fixed effects. Column 2 presents the results of a multivariate analysis with common control variables. Columns 3 and 4 repeat the analysis from Column 2, but partition the sample into public and private targets, respectively. Standard errors are clustered at the firm level. T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	Dependent Variable = 3 Day CAR over (-1, 1)			
	All Targets	All Targets	Public Targets	Private Targets
Connected MF Indicator	-1.149***	-0.420*	-0.391	-0.539**
	(-5.55)	(-1.90)	(-0.70)	(-2.37)
Acquiring Firm Characteristics				
Firm Size		-0.319***	-0.211	-0.344***
		(-4.88)	(-1.25)	(-4.80)
Market to Book		-0.010	0.088	-0.042
		(-0.37)	(0.94)	(-1.48)
Cash Flow		-1.000	0.311	-1.276
		(-0.91)	(0.14)	(-1.06)
Leverage		-0.959	2.841	-1.728**
		(-1.41)	(1.57)	(-2.37)
Deal Characteristics				
Relative Deal Size		0.601*	-1.249*	0.956**
		(1.73)	(-1.75)	(2.12)
Public Target		-1.927***		
		(-3.68)		
Cash Deal		0.242	1.874***	0.251
		(0.92)	(3.13)	(0.83)
Stock Deal		-0.531	-1.474	0.464
		(-0.83)	(-1.48)	(0.58)
Diversifying M&A		-0.186	-0.479	-0.239
		(-0.85)	(-0.87)	(-1.01)
Target Termination Fee		0.028	-0.186	1.016
		(0.05)	(-0.32)	(0.90)
Acquirer Termination Fee		-1.616**	-2.214***	1.586
		(-2.39)	(-2.85)	(1.26)

Lockup		-1.117	-0.159	-3.581
		(-1.10)	(-0.13)	(-1.03)
Toehold		0.495	-1.441	0.623
		(0.87)	(-0.93)	(0.99)
Tender Offer		2.162***	1.045*	3.651***
		(4.32)	(1.92)	(6.78)
Hostile Deal		-2.315*	-0.393	0.000
		(-1.71)	(-0.28)	(0.00)
Merger of Equals		-0.029	2.134	-0.865
		(-0.01)	(0.79)	(-0.12)
Competed Deal		-1.878	-1.299	-2.286
		(-1.58)	(-1.08)	(-0.79)
Year FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Adjusted R^2	0.017	0.041	0.115	0.028
Observations	5,788	5,788	1,002	4,786

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Table **1-4**: The Importance of Holdings to Trustee Monitoring Efforts

This table tests whether mutual fund trustees increase their monitoring efforts for 401(K) client firms when the trustee's position in the firm's stock is important to the performance of the trustee's overall portfolio. The sample includes deals for both public and private targets announced by U.S. acquirers between 1999-2013, excluding buybacks, recapitalizations, exchange offers, divestitures, repurchases, and self-tenders. I additionally omit acquisitions announced by financial and utility firms (SIC codes 6000-6999 and 4000-4999 respectively). The dependent variable in all columns is the 3 day cumulative abnormal return around announcement [-1, 1]. In addition to my main explanatory variable of interest, *Connected MF Indicator*, I include an interaction effect (*Matters to Trustee*) that indicates when a connected firm was in the top 10% of the trustee's holdings, similar to Fich, Harford, and Tran (2014). The remaining controls are from Column 2 of Table 1-3 and are defined in the Appendix. Columns 1-3 examine the effects to all targets, public targets only, and private targets only. All models include industry and year fixed effects and standard errors are clustered at the deal level. T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	Dependent Variable = 3 Day CAR over (-1, 1)		
	All Targets	Public Targets	Private Targets
Connected MF Indicator	-0.795***	-0.811	-0.874***
	(-2.68)	(-0.82)	(-2.95)
Matters to Trustee	0.799**	1.099	0.614*
	(2.34)	(1.08)	(1.78)
Acquiring Firm Characteristics			
Firm Size	-0.339***	-0.245	-0.359***
	(-5.07)	(-1.41)	(-4.87)
Market to Book	-0.010	0.085	-0.042
	(-0.35)	(0.91)	(-1.47)
Cash Flow	-0.960	0.424	-1.254
	(-0.88)	(0.19)	(-1.04)
Leverage	-0.879	2.906	-1.670**
	(-1.29)	(1.59)	(-2.29)
Deal Characteristics			
Relative Deal Size	0.595*	-1.270*	0.952**
	(1.72)	(-1.78)	(2.11)
Public Target	-1.947***		
	(-3.73)		
Cash Deal	0.252	1.847***	0.257
	(0.96)	(3.09)	(0.85)
Stock Deal	-0.509	-1.517	0.477
	(-0.80)	(-1.51)	(0.59)
Diversifying M&A	-0.192	-0.495	-0.244
	(-0.88)	(-0.90)	(-1.03)
Target Termination Fee	0.021	-0.193	1.026
	(0.04)	(-0.33)	(0.91)
Acquirer Termination Fee	-1.601**	-2.225***	1.605
	(-2.37)	(-2.86)	(1.27)

Lockup	-1.079	-0.122	-3.585
	(-1.06)	(-0.10)	(-1.04)
Toehold	0.495	-1.462	0.625
	(0.87)	(-0.95)	(1.00)
Tender Offer	2.168***	1.012*	2.949***
	(4.34)	(1.85)	(4.87)
Hostile Deal	-2.297*	-0.400	0.000
	(-1.69)	(-0.28)	(.)
Merger of Equals	-0.028	2.144	-0.959
	(-0.01)	(0.79)	(-0.14)
Competed Deal	-1.857	-1.275	-2.279
	(-1.57)	(-1.06)	(-0.78)
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Adjusted R^2	0.041	0.115	0.028
Observations	5,788	1,002	4,786

Table **1-5**: Internal Firm Governance Characteristics and M&A Announcement Returns

This table presents the results from OLS regressions of M&A announcement returns on connections to mutual fund families formed through retirement asset management after controlling for alternative mechanisms of firm specific corporate governance. The data used in these tables begins with the sample from Table 1-3, but restricts the sample to observations where the percentage of a firm's outstanding shares owned by institutions (*% Institutional Ownership*) and the firm's E-index score (*Entrenchment Index*) as in Bebchuk, Cohen, and Ferrell (2009) could be computed. The dependent variable in all columns is the 3 day cumulative abnormal return around announcement [-1, 1]. My explanatory variable of interest, *Connected MF Indicator*, indicates that the acquiring firm had a mutual fund family serving as trustee of the firm's 401(K) retirement assets during the quarter the deal was announced. All other control variables are defined in Appendix A. Panels A, B, and C detail the results for all targets, public targets only, and private targets only, respectively. All models include industry and year fixed effects and standard errors are clustered at the firm level. T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

Panel A: All Targets

	Dependent Variable = 3 Day CAR over (-1, 1)		
	All Targets	All Targets	All Targets
Connected MF Indicator	-0.430*	-0.308	-0.299
	(-1.96)	(-1.45)	(-1.42)
% Institutional Ownership	-0.017***		-0.016**
	(-3.62)		(-2.21)
Entrenchment Index		0.036	0.072
		(0.36)	(0.70)
Full Table 1-3 Controls	Y	Y	Y
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Adjusted R^2	0.043	0.043	0.045
Observations	5,788	3,215	3,215

Panel B: Public Targets

	Dependent Variable = 3 Day CAR over (-1, 1)		
	Public Targets	Public Targets	Public Targets
Connected MF Indicator	-0.344	-0.138	-0.081
	(-0.61)	(-0.25)	(-0.15)
% Institutional Ownership	-0.015		-0.025*
	(-1.28)		(-1.80)
Entrenchment Index		0.372*	0.433*
		(1.66)	(1.88)
Full Table 1-3 Controls	Y	Y	Y
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Adjusted R^2	0.116	0.068	0.072
Observations	1,002	741	741

Panel C: Private Targets

	Dependent Variable = 3 Day CAR over (-1, 1)		
	Private Targets	Private Targets	Private Targets
Connected MF Indicator	-0.558**	-0.385*	-0.372*
	(-2.45)	(-1.74)	(-1.69)
% Institutional Ownership	-0.014***		-0.008
	(-2.82)		(-0.95)
Entrenchment Index		-0.034	-0.022
		(-0.32)	(-0.20)
Full Table 1-3 Controls	Y	Y	Y
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Adjusted R^2	0.029	0.033	0.037
Observations	4,634	2,396	2,396

Table **1-6**: Endogenous Trustee Selection by Sponsor Firms

This table tests whether the sponsor firm's ability to choose its trustee is an important consideration in determining M&A announcement returns. In Panel B the sample is partitioned such that only deals by connected firms are examined and compares the 3 day CARs of connected firms where the trustee predated the CEO with connected firms where managers were potentially able to select their preferred trustee. The dependent variable in all columns is the 3 day cumulative abnormal return around announcement [-1, 1]. The explanatory variables of interest are *Connected MF Indicator*, identifying firms with links to mutual fund complexes via 401(k) asset management, and *Trustee Predates CEO* which is a dummy variable that indicates when a trustee predates the current CEO at the firm. The remaining controls are from Column 2 of Table 1-3. All models include industry and year fixed effects and standard errors are clustered at the deal level. T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

Panel A: Impact of Selection

	Dependent Variable = 3 Day CAR over (-1, 1)		
	All Targets	Public Targets	Private Targets
Connected MF Indicator	-0.484**	-0.177	-0.662***
	(-1.96)	(-0.29)	(-2.61)
Trustee Predates CEO	0.236	-0.782	0.470
	(0.68)	(-0.91)	(1.27)
Full Table 1-3 Controls	Y	Y	Y
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Adjusted R^2	0.041	0.115	0.027
Observations	5,788	1,002	779

Panel B: Deals by Connected Firms

	Dependent Variable = 3 Day CAR over (-1, 1)		
	All Targets	Public Targets	Private Targets
Trustee Predates CEO	-0.014	-0.169	0.401
	(-0.04)	(-0.18)	(1.01)
Full Table 1-3 Controls	Y	Y	Y
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Adjusted R^2	0.059	0.290	0.043
Observations	1,010	211	799

Table **1-7**: Matched Sample Summary Statistics

This table presents evidence on the balance of the sample after matching on firm assets and institutional ownership. Included are the means and differences in means for both firm assets and institutional ownership across treatment groups. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels, and is measured using t-tests.

Panel A: Firm Assets

	Connected	Unconnected	Difference
Full Sample with Trustee IO	5.17B	4.82B	0.35B
Full Sample without Trustee IO	5.17B	5.22B	-0.05B
Public Targets with Trustee IO	7.63B	7.48B	0.15B
Public Targets without Trustee IO	7.63B	7.63B	0.00B
Private Targets with Trustee IO	4.68B	4.27B	0.40B
Private Targets without Trustee IO	4.68B	4.45B	0.23B

Panel B: Institutional Ownership

	Connected	Unconnected	Difference
Full Sample with Trustee IO	77.80%	74.81%	2.99%***
Full Sample without Trustee IO	75.33%	73.15%	2.18%**
Public Targets with Trustee IO	77.36%	73.42%	3.94%**
Public Targets without Trustee IO	74.40%	70.38%	4.02%*
Private Targets with Trustee IO	77.90%	76.26%	1.64%
Private Targets without Trustee IO	75.56%	75.04%	0.52%

Table **1-8**: Matched Sample Analysis

This table presents results from OLS regressions of M&A announcement returns on connections to mutual fund families formed through retirement asset management. Observations are pairs, drawn from the sample used in Table 1-3 and matched optimally on firm size and institutional ownership either including or excluding the trustee's stake. Matching is performed at the deal level. The dependent variable of interest remains *Connected MF Indicator*, which indicates that the acquiring firm had a mutual fund family serving as trustee of the firm's 401(K) retirement assets during the quarter the deal was announced. All other variables are defined in Appendix A. The first three columns present the results where deals are matched on institutional ownership that includes the trustee's shares, and represents cases where the presence of the trustee has replaced another institutional shareholder. The second three columns present the results where deals are matched on institutional ownership excluding the trustee's shares, and represent cases where the presence of a trustee has replaced retail investors. Each subset examines the results when the sample includes all targets, only public targets, or only private targets, respectively. Standard errors are clustered at the firm level, t-statistics are reported in parentheses, and statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	Dependent Variable = 3 Day CAR over (-1, 1)					
	Trustee Replaces Institutional			Trustee Replaces Retail		
	All Targets	Public Targets	Private Targets	All Targets	Public Targets	Private Targets
Connected MF Indicator	-0.332	0.362	-0.515*	-0.495*	0.068	-0.347
	(-1.17)	(0.40)	(-1.85)	(-1.68)	(0.08)	(-1.21)
Acquiring Firm Governance						
% Institutional Ownership	-0.013	-0.051	0.005			
	(-1.47)	(-1.64)	(0.51)			
IO Less Trustee's Shares				-1.047	-4.612*	0.267
				(-1.25)	(-1.73)	(0.28)
Acquiring Firm Characteristics						
Firm Size	-0.289**	-0.110	-0.406***	-0.276**	-0.207	-0.248**
	(-2.35)	(-0.27)	(-3.40)	(-2.24)	(-0.60)	(-2.32)
Market to Book	-0.043	-0.048	-0.098**	-0.044	0.319	0.009
	(-0.76)	(-0.19)	(-1.97)	(-0.81)	(1.45)	(0.16)
Cash Flow	-0.297	-3.904	1.630	0.578	-4.403	-2.403
	(-0.13)	(-0.48)	(0.75)	(0.25)	(-0.84)	(-0.80)
Leverage	-0.464	1.982	-0.870	-0.032	2.766	-0.412
	(-0.48)	(0.67)	(-0.86)	(-0.03)	(1.06)	(-0.39)
Deal Characteristics						
Relative Deal Size	-0.190	-4.739***	1.679**	-1.080*	-3.129***	-0.253
	(-0.31)	(-5.26)	(2.00)	(-1.77)	(-3.41)	(-0.87)

Public Target	-1.613**			-1.537**		
	(-2.14)			(-2.15)		
Cash Deal	0.280	0.712	0.188	0.335	0.725	0.372
	(0.69)	(0.99)	(0.38)	(0.86)	(0.96)	(0.72)
Stock Deal	-2.214**	-0.147	-1.765*	-1.534**	-3.606*	-2.177**
	(-2.55)	(-0.08)	(-1.96)	(-2.00)	(-1.78)	(-2.26)
Diversifying M&A	-0.317	-1.123	-0.259	-0.548**	-0.959	-0.388
	(-1.19)	(-1.54)	(-0.96)	(-2.03)	(-1.34)	(-1.39)
Target Termination Fee	0.500	-0.661	3.725**	0.969	-0.679	3.317**
	(0.72)	(-0.84)	(2.08)	(1.35)	(-0.86)	(1.99)
Acquirer Termination Fee	-1.976**	0.444	-1.679	-1.157	-0.983	-0.281
	(-2.03)	(0.40)	(-0.90)	(-1.27)	(-0.87)	(-0.15)
Lockup	-0.685	-0.793	0.000	-1.500	0.065	0.000
	(-0.61)	(-0.46)	(0.00)	(-1.47)	(0.04)	(0.00)
Toehold	0.818	-1.648	0.965	0.844	-1.697	1.145
	(1.00)	(-0.66)	(1.16)	(1.02)	(-0.79)	(1.34)
Tender Offer	0.116	-0.295	2.286***	-0.163	-0.597	2.710***
	(0.18)	(-0.42)	(3.30)	(-0.26)	(-0.84)	(3.83)
Hostile Deal	0.332	0.996	0.000	-0.019	0.664	0.000
	(0.11)	(0.27)	(0.00)	(-0.01)	(0.20)	(0.00)
Merger of Equals	-6.811***	-6.110	0.000	-6.582***	-10.767***	-8.962***
	(-2.86)	(-1.55)	(0.00)	(-3.40)	(-3.10)	(-3.71)
Competed Deal	0.736	1.575	0.559	0.832	1.737	0.711
	(0.50)	(0.90)	(0.12)	(0.57)	(1.08)	(0.15)
Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Adjusted R^2	0.070	0.166	0.053	0.063	0.167	0.034
Observations	1,610	304	1,298	1,606	306	1,298

Table **1-9**: Mutual Fund Trustees and Merger Withdrawals

This table presents marginal effects from logistic regressions on how a firm's retirement asset trustee impacts its likelihood of withdrawing a merger. The sample includes deals for both public and private targets announced by U.S. acquirers between 1999-2013, excluding buybacks, recapitalizations, exchange offers, divestitures, repurchases, and self-tenders. I additionally omit acquisitions announced by financial and utility firms (SIC codes 6000-6999 and 4000-4999 respectively). The dependent variable in all specifications is a binary outcome variable indicating whether an announced deal was ultimately withdrawn (1) or completed (0). My explanatory variable of interest, *Connected MF Indicator*, indicates that the acquiring firm had a mutual fund family serving as trustee of the firm's 401(K) retirement assets during the quarter the deal was announced. All other variables are defined in Appendix A. Column 1 presents results when all targets are considered, Columns 2 and 3 repeat the analysis from Column 1, but partition the sample into public and private targets, respectively. Industry and year fixed effects are included in all models, standard errors are clustered at the firm level, and T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	Dependent Variable = Withdrawn Deal [0,1]		
	All Targets	Public Targets	Private Targets
Connected MF Indicator	-0.002	0.023	-0.019*
	(-0.17)	(0.94)	(-1.69)
3 Day CAR	-0.000	0.000	-0.001
	(-0.45)	(0.30)	(-0.79)
Connection * 3 Day CAR	0.001	-0.003	0.003*
	(0.59)	(-0.84)	(1.88)
Acquiring Firm Governance			
% Institutional Ownership	-0.000	0.001**	-0.000*
	(-0.40)	(2.07)	(-1.95)
Entrenchment Index	-0.006	-0.027**	-0.001
	(-1.43)	(-2.40)	(-0.15)
Acquiring Firm Characteristics			
Firm Size	-0.001	-0.009	0.005
	(-0.19)	(-1.17)	(1.36)
Market to Book	-0.002	-0.026**	0.000
	(-0.67)	(-2.38)	(0.02)
Cash Flow	-0.070	0.011	-0.079
	(-1.60)	(0.11)	(-1.61)
Leverage	-0.006	-0.049	-0.020
	(-0.23)	(-0.60)	(-0.64)
Deal Characteristics			
Relative Deal Size	0.019*	0.043**	0.014
	(1.67)	(2.10)	(0.66)
Public Target	0.101***		
	(7.72)		
Cash Deal	0.020*	0.007	0.044**
	(1.75)	(0.29)	(2.19)
Stock Deal	0.053**	0.070**	0.054
	(2.56)	(2.16)	(1.34)

Diversifying M&A	-0.001	0.010	-0.003
	(-0.13)	(0.49)	(-0.29)
Target Termination Fee	-0.097***	-0.159***	0.030
	(-6.11)	(-8.35)	(1.19)
Acquirer Termination Fee	0.002	-0.002	-0.013
	(0.09)	(-0.06)	(-0.30)
Lockup	-0.044	-0.028	0.000
	(-1.00)	(-0.41)	(0.00)
Toehold	0.000	0.000	0.000
	(0.00)	(0.00)	(0.00)
Tender Offer	-0.070***	-0.089***	0.000
	(-3.20)	(-3.30)	(0.00)
Hostile Deal	0.115***	0.146***	0.000
	(3.53)	(3.64)	(0.00)
Merger of Equals	-0.021	0.009	0.000
	(-0.50)	(0.12)	(0.00)
Competed Deal	0.133***	0.201***	0.098***
	(6.47)	(7.47)	(2.69)
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Pseudo R^2	0.167	0.448	0.112
Observations	3196	720	2258

Table **1-10**: Number of M&A Deals and 401(K) Connections

This table tests the impact of the 401(K) management relationship on the number of acquisitions a sponsor firm initiates and the public status of the targets it selects. The base sample is the set of firms with available CRSP and Compustat data. The dependent variable in all columns is the total number of acquisitions a firm announced in a given year. My explanatory variable of interest, *Connected MF Indicator*, indicates that the acquiring firm had a mutual fund family serving as trustee of the firm's 401(K) retirement assets during the quarter the deal was announced. All other variables are defined in Appendix A. Column 1 presents the results for the total number of firms targeted. Column 2 presents the results for the total number of publicly traded firms targeted. Column 3 presents results for the total number of privately owned firms targeted. Standard errors are clustered at the deal level. T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	Dependent Variable = Number of Deals Announced		
	Total Deals	Public Targets	Private Targets
Connected MF Indicator	0.042**	-0.000	0.043***
	(2.30)	(-0.07)	(2.68)
Firm Size	0.050***	0.019***	0.031***
	(12.65)	(14.93)	(9.24)
Market to Book	0.004**	0.000	0.004**
	(2.36)	(0.89)	(2.37)
Cash Flow	-0.001	-0.013***	0.013
	(-0.08)	(-3.08)	(1.36)
Leverage	-0.149***	-0.051***	-0.097***
	(-8.99)	(-8.75)	(-7.00)
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Adjusted R^2	0.060	0.038	0.041
Observations	62,071	62,071	62,071

Table **1-11**: Diversifying Mergers and 401(K) Connections

This table tests the impact of the 401(K) management relationship on the number of diversifying acquisitions a sponsor firm initiates and whether this result holds across both public and private targets. The base sample is the set of firms with available CRSP and Compustat data. The dependent variable in all columns is the total number of diversifying acquisitions a firm announced in a given year. My explanatory variable of interest, *Connected MF Indicator*, indicates that the acquiring firm had a mutual fund family serving as trustee of the firm's 401(K) retirement assets during the quarter the deal was announced. All other variables are defined in Appendix A. Column 1 presents the results for the total number of firms targeted. Column 2 presents the results for the total number of publicly traded firms targeted. Column 3 presents results for the total number of privately owned firms targeted. Standard errors are clustered at the deal level. T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	Dependent Variable = Diversifying Mergers Announced		
	Total Diversifying	Public Diversifying	Private Diversifying
Connected MF Indicator	0.036***	0.008*	0.028***
	(2.90)	(1.68)	(2.69)
Firm Size	0.026***	0.010***	0.016***
	(6.73)	(9.34)	(4.93)
Market to Book	0.002	0.000	0.002*
	(1.63)	(0.07)	(1.73)
Cash Flow	-0.006	-0.010***	0.004
	(-0.86)	(-4.18)	(0.71)
Leverage	-0.085***	-0.028***	-0.057***
	(-6.70)	(-7.13)	(-5.36)
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Adjusted R^2	0.034	0.022	0.024
Observations	62,071	62,071	62,071

Table **1-12**: Probability of Incurring Large Losses

This table presents marginal effects from logistic regressions on the effect mutual fund trustees have on a firm's likelihood of incurring a large loss. The sample includes deals for both public and private targets announced by U.S. acquirers between 1999-2013, excluding buybacks, recapitalizations, exchange offers, divestitures, repurchases, and self-tenders. I additionally omit acquisitions announced by financial and utility firms (SIC codes 6000-6999 and 4000-4999 respectively). The dependent variable in all specifications is a binary outcome variable indicating whether a firm experienced a large loss surrounding announcement, where a large loss is defined as a decline in market capitalization of at least $500 million in 2013 dollars, similar to Field and Mkrtchyan (2017). My explanatory variable of interest, *Connected MF Indicator*, indicates that the acquiring firm had a mutual fund family serving as trustee of the firm's 401(K) retirement assets during the quarter the deal was announced. All other variables are defined in Appendix A. Column 1 presents results when all targets are considered, Columns 2 and 3 repeat the analysis from Column 1, but partition the sample into public and private targets, respectively. Industry and year fixed effects are included in all models, standard errors are clustered at the firm level, and T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	Dependent Variable = Large Loss [0,1]		
	All Targets	Public Targets	Private Targets
Connected MF Indicator	0.002	0.020	-0.007
	(0.15)	(0.66)	(-0.60)
Acquiring Firm Governance			
% Institutional Ownership	0.001**	0.001	0.001**
	(2.39)	(0.77)	(2.14)
Entrenchment Index	0.001	0.010	0.000
	(0.13)	(0.71)	(0.05)
Acquiring Firm Characteristics			
Firm Size	0.065***	0.089***	0.061***
	(12.80)	(7.80)	(10.57)
Market to Book	0.003**	0.003	0.003*
	(2.22)	(0.65)	(1.93)
Cash Flow	-0.073	-0.072	-0.085
	(-0.88)	(-0.26)	(-0.96)
Leverage	-0.268***	-0.416***	-0.233***
	(-6.69)	(-3.78)	(-5.23)
Stock Price Run-Up	0.034***	0.057*	0.026*
	(2.66)	(1.68)	(1.91)
Deal Characteristics			
Relative Deal Size	0.061***	0.090***	0.005
	(4.55)	(3.14)	(0.11)
Public Target	0.022		
	(1.02)		
Cash Deal	-0.026**	-0.048	-0.025
	(-2.01)	(-1.52)	(-1.53)
Stock Deal	-0.016	0.040	-0.033
	(-0.65)	(0.75)	(-1.25)
Diversifying M&A	0.009	-0.009	0.017
	(0.76)	(-0.31)	(1.34)

Target Termination Fee	-0.009	0.009	0.000
	(-0.52)	(0.26)	(0.00)
Acquirer Termination Fee	0.011	0.011	0.097***
	(0.53)	(0.30)	(2.77)
Lockup	-0.027	-0.022	0.000
	(-0.84)	(-0.36)	(0.00)
Toehold	-0.007	0.014	-0.007
	(-0.31)	(0.16)	(-0.35)
Tender Offer	0.002	0.024	0.000
	(0.12)	(0.92)	(0.00)
Hostile Deal	0.007	0.030	0.000
	(0.12)	(0.35)	(0.00)
Merger of Equals	-0.045	-0.072	0.000
	(-0.70)	(-0.59)	(0.00)
Competed Deal	0.020	0.046	0.043
	(0.63)	(0.74)	(0.81)
Year FE	Y	Y	Y
Industry FE	Y	Y	Y
Pseudo R^2	0.288	0.248	0.284
Observations	3,059	710	2,171

Table **1-13**: Payment Methods and 401(K) Connections

This table presents results on a firm's likelihood of initiating an M&A transaction using various payment methods, and the likelihood of a particular payment method for both public and private targets. The base sample is the set of firms with available CRSP and Compustat data. The dependent variable in all columns is the total number of acquisitions financed through either all stock or all cash that a firm announced in a given year. My explanatory variable of interest, *Connected MF Indicator*, indicates that the acquiring firm had a mutual fund family serving as trustee of the firm's 401(K) retirement assets during the quarter the deal was announced. All other variables are defined in Appendix A. Columns 1 and 2 present the number of deals announced that were all-cash or all-stock deals respectively. Columns 3 and 4 examine the likelihood that a firm initiated a deal for a public target using all-cash or all-stock as a payment method. Columns 5 and 6 examine the likelihood that a firm initiated a deal for a private target using all-cash or all-stock as a payment method. Standard errors are clustered at the deal level. T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	Dependent Variable = Number of Mergers Announced					
	Cash Deals	Stock Deals	Public Cash	Public Stock	Private Cash	Private Stock
Connected MF Indicator	0.060***	-0.007*	0.006	-0.003*	0.054***	-0.004
	(3.88)	(-1.80)	(1.46)	(-1.94)	(3.93)	(-1.18)
Firm Size	0.038***	0.006***	0.008***	0.003***	0.030***	0.003*
	(15.25)	(3.42)	(9.44)	(6.39)	(14.13)	(1.95)
Market to Book	-0.002***	0.006***	-0.000	0.001**	-0.002***	0.005***
	(-3.93)	(4.19)	(-1.12)	(2.15)	(-3.88)	(4.13)
Cash Flow	-0.007	0.001	-0.003**	-0.004	-0.003	0.004
	(-1.15)	(0.11)	(-2.04)	(-1.30)	(-0.53)	(0.86)
Leverage	-0.078***	-0.021***	-0.017***	-0.011***	-0.060***	-0.010**
	(-6.48)	(-3.72)	(-5.40)	(-3.99)	(-5.69)	(-2.13)
Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Adjusted R^2	0.064	0.027	0.020	0.010	0.054	0.023
Observations	62,071	62,071	62,071	62,071	62,071	62,071

Table **1-14**: Target Premiums

This table presents results on the impact of mutual fund companies serving as trustee to a firm's retirement assets on target premiums for public targets, similar to Fich, Harford, and Tran (2015). Panel A presents the marginal effects from a first stage logit regression assessing the probability of being acquired in a given fiscal year. The sample consists of all Compustat firms with available data between 1999-2013. Panel B presents the results of an OLS regression where the dependent variable is the offer premium, as calculated by the increase in share price over the period from 4 weeks prior to the day of announcement. The sample includes public targets announced by U.S. acquirers between 1999-2013, but excludes buybacks, recapitalizations, exchange offers, divestitures, repurchases, and self-tenders. I additionally omit acquisitions announced by financial and utility firms (SIC codes 6000-6999 and 4000-4999 respectively). The dependent variables of interest, *Target Conection* and *Acquirer Connection*, are indicator variables signifying if the target or acquirer (respectively) had a mutual fund serving as trustee of its 401(k) assets at the time the deal was announced. The inverse Mill's ratio from the first stage is included as a control in the second stage to control for self-selecting into becoming a target. Unlike previous specifications, *% Institutional Ownership* has been rescaled as a number instead of a percent. All other variables are defined in Appendix A. Industry and year fixed effects are included in all models, standard errors are clustered at the firm level, and T-statistics are reported in parentheses. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

Panel A: Probability of Becoming a Target	
	Dependent Variable = Target [0,1]
	All Publicly Traded Firms
Connected MF Indicator	-0.008
	(-1.62)
Firm Governance	
% Institutional Ownership	0.030***
	(5.43)
Firm Characteristics	
Firm Size	-0.008***
	(-7.98)
Market to Book	-0.008***
	(-6.60)
Cash Flow	0.003
	(0.55)
Leverage	0.036***
	(5.42)
Prior Year Market Adjusted Return	0.001
	(1.36)
Target Herfindahl-Hirschman Index	-0.042
	(-0.58)
Target Industry Liquidity Index	0.029**
	(2.06)
One Year Macroeconomic Change	0.005***
	(4.96)
Year FE	Y
Industry FE	Y
Pseudo R^2	0.047
Observations	37,619

Panel B: Connections and Acquisition Premiums

	Dependent Variable = 4 Week Premium
	All Publicly Traded Firms
Target Connection	-0.284**
	(-1.99)
Acquirer Connection	-0.038
	(-0.57)
Acquiring Firm Governance	
% Institutional Ownership	0.001
	(0.00)
Target Firm Characteristics	
Firm Size	-0.102**
	(-2.20)
Market to Book	0.002
	(0.08)
Cash Flow	0.146
	(0.81)
Leverage	0.928***
	(3.05)
Prior Year Market Adjusted Return	-0.119*
	(-1.94)
Acquiring Firm Characteristics	
Market to Book	0.029
	(1.62)
Cash Flow	0.480
	(1.31)
Leverage	0.094
	(0.25)
Prior Year Market Adjusted Return	0.117***
	(2.73)
Deal Characteristics	
Relative Deal Size	0.052
	(1.57)
Cash Deal	-0.037
	(-0.45)
Stock Deal	0.037
	(0.32)
Diversifying M&A	0.011
	(0.15)
Target Termination Fee	-0.002
	(-0.01)
Acquirer Termination Fee	0.002
	(0.03)
Lockup	0.075
	(0.23)

Toehold	-0.196
	(-0.74)
Tender Offer	0.298***
	(3.19)
Hostile Deal	-0.122
	(-0.70)
Merger of Equals	-0.267*
	(-1.95)
Competed Deal	0.254
	(1.49)
Macroeconomic Characteristics	
Target Herfindahl-Hirschman Index	0.412
	(0.66)
Target Industry Liquidity Index	-0.463
	(-1.36)
One Year Macroeconomic Change	-0.029**
	(-2.07)
Heckman Self-Selectivity Correction	Y
Year FE	Y
Industry FE	Y
Adjusted R^2	0.241
Observations	610

Chapter 2

Firing Frictions and the U.S. Mergers and Acquisitions Market

1. Introduction

Increased operating efficiencies are an important channel through which mergers and acquisitions (M&As) add value (Houston, James, and Ryngaert, 2001; Devos, Kada, and Krishnamurthy, 2008). Two mechanisms through which M&As can improve operating efficiency are that they represent a low-cost way for firms to respond to economic shocks (Mitchell and Mulherin, 1996; Andrade, Mitchell, and Stafford, 2001) and they allow firms to eliminate redundant or non-productive assets, such as excess employees (Davis, Haltiwanger, Handley, Jarmin, Lerner, and Miranda, 2014; Dessaint, Golubov, and Volpin, 2016). The broad array of factors underlying the M&A decision makes it difficult to predict how various economic factors may influence M&A activity. For instance, the two aforementioned ways that M&As can improve operating efficiency motivate competing predictions regarding the effect of firing costs on M&A activity. On the one hand, increasing firing frictions may result in less M&A activity if post-merger employee turnover is a first-order source of M&A value. On the other hand, if firing frictions represent a shock to optimal firm or industry structure, then increasing firing frictions may result in more M&A activity. Which of these effects dominates, whether these effects are permanent or temporary, and what type of mergers are most affected, depends on both the level of firing frictions and the efficiency of the M&A market.

In this paper we examine how firing frictions affect M&A activity in the U.S., which has an abnormally active M&A market and lower firing frictions compared to other nations. For identification, we exploit intertemporal and interstate variation in the introduction of wrongful discharge laws (WDLs), which are exceptions to the at-will status of employees. WDLs increase firing costs because they increase the incidence and success rate of wrongful termination lawsuits. Kelly (1997) documents that there are over ten thousand wrongful termination lawsuits each year. Jung (1997) shows that approximately half of these

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lawsuits are successful, with average payouts of $1.29 million. Moreover, managers implicated by wrongful discharge complaints see a reduction in future promotions and higher employee turnover going forward (Lewin, 1987).

We focus on the good faith (GF) exception, which Dertouzos and Karoly (1992), Kugler and Saint-Paul (2004), and Serfling (2015) argue is the most far reaching WDL. The GF exception deems firing wrongful if it prevents an employee from reaping the benefits of their labor. For example, under the GF exception employers can be sued for firing an employee nearing pension benefit eligibility. Importantly, the GF exception applies even when a layoff is economically justified because precedent allows each individual who is laid off to sue if they believe they were wrongfully terminated.[20] Over the course of our sample, ten states add and two states repeal a GF exception. Since changes in GF status are judicial decisions and are unrelated to economic conditions, including preexisting M&A activity, this setting lends itself to a difference-in-differences analysis.

In our first set of tests, we employ a static model, where the dependent variable equals a measure of state-level M&A activity and the explanatory variable of interest is an indicator for a state-year with a GF exception in place. After controlling for state and year fixed effects as well as state-year measures of economic conditions, the GF indicator captures the effect of the GF exception on M&A activity. Consistent with firing frictions meaningfully impacting the M&A market, we find that GF exceptions are associated with a 23% decrease in the percentage of firms acquired. GF exceptions are associated with an even larger 33% decrease in M&A dollar volume scaled by state GDP.

To better establish a causal link between GF adoption and reduced M&A activity, we employ a dynamic specification, which includes separate indicators for the year of, years following, and years prior to GF adoption. We find that the GF exception is associated with an immediate reduction in M&A activity. In the years prior to GF adoption, the percentage of firms that are M&A targets and the dollar volume of

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[20] See for example *Coelho v. Posi-Seal International, Inc.*, 208 Conn. 106, 544 A.2d 504 (1989) and *Ewers v. Stroh Brewery Company*, 178 Mich. App. 371, 443 N.W.2d 504 (1989).

M&As are statistically similar to other state-years without a GF exception in place. In contrast, there are fewer targets and less M&A dollar volume in state-years with contemporaneous and one year ago passages of GF exceptions. To further ensure that this relation between GF adoption and M&A activity is not spurious, we investigate the effect of GF adoptions on the completion rate of mergers. If GF adoption is a partial surprise, as event study evidence in Serfling (2015) suggests, and the GF exception makes M&A activity less desirable, then we expect a significant increase in M&A withdrawals during the years immediately following a GF adoption. We find evidence of this as there is a significant increase in the percentage of withdrawn mergers in the year of and the year following a GF exception's adoption – mergers targeting a firm in a state during the year of and year after a GF adoption are approximately 6 percentage points or 40% less likely to be completed. In contrast, there is no significant change in the percentage of M&As that are completed in the years leading up to a WDL adoption compared to state-years without a GF exception.

The results thus far suggest that firing frictions result in an immediate decrease in M&A activity. This is consistent with post-merger employee turnover being a first order source of value for the average U.S. merger. In our next set of tests, we examine whether this reduction in M&A activity is persistent and whether the magnitude of the effect varies by M&A type. This analysis is important because it provides insight into why different types of firms access the M&A market. If the increased adjustment costs embedded in firing frictions cause firms to slowly drift away from their optimal structure, then firing frictions may lead to increased M&A activity over time. This effect may be especially pronounced for small firms as they are less able to reallocate resources within the firm (Maksimovic and Phillips, 2002; Papageorgiou, 2015).

We empirically test whether the effect of GF provisions on M&A activity is permanent by augmenting our difference-in-differences specification with an interaction between GF adoption and the number of years since GF adoption. We find that the negative relation between the GF provision and M&A activity attenuates over time. In the year of GF passage, we estimate that the number of M&As declines by

approximately 26%. However, this reduction is short-lived with the number of mergers returning to pre-GF levels within approximately 6 years. In contrast, we do not find that the initial 33% decline in M&A dollar volume significantly attenuates over time. This attenuation in the effect of GF on merger counts, but not on M&A proceeds, results in an immediate 30% decline in average M&A size and a smaller long-run effect whereby average M&A size continues to decline. These findings are consistent with the effect of firing frictions on M&A activity being more positive for small firms in the long-run as they turn to the M&A market to reorganize.

To more formally investigate how the effect of firing frictions on M&A activity varies by target size, we partition our M&A count measure into four bins based on target size. We find that increased firing frictions are followed by an initial decline in large mergers, but no significant change in the number of small mergers. The number of mergers over $100 million and between $5 and $100 million decline by 48% and 29%, respectively. Both of these declines fully reverse between 5 and 10 years after GF adoption. Although there is no initial reduction in the number of mergers involving targets below $5 million (or those with unreported deal values), the number of mergers involving small targets still increases by approximately 2.2% per year in the years following GF adoption. We also find that the effect of firing frictions on M&A activity differs depending on the labor intensity of the target. Labor intensive M&A activity initially declines following GF passage, but M&A activity involving non-labor intensive targets does not. Nevertheless, both labor intensive and non-labor intensive M&As become increasingly frequent in the years following GF passage. Thus, the predominant effect of firing frictions on small and non-labor intensive M&As is positive.

Consistent with this result being driven by small firms turning to the M&A market to reorganize into larger entities, we find that in the long-run firing frictions are followed by fewer small firms in the economy. However, fully establishing the mechanism behind the long-run effects of firing frictions is challenging because firing frictions may affect other aspects of the economic landscape, raising the

possibility of indirect feedback effects.[21] Because many of these possible effects of increased firing frictions manifest over a longer period, we view such indirect effects as unlikely explanations for our finding that there is an immediate decrease in the volume of large (or labor intensive) M&As, but no such decrease in small (or non-labor intensive) M&As.

Our findings relate to several strands of literature. We show that the cross-country evidence in Dessaint, Golubov, and Volpin (2016) suggesting a negative relation between firing frictions and M&A activity does not extend to all types of U.S. mergers. Our findings suggest that only large U.S. mergers generate a substantial fraction of their value from post-merger employee turnover. This extends the mixed literature on the value of post-merger restructuring following U.S. M&As, which typically relies on small samples or focuses on specific types of takeover activity.[22] The fact that post-merger employee turnover is not a significant source of value for some mergers is consistent with the intuition in Gugler and Yurtoglu (2004) who argue that the low firing frictions in the U.S. reduce the value of post-merger employee turnover. An interesting question for future research is whether the long-run positive effect of firing frictions on small M&As that we document also exists internationally or whether it is unique to the U.S., perhaps because of its abnormally active M&A market. Our findings also differ from Dessaint, Golubov, and Volpin (2016)'s international evidence, which suggest that firing frictions reduce M&A announcement returns. We find no evidence that firing frictions affect returns surrounding U.S. M&As. Rather, the U.S. market appears to incorporate the reduced value of M&A targets earlier as future M&A targets experience negative abnormal returns surrounding the adoption of GF exceptions.

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[21] For example, existing evidence suggests that increased firing frictions cause firms to transition away from full-time employees in favor of capital investments (Autor, Kerr, and Kugler, 2007) and temporary employees (Autor, 2003), leading to increased unemployment (Dertouzos and Karoly, 1992; Autor, Donohue, and Schwab, 2006). Firms also reduce leverage (Serfling, 2015), become less profitable (Bird and Knopf, 2009), and increase innovation (Acharya, Baghai, and Subramanian, 2013).

[22] See Bhagat, Shleifer, and Vishny (1990), Davis, Haltiwanger, Handley, Jarmin, Lerner, and Miranda (2014), Kaplan (1989), Li (2013), Muscarella and Vetsuypens (1990), Ouimet and Zarutskie (2015), Rossett (1990).

We also contribute to the literature investigating the effect of labor force characteristics on the corporate outcomes of U.S. firms. For example, labor market characteristics have been shown to be important determinants of leverage (Agrawal and Matsa, 2013; Matsa, 2010) and the cost of capital (Chen, Kacperczyk, and Ortiz-Molina, 2011, 2012). Two of the most related papers in this literature are John, Knyazeva, and Knyazeva (2015) and Tian and Wang (2015) who provide evidence that shareholder-employee conflicts adversely affect M&A returns. We document two new dimensions through which labor market frictions impact the U.S. M&A market. At times, firing frictions reduce the value of M&As, consistent with post-merger employee turnover being a first order source of value for U.S. M&As. In other cases, firing frictions represent an economic shock that incentivizes small firms to organize into larger entities, consistent with the U.S. M&A market being an important way that firms respond to economic shocks.

2. Firing Costs and the U.S. M&A Market

Rossi and Volpin (2004) document that the U.S. houses the most active M&A market in the world, both on an absolute and size-adjusted basis. There are many economic benefits to such an active market for corporate assets. Jensen (1988), Mitchell and Lehn (1990), and Kini, Kracaw, and Mian (2004) argue and provide evidence that a well-functioning M&A market disciplines managers, while Mitchell and Mulherin (1996) and Andrade, Mitchell, and Stafford (2001) find that firms often turn to M&As as the lower cost way of responding to economic shocks.

One aspect of the U.S. economy that is consistently linked to M&A activity is the labor market. Anecdotes, such as the proposed 10% employment reductions following the Dupont-Dow Chemical and Kraft-Heinz mergers, suggest that post-merger employee turnover is an important source of M&A value. If post-merger employee turnover is indeed a first order source of M&A value, this will generate a negative relation between firing frictions and M&A activity. Despite the intuitive appeal of post-merger employee

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turnover as a source of M&A value, empirical evidence on the topic is mixed, often relying on small samples of specific types of takeovers. For example, Bhagat, Shleifer, and Vishny (1990) empirically investigate 62 hostile takeovers in the 1980s and find that a significant, but not dominant, source of value is derived from the ability to reorganize the labor force, while Muscarella and Vetsuypens (1990) find little evidence of employee turnover using a sample of 72 leveraged buyouts. In a related approach, Rosett (1990) finds little evidence that wage concessions are an important source of M&A value in a sample of 252 mergers amongst companies with available union employment contracts. This mixed empirical evidence is further complicated by the fact that firms engaging in M&A activity are a selected sample. It is possible that certain aspects of firm performance correlate with both the probability of being acquired and expected future changes in employment. Thus, one cannot assume that adjustments to post-merger employment are caused directly by the merger itself. Davis, Haltiwanger, Handley, Jarmin, Lerner, and Miranda (2014) take an important step toward addressing this concern by using a matched sample to show that private equity buyouts create value by replacing poorly performing plants with new, more productive ones.

Not only does this mixed literature not cleanly identify the extent to which post-merger employee turnover is an important source of value for the average U.S. merger, it also does not incorporate other channels through which firing frictions may affect U.S. M&A activity. For example, Mitchell and Mulherin (1996) and Andrade, Mitchell, and Stafford (2001) argue that the M&A market provides a relatively low-cost way for firms to respond to economic shocks. If firing frictions lead to a long-run increase in optimal firm size, perhaps because large firms can more easily reallocate labor internally (Maksimovic and Phillips, 2002; and Papageorgiou, 2015), then increased firing frictions may lead to more M&A activity as firms combine into larger entities. This increase is unlikely to occur immediately. Rather, it will occur over time as firing frictions prevent firms from maintaining their optimal labor structure.

Importantly, both the low firing frictions and the efficiency of the M&A market in the U.S. make the expected relation between firing frictions and M&A activity more positive compared to other countries around the world. Low firing frictions allow firms to maintain optimal labor allocation, reducing the

benefits to post-merger turnover, while an efficient M&A market provides an effective way for small firms to combine into larger entities in the presence of reduced labor market flexibility. These differences make it hard to interpolate international evidence, such as Dessaint, Golubov, and Volpin (2016)'s finding that firing frictions result in less M&A activity and more negative returns surrounding M&A announcements, to the U.S. Indeed, Gugler and Yurtoglu (2004) argue and provide evidence that the low firing frictions in the United States reduce the value of post-merger employee turnover as there is a significant post-merger reduction in employment levels following European mergers, but not following U.S. mergers. In this paper, we address the unanswered empirical question of how firing frictions affect U.S. M&A activity.

3. Wrongful Discharge Laws: State-Level Variation in Firing Frictions

To identify the effect of firing frictions on U.S. M&A activity it is necessary to have variation in firing frictions that is otherwise unrelated to the M&A market. Such variation is rare because changes in U.S. firing frictions are uncommon and are often correlated with other aspects of the economy, which may influence M&A activity. For example, the WARN Act, which is commonly used as a legislative shock to U.S. firing frictions in cross-country studies (Simintzi, Vig, and Volpin, 2014; Dessaint, Golubov, and Volpin, 2016), was adopted in 1989 and affects all U.S. private employers with over 100 employees. Identifying the effect of firing frictions on U.S. M&A activity off of such a broad based change is challenging because one cannot attribute post-1989 changes in U.S. M&A activity directly to the WARN Act (i.e., they could be due to other changes in the economic environment).[23] In this paper, we exploit changes in state-level firing frictions to identify the effect on M&A activity. A distinct advantage of this approach is that different states experience changes in firing frictions at different times. Thus, our analysis

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[23] Cross-country analyses can better use this variation because they have other countries to control for broad changes in the economic environment. However, such analyses cannot identify effects that are specific to the United States.

benefits from a natural control group of firms that experience no change in firing frictions, but are subject to arguably the same economic landscape.

Historically, firing frictions in the U.S. have been relatively constant over time. Throughout the first half of the 20th Century, all U.S. states strictly adhered to the doctrine of at-will employment.[24] This concept allows for either the employer or employee to terminate the contract at any point in time for any reason.

However, over the past several decades changes to a number of socio-economic factors, including the decline in the number of employees covered by the protections of a collective bargaining agreement and an increase in the power of employers in the employment relationship, have led courts to revisit the notion of at-will employment.[25] During a series of landmark cases, the courts established three types of exceptions to at-will employment that were designed to protect employees from unfair discharge. These three exceptions are the Public Policy (PP) exception, the Implied Contract (IC) exception, and the Covenant of Good Faith and Fair Dealing (GF). Collectively these exceptions are known as Wrongful Discharge Laws (WDLs).

Dertouzos and Karoly (1992), Kugler and Saint-Paul (2004), and Serfling (2015) all argue that the GF exception, which deems firing wrongful if the firing prevents an employee from reaping the benefits of their labor, is the most far reaching of the three exceptions. In its narrowest interpretation, this exception prevents employers from releasing employees for *bad* cause, such as firing a worker just prior to retirement to avoid paying pension benefits or just prior to the closing of a sale to deny an employee commissions. In its broadest interpretation, the GF exception requires employers to have "just cause" before terminating employees. Though no exact legal definition of "just cause" exists, a checklist of seven items was

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[24] The doctrine was based on ideas from a legal treatise called *Master and Servant* by Horace C. Wood, and redefined the typical relationship between employer and employee from 1 year contracts to an on-going term at-will.

[25] See Dertouzos and Karoly (1992) and Muhl (2001) for a more in-depth discussion of cited adoption reasons.

established in *Enterprise Wire Co.* (46 LA 359, 1966) to assess if the employer had "just cause."[26] Examples of "just cause" for termination include excessive absence, insubordination, or illegal acts by the employee.[27]

Though states vary in their interpretation, the presence of the GF exception represents a potential increase to firing costs for firms operating within the state. In a direct sense, this exception increases the likelihood of litigation against firms following the discharge of an employee, exposing the firm to legal fees, settlement costs, and time lost while fighting lawsuits. Moreover, existing evidence suggests the magnitude of the increase in firing costs is economically meaningful. Using data from California, Dertouzos, Holland, and Ebener (1988) find that in 68% of cases the jury reaches a verdict in favor of the plaintiff and awards an average payout of $0.66 million. Jung (1997) examines a cross section of data from 1996 and finds a plaintiff victory in 46.5% of cases with an average award of $1.29 million. In a more recent study, Boxold (2008) finds average awards of $0.59 million and maximum awards of $5.4 million.

In the case of a merger these costs are likely to be orders of magnitude larger. Serfling (2015) notes that firms laying off large numbers of employees simultaneously may be subject to multiple cases at one time. In particular, even if there is economic justification for the layoff itself, *Coelho v. Posi-Seal International, Inc.*, 208 Conn. 106, 544 A.2d 504 (1989) and *Ewers v. Stroh Brewery Company*, 178 Mich. App. 371, 443 N.W.2d 504 (1989) set the precedent that a single individual within the mass layoff can successfully sue for wrongful termination. For example, in *Andrews, et al. v. Lawrence Livermore National Security, LLC., case No. RG09453596*, over 400 employees were laid off all at once for economic reasons and 130 sued the company under the GF exception, costing the company almost $3 million on the first five settlements alone.

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[26] The seven tests are as follows: the employer informed and gave the employee advanced notice of disciplinary consequences, the enforced rule is reasonable, the employer conducted a timely, thorough, and fair investigation of the employee's conduct, the employer has proof of guilt, the employer has applied its rules and discipline evenly to all employees, and the penalty is fair given the offense.

[27] See Appendix A for a detailed description of the PP and IC exceptions.

3.1 Frequency and Determinants of Wrongful Discharge Law Adoption

The adoption of WDLs is based on decisions made by the state's judicial system, rather than its legislature, meaning that the affirmation of a WDL is based on an interpretation of the state court's ruling. As such, there are small discrepancies in how existing literature defines WDL adoption. We follow the methodology of Autor, Donohue, and Schwab (2006) to identify the precedent-setting court case for recognition of a particular WDL.[28] We use indicator variables to signal a state as recognizing a WDL beginning in the year when a state appellate or state supreme court upholds the decision of a lower state court to affirm the exception.

Table 2-1 provides descriptive statistics on WDL adoption in 5 year intervals over our sample period. Since 1959, when California recognized the first public policy exception, 47 states have adopted at least one WDL – Florida, Georgia, and Rhode Island are the only three that have not. The PP and IC exceptions are most common, with 43 and 41 states having adopted by the end of our sample period, respectively. The GF exception is less frequent, with only 12 states having GF exceptions at the end of our sample period. In addition, GF exceptions were repealed twice during our sample period. Notably, GF adoptions are almost uniformly distributed across our sample period, with three adoptions in the first five years, four adoptions over the following decade, and one adoption in the last five years.

Other labor laws, which we control for in our empirical tests, do not change as smoothly over the course of our sample period. Right-to-Work (RTW) laws, which prevent labor unions from entering into contractual agreements with employers that require union membership as a condition of employment (known as union security agreements), are virtually constant throughout our sample period. Thus, although RTW laws may proxy for labor rights [John, Knyaseva, and Knyaseva (2014), and Matsa (2010)], they are unlikely to significantly impact M&A activity beyond our state fixed effect controls. Business Combination

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[28] We follow Serfling (2015), Walsh and Schwarz (1996), and Littler (2009) in acknowledging Utah as having the good faith exception beginning in 1989.

(BC) laws may be significant predictors of M&A activity because they delay transactions, including mergers, between the firm and a large shareholder for 3-5 years, unless the board of directors votes otherwise [Atanassov (2013)]. During our sample, 30 states enact a BC law with these adoptions all occurring between 1985 and 1991.

Our identification relies on the assumption that the changes in WDLs represent an exogenous shock to the state's M&A market. This assumption may be violated if we do not appropriately control for factors that are correlated with both WDL adoption and state-level M&A activity. Because WDLs are common laws, meaning they are derived from judicial precedent rather than legislative measure, an important first step in assessing their exogeneity is to understand the motivation behind the court's decision to adopt. Walsh and Schwarz (1996) identify rationales given by courts from the precedent setting cases in each state, and note the commonality of three justifications for adoption: 1) the exception helps restore balance in the employee-employer relationship, 2) the exception is consistent with existing contract principles, and 3) the exception has been recognized by other state courts. These reasons provide initial evidence that judges were not adopting WDLs in an attempt to influence the market for corporate control.

However, Walsh and Schwarz also note that it would be naïve to believe these rationales represent the complete set. Though WDLs are common law decisions and are more likely based on the merits of the case, it is possible that political and economic factors also impact judges' decisions. Prior literature suggests a number of potentially influential factors; declines in the proportion of union workers in a state that benefit from the protection of collective bargaining agreements, the status of a state as Right-to-Work, the unemployment level within the state, per capita state GDP, whether a state has previously adopted an exception to at-will employment, the fraction of the State's Congressional Representative that identify as Democrats, and the decisions of neighboring states on adoption.

Using a Cox proportional hazard model, Serfling (2015) tests these factors and concludes that only the proportion of neighboring states with a WDL has any relation to adoption. Column 1 of Table 2-2 approximately replicates this analysis over our sample period, yielding similar results. In Columns 2

through 4 we add measures of lagged M&A activity to investigate whether it affects the probability that the courts adopt a GF exception. We find no statistically significant relation. This evidence, combined with stated motivations for WDL adoption, helps mitigate concerns that economic factors related to the M&A market are significant predictors of WDL adoption.

4. Data and Empirical Methods

In this section, we describe how we combine the cross-state variation in firing frictions with M&A data to identify the effect of firing frictions on U.S. M&A activity.

4.1 Sample Description and M&A Measures

We obtain data on M&A activity from Thomson One's database. Our initial sample contains all M&A deals completed in the United States between 1981 and 1999, after which there is no variation in WDLs. We limit the sample to U.S.-based targets and exclude share repurchases, privatizations, recapitalizations, and exchange offers. To make our deal value and M&A count tests comparable, we also exclude deals without reported values in SDC, except when investigating such deals directly. For our main set of analyses, we then determine the state of the M&A using the target's headquarter state and measure M&A activity on the state-year level. This state-level analysis allows for a more comprehensive view of the M&A landscape than is possible when restricting the sample to publicly traded firms.

We construct two primary state-year measures of M&A activity. Our first measure is the total number of M&A targets in a given state-year multiplied by 10,000, scaled by the number of firms with over 5 employees in the previous year, according to the Current Population Survey in the U.S. Census Bureau's Business Dynamics Statistics database. This measure, denoted *Mergers / Firms*, can be approximately interpreted as 100 times the percentage of firms with over 5 employees that are acquired in a given state-

year. Our second measure is 100 times the total M&A proceeds in a state-year divided by the state's one-year lagged GDP. This measure, *M&A Dollar Volume / GDP*, is the fraction of state GDP dedicated to M&As. We find similar results scaling M&A dollar volume by population or not scaling at all. In our regression analysis we use the natural log of one plus *M&A Dollar Volume / GDP*. We winsorize all dependent variables at the 1% and 99% levels, although our findings are similar without this adjustment.

Table 2-3 provides descriptive statistics on M&A activity throughout our sample period. Panel A shows that Mergers / Firms has an average value of 7.69, corresponding to 0.07% of firms with over 5 employees being acquired each year. Average M&A Dollar Volume / GDP is 3.59 and 14.53 percent of mergers that are announced are ultimately withdrawn. The bottom half of Panel A decomposes Mergers / Firms into bins based on target size and labor intensity. Notably, the deals with unreported values, which comprise approximately half of all deal in the SDC database, are not included in the Mergers / Firm measure. We separately investigate this subsample, with the expectation that most of these deals are small. Over half of the deals with reported target values are between $5 and $100 million, with the remaining deals being split almost evenly between deals less than $5 million and deals over $100 million. We also partition firms based on an industry-level measure of the labor intensity. We define a two-digit SIC industry-year as labor intensive if the average employee-to-asset ratio is above the median of our M&A sample.

Panel B of Table 2-3 shows how state-level M&A activity changes over time. Each statistic is the equally weighted average across all states in a given year. The main takeaway is that M&A activity has increased substantially over our sample period. The average number and dollar volume of M&As is approximately twice as large in the 1990s compared to the 1980s. Notably, the time trend in M&A frequency is equally pronounced if we include M&A deals without reported deal values.

4.2 Empirical Methods

The state-by-state variation in the adoption of WDLs allows us to investigate the impact of increased firing costs on M&A activity via a difference-in-differences analysis. We use panel data to estimate a number of different specifications.

To assess what effect, if any, the adoption of a WDL has on mergers, we begin with the following levels specifications:

$$\text{Mergers / Firms}_{st} = \alpha_1 GF_{st} + L_{st}\Upsilon + X_{st}\beta + R_{st}\theta + y_s + z_t + e_{st} \tag{1a}$$

$$\text{M\&A Dollar Volume / GDP}_{st} = \alpha_1 GF_{st} + L_{st}\Upsilon + X_{st}\beta + R_{st}\theta + y_s + z_t + e_{st} \tag{1b}$$

where Mergers / Firms$_{st}$ and M&A Dollar Volume / GDP$_{st}$ are defined as in Section 4.1. GF_{st} indicates whether state s has adopted the good faith exception to at-will employment by the end of year t. L_{st} is a vector to control for four additional laws that may impact M&A activity: implied contract and public policy exceptions to at-will employment, business combination laws, and right to work laws. To account for economic conditions, we include a vector (X_{st}) that contains controls for levels and recent changes in state unemployment, GDP, and population. We also include state (y_s) and year (z_t) fixed effects. In addition, to control for regional differences in M&A activity we interact four census region fixed effects with a linear time trend. Standard errors are double clustered at the state and year levels.

Following our levels regressions, we include the following change specification to separate the immediate and long-run effects of GF adoption:

$$\text{Mergers / Firms}_{st} = \alpha_1 GF_{t-2+} + \alpha_2 GF_{t-2, t-1} + \alpha_3 GF_{t-1, t} + \alpha_4 GF_{t, t+2} + L_{st}\Upsilon$$

$$+ X_{st}\beta + R_{st}\theta + y_s + z_t + e_{st}, \tag{2a}$$

$$\text{M\&A Dollar Volume / GDP}_{st} = \alpha_1 GF_{t-2+} + \alpha_2 GF_{t-2, t-1} + \alpha_3 GF_{t-1, t}$$

$$+ \alpha_4 GF_{t, t+2} + L_{st}\Upsilon + X_{st}\beta + R_{st}\theta + y_s + z_t + e_{st}, \tag{2b}$$

where the dependent variables are identical to the levels regressions above. The four GF variables are indicator variables to signal if a state adopted the GF exception more than two years ago, between t-2 and t-1, between t-1 and t, or will adopt within two years, respectively. Past changes allow us to assess if changes are permanent or transitory, and the leading change variable determines if these laws are anticipated by firms within a state. The remaining control variables are as defined in equation (1).

In some tests we augment Equation 1 by interacting the GF indicator with the number of years since GF adoption. We use this specification to examine the extent to which the effects of GF attenuate over time. Specifically we use the following equations:

$$\text{Mergers / Firms}_{st} = \alpha_1 GF_{st} + \alpha_2 GF_{st} * \text{Time} + L_{st}\Upsilon + X_{st}\beta + R_{st}\theta + y_s + z_t + e_{st} \qquad (3a)$$

$$\text{M\&A Dollar Volume / GDP}_{st} = \alpha_1 GF_{st} + \alpha_2 GF_{st} * \text{Time} + L_{st}\Upsilon + X_{st}\beta + R_{st}\theta + y_s + z_t + e_{st} \qquad (3b)$$

where time is either a count variable for the number of years since GF passage or the natural log of one plus the number of years since GF passage.

Finally, to ensure that our findings are driven by economically meaningful variation in M&A activity, we weight each state-year observation by its lagged level of state GDP divided by the cross-sectional average state GDP. This ensures that our findings are not driven by state-years with little economic activity. As an unreported robustness check, we find similar results weighting by either the lagged state population or the lagged number of firms in the state.

5. Main Results: Effect of Firing Frictions on M&A Activity

Our first set of analyses investigate the effect of firing frictions on M&A activity using the specifications presented in Equations 1a and 1b. The explanatory variable of interest is GF. A negative GF coefficient suggests that the predominant effect of firing frictions is to reduce M&A activity, which would

support the idea that post-merger labor restructuring is a first-order source of M&A value. Alternatively, a positive coefficient would suggest that the net effect of firing frictions is to increase M&A activity, supporting the M&A market as an important channel through which firms reorganize to mitigate the consequences of increased firing frictions.

Column 1 of Table 2-4 presents the results from estimating equation 1a, using Mergers / Firms as the dependent variable. The results indicate that states with GF exceptions have less active M&A markets. The coefficient in Column 1 of negative 1.75 means that state-years with GF exceptions have 0.0175 percentage points fewer of their firms with greater than 5 employees acquired each year. Scaling by the average of 7.69 presented in Table 2-3 indicates that this amounts to a 23% reduction in the number of mergers.

Column 2 indicates that GF provisions have an even stronger negative relation with the dollar volume of M&A activity (scaled by state GDP). Since the dependent variable is logged, the GF coefficient of -0.33 in Column 3 indicates that the dollar volume of M&A proceeds is approximately 33% lower in state with GF exceptions. In contrast to the large effect of GF exceptions on M&A activity, Table 2-4 provides little evidence that IC or PP exceptions significantly affect M&A activity. This is consistent with Autor, Kerr, and Kugler (2007), Serfling (2015), and Acharya, Baghai, and Subramanian (2013) who find that only the GF exception significantly affects firm behavior.

Next we employ the change specification detailed in Equations 2a and 2b to test how WDLs affect merger activity in the year of, year after, and in the long run following adoption. Column 1 of Table 2-5 shows that the number of mergers/firms significantly decreases by approximately 11% in the year of GF adoption. Column 2 provides similar evidence with respect to the dollar volume of M&A activity (scaled by state GDP), which decreases by 23% in the year of GF adoption. In the following year, M&A activity is also lower than in states without GF exceptions. Here, the reduction in merger frequency remains highly significant, but the reduction in M&A dollar volume is not. Over the long term (two years after the exception

is passed and beyond), there is a significant decline in the dollar volume of M&A activity, but less evidence of a persistent decline in M&A frequency.

Notably, the coefficients for *Upcoming GF Change* are not statistically different from zero. All significant changes in M&A activity occur after the passage of WDLs. This suggests that the correlation between the passage of the GF provision and M&A activity we observe is not spurious and that, on average, there is not significant anticipation of GF adoption.

To further establish a causal relation between the WDL adoptions and M&A activity, we investigate merger withdrawals. If WDLs significantly increase firing frictions, and if layoffs are a significant source of value during mergers, then we expect an increase in merger withdrawals the year of and the year after a WDL is introduced as acquirers back out of deals that have suddenly become more costly than was originally anticipated. In Column 3 of Table 2-5, the dependent variable equals the percentage of announced mergers that are withdrawn in a given state-year. We find that the passage of GF exceptions is associated with significant increases in the percent of withdrawn mergers in states during the year these laws are passed. In the year of and year following GF adoption, 6.0 percentage points more of the mergers targeting firms headquartered in a state are withdrawn compared to mergers targeting firms in non-GF states. This represents an approximately 40% increase in the percentage of withdrawn mergers as the sample average is 14.5%. We find no significant anticipation effect as the years prior to GF adoption have similar withdrawal rates compared to states without GF exceptions in place. In addition, we find little evidence that GF exceptions lead to long run increases in withdrawal frequency as the coefficient is less than half the size of those in the years immediately following GF adoptions and only marginally significant.

The results in this section support the prediction that WDLs introduce significant firing frictions, and as a result, firms in states that pass WDLs become less attractive targets and are acquired less. These results corroborate previous studies showing that WDLs impose significant costs on employers. For example, existing evidence suggests that increased firing frictions cause firms to transition away from full-time employees in favor of capital investments (Autor, Kerr, and Kugler, 2007) and temporary employees

(Autor, 2003), leading to increased unemployment (Dertouzos and Karoly, 1992; Autor, Donohue, and Schwab, 2006). Importantly, we view such indirect effects as unlikely explanations for our finding that firing frictions decrease M&A dollar volume because many of the above effects manifest over a longer period, whereas we observe an immediate decrease in M&A activity.

In addition to highlighting labor market frictions as an important determinant of M&A activity, our findings provide new evidence on the extent to which employee turnover is an important source of value for U.S. M&As. Notably, such a conclusion cannot be easily inferred from evidence on the extent to which post-merger labor restructuring occurs – labor restructuring may have occurred even in the absence of a merger or post-merger labor restructuring may be optimal, but not a first-order source of M&A value. Moreover, differences between the U.S. labor market and other developed nations around the world make it hard to infer the effect of firing frictions on U.S. M&As from international evidence. For example, Gugler and Yurtoglu (2004) argue that the low firing frictions in the U.S. are one reason why they observe a significant post-merger reduction in employment levels following European mergers, but not following U.S. mergers.

5.1 Persistence and Heterogeneity of the Effect of Frictions on M&A Activity

The evidence in Section 5 suggests that GF adoptions are followed by immediate and long-run decreases in M&A dollar volume, which is consistent with post-merger labor restructuring being an important source of M&A value for large U.S. M&As. However, the evidence regarding the long-run effect of GF provisions on the number of M&As is less clear. This raises the possibility that the effect of GF adoptions on M&A activity attenuates over time and/or has a less negative effect for small firms.

In this section, we examine the persistence and heterogeneity of the effect of firing frictions on M&A activity. We motivate this analysis by revisiting our alternative prediction that firing frictions may increase M&A activity because they make it more difficult for small firms to survive as standalone entities.

We expect this alternative to become increasingly important over time as firms drift away from their optimal labor allocations. Indeed, it is unlikely that a small firm in the U.S. would feel the effect of increased firing frictions immediately because at the time of GF adoption their labor force is likely to be optimally structured.

Figure 1 illustrates the immediacy of the reduction in M&A activity surrounding GF adoptions. The solid line indicates the average M&A dollar volume for states in each year relative to GF adoption, while the dashed line presents the number of mergers scaled by the total number of firms with over 5 employees. Because our sample only goes back until 1981, each observation is comprised of the 8 states for which we have M&A data from years minus 3 to plus 5 surrounding GF adoption.[29] Figure 1 suggests that there is a large immediate and relatively permanent decrease in the dollar volume of M&A activity following GF adoption. The solid line shows that in the three years prior to adoption, the dollar volume of M&A proceeds is between 3 and 4 percent of state GDP. In the year of GF adoption and the three subsequent years, M&A dollar volume drops to between 2 and 3 percent of state GDP. The dashed line shows that there is an initial drop of similar magnitude in the number of mergers. However, this effect reverses three years after GF adoption, with the number of mergers surpassing pre-GF adoption levels. The higher M&A frequency in years 3 through 5 compared to years -3 through -1 is consistent with the general time trend toward increased M&A volume. Specifically, the average Mergers / Firms is approximately 9 in the three years prior to GF passage and 10.5 in years 3 through 5. This represents an approximately 20% increase over a 6 year period, which, if anything, is a slower growth rate than the time trend suggested in Table 2-3. This descriptive evidence suggests that the negative effect of firing frictions is most persistent for large mergers.

In Table 2-6 we formally investigate whether the negative relation between firing frictions and M&A activity attenuates over time. Specifically, we add an interaction between GF adoption and the

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[29] The figure is qualitatively similar including all state-years surrounding adoption. In this case, the sample size ranges from 8 state-years in time minus three to 12 state-years for years 0 to 3.

number of years since GF adoption to Equations 1a and 1b. Columns 1 and 2 show that the reduction in merger count due to increased firing costs attenuates over time. Using a linear (logged) time trend, the estimated effect of GF adoption on the number of mergers is zero approximately 6 (10) years after GF adoption. Columns 3 and 4 provide little evidence that the effect of GF on M&A proceeds attenuates over time. The more persistent effect of firing frictions on M&A proceeds, compared to the number of M&As, suggests that the attenuation is driven by small mergers. This is consistent with the idea that small firms use the M&A market to combine into larger entities as they drift away from their optimal labor structure, and perhaps is also evidence that post-merger labor restructuring is a smaller source of value for small M&As.

In Table 2-7, we directly investigate how the effect of GF adoption differentially affects the frequency of M&As for small and large targets. The dependent variable in Columns 1 and 2 is the number of M&As in a state-year with no deal values reported. Notably, we do not include these M&As in our Mergers / Firms measure throughout the rest of our analyses. The remaining columns partition the mergers in our Mergers / Firms measure by the value of the target. Columns 3 and 4, 5 and 6, and 7 and 8 contain only deals with targets worth less than $5 million, between $5 and $100 million, and greater than $100 million, respectively.

Moving across the first row of the even numbered columns in Panel A shows that the relation between the GF provision and M&A activity becomes more positive the longer it has been since GF passage for targets of all sizes. However, the second row shows that only mergers with targets over $5 million become less frequent in response to a recent GF passage. In the year following GF adoption, M&As between $5 and $100 million become 29% less frequent and M&As over $100 million become 48% less frequent. Both of these effects attenuate within 10 years of GF adoption, suggesting that the persistent reduction in M&A proceeds is driven by a few very large M&As. In contrast, small mergers never significantly decline following GF passage, even though they become increasingly common in the years following GF adoption.

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The lack of an immediate decline in small firm M&A activity is consistent with post-merger employee turnover not being a primary source of M&A value for small mergers. The long-run reversal is consistent with the idea that firing frictions induce firms to turn to the M&A market to combine into larger entities. However, attributing long-run effects of firing frictions to a specific mechanism is difficult because firing frictions have many effects on firm behavior, which may be correlated with M&A activity. For example, firms reduce leverage (Serfling, 2015), become less profitable (Bird and Knopf, 2009), and increase innovation (Acharya, Baghai, and Subramanian, 2013). In Table 2-8 we provide some circumstantial evidence that firing frictions result in more mergers amongst small firms because they increase optimal firm size. Columns 1 and 2 show that average merger size declines following GF adoption. GF laws result in a 30% reduction in average M&A size, and there is some evidence that this reduction is increasing over time. Columns 3 through 6 further show that over time this increased prevalence of small firm mergers corresponds to a decrease in the percentage of small firms in a state. Having a GF exception results in approximately 0.3 percentage points fewer firms in a state having less than 50 employees. Given that only 6.5% of firms have over 50 employees, this represents an approximately 5% increase in the percentage of firms with over 50 employees.

Another dimension along which the effect of firing friction on M&A activity may vary is labor intensity. If post-merger employee turnover is a more significant source of value for labor intensive M&As then we expect the initial decline in labor intensive M&A activity to be larger than the decline in non-labor intensive M&A activity. In Table 2-9, we investigate this possibility, defining a labor intensive industry as an SIC 2-digit industry with employees-to-assets ratios in the top half of M&A deals. Columns 1 and 2 of Table 2-9 show that the decline in M&A activity following GF adoption is concentrated almost exclusively in labor intensive industries. Labor intensive mergers decrease by 34%, while non-labor intensive mergers decrease by only 8.3%. Notably, this result is not driven by differences in the size of labor intensive versus non-labor intensive mergers as the two groups have similar median target sizes of $85 and $79 million, respectively. This finding suggests that post-merger employee turnover is more of a first-order source of

M&A value for M&As involving targets in labor intensive industries. Interestingly, both labor intensive and non-labor intensive mergers increase over time following GF adoption, consistent with all types of targets benefiting from accessing the M&A market to reorganize as firing frictions cause them to drift away from their optimal structure.

Taken together, the results in this section suggest that the immediate decline in M&A activity following increases in firing frictions masks important nuances of the effect of firing frictions on M&A activity. Over time this initial decline appears to dissipate. In fact, the smallest targets never even experience a significant decrease in M&A activity. These findings are consistent with post-merger employee turnover being more of a first order consideration in large U.S. M&As. They also suggest that even in the presence of increased firing frictions the M&A market remains an important way in which both small firms, and to a lesser extent, large firms respond to economic shocks. Notably, international evidence does not indicate that that the effect of firing frictions on M&A activity dissipates over time (Dessaint, Golubov, and Volpin, 2016). Whether this finding is unique to the United States is an interesting question for future research. If it is, it would suggest that the long-run effect of firing frictions on M&A activity critically depends on the *ex-ante* structure of the labor and M&A markets.

6. Firing Frictions and the Value of M&As

Thus far we have focused on how firing frictions affect M&A quantity. In this section, we investigate the related question of whether firing frictions affect the value of M&As that do occur. For the most part, our predictions regarding the mechanisms through which firing frictions affect M&A quantity extend to this setting. It is possible that firing frictions reduce the value of M&As that do occur because post-merger firing frictions increase the cost of post-merger labor restructuring. It is also possible that firing frictions increase the value of M&As because M&As generate increased benefits to small firms as they seek to reorganize into larger entities.

We investigate the value implications of firing frictions on M&As in two ways. First, we investigate how stock returns in the days surrounding M&A announcements are related to firing frictions. In Column 1 of Table 2-10 we regress the target's and acquirer's combined cumulative abnormal returns from days -1 to +1 surrounding a merger announcement on separate indicators for the presence of GF exceptions in the target's and acquirer's states. We find no evidence that the presence of GF exceptions significantly affect M&A period returns. Column 2 adds an interaction between the presence of a GF exception and the number of years since GF adoption. Again, we find no evidence of a link between firing frictions and M&A period returns. In Columns 3 and 4, we come to a similar conclusion when looking separately at target and acquirer M&A period returns.

These findings suggest that the international evidence in Dessaint, Golubov, and Volpin (2016), suggesting that returns around M&A announcements are more negative following increased firing frictions, may not extend to the U.S. To examine whether this is due to the U.S. market anticipating the negative effect of firing costs on potential M&A targets, we conduct an event study surrounding states' adoptions of GF exceptions. The sample includes all firms headquartered in a state around the time of GF adoption during our sample period, which runs from 1981 through 1999. The dependent variable in Table 2-11 equals the daily abnormal returns in the approximately 50 trading days surrounding a state's GF adoption, where abnormal returns are computed by subtracting Fama-French three factor expected returns from realized returns.[30] In Column 1, the explanatory variable of interest is an indicator for days in our event window, which we follow Serfling (2015) in defining as days minus 1 to plus 3 surrounding a state's adoption of the GF exception by a state appellate or supreme court. The results suggest that returns are 0.2% more negative each day of the event window compared to surrounding days. This finding is in line with Serfling (2015) who finds that a similar sample of firms underperform by approximately 1% over the course of the 5-day event window.

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[30] We compute the Fama-French factors in the 189 trading days prior to the beginning of our sample.

If increased M&A costs are a meaningful component to the costs associated with GF adoption, then the returns experienced surrounding GF adoption should be more negative for firms expected to experience employee turnover as a result of M&As. To test this prediction, we interact the event window indicator with an indicator for a firm that is ultimately acquired within the next year. Columns 2 and 3 show that the negative returns surrounding GF adoption become more negative for firms that are acquired within the following six months or year, respectively. Under the assumption that the market expects firms that are ultimately acquired within the year to be more likely acquisition targets, this evidence is consistent with the market understanding that GF exceptions reduce the value of M&A targets.

To assess the robustness of these results, we repeat the analysis while altering a number of parameters. We find that the results are qualitatively insensitive to both increases and decreases in the number of days classified as being in the event window, the number of abnormal daily returns included in the regressions, and the number of months used in the beta estimation period. Overall, the evidence in this section suggests that firing frictions reduce firm value. Unlike what Dessaint, Golubov, and Volpin (2016) find in international markets, the U.S. market appears to incorporate this value reduction into prices before the M&A announcement.

7. Conclusions and Future Research

We investigate how firing frictions affect the U.S. M&A market. We find that the effect of increased firing frictions on M&A activity is nuanced, depending on an M&A target's size and the amount of time since the firing friction increase. In addition to providing direct evidence on how firing frictions impact the M&A market, our analysis yields new insight into how the source of M&A value varies for different types of U.S. M&A targets.

We find that increased firing frictions result in an immediate and persistent decline in M&A dollar volume. In contrast, we find no immediate decline in M&A frequency within the subsample of small or

non-labor intensive targets. Since these changes in M&A activity (or lack thereof) are observed immediately, they are unlikely to be driven by other indirect effects of increased firing frictions. Thus, we interpret these results as evidence that post-merger employee turnover is a first order source for value for large U.S. M&As, but not for small deals.

Next, we investigate the longer-run effects of firing frictions on M&A activity. Although the decrease in M&A dollar volume is persistent, the reduction in M&A frequency is not. As the amount of time passes following increased firing frictions, M&As become more common, especially amongst small firms. For M&A targets under $5 million, there is no initial decline in M&A activity in response to increased firing frictions, but there is a long-run trend toward more M&A transactions. One explanation for this result is that firing frictions increase the need for small firms to reorganize through the M&A market, perhaps because they increase optimal firm size. Consistent with this interpretation, we find that firing frictions result in progressively fewer small firms in the economy over time. However, we must caveat this interpretation because existing literature documents many long-run effects of increased firing frictions, which may indirectly affect M&A activity or firm size.

The large effects of firing frictions on M&A activity that we document raise several interesting questions for future research. For example, our framework does not easily identify the welfare implications either at the state or country level. The arguments in Maksimovic and Phillips (2001) and Rossi and Volpin (2004) support the idea that high M&A volume is value enhancing, suggesting that reduced state-level M&A activity may reduce state-level welfare. Event study analyses provide some support for this idea as the adoption of laws that increase firing frictions reduce firm value most for firms that are active in the M&A market. Nevertheless, we cannot rule out the possibility that some of the M&A activity that is precluded by increased firing costs would have been value destroying. Even more challenging is identifying the welfare implications at the country (or global) level. Certainly some of the value lost due to a merger reduction in one state shifts to another state (or country). Quantifying this substitution effect would not only

have important policy implications, but would also provide new evidence on how easily substitutable M&A

targets are.

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Appendix B

Variable Definitions From Chapter 2

Variables	Definition and Sources
Mergers/Firm	The total number of completed mergers involving targets in the state in year t divided by the total number of firms in the state in year t with 5 or more employees, multiplied by 10000. Source: SDC; U. S. Census Bureau's Business Dynamics Statistics.
Std Mergers/Firm	Equal to *Mergers/Firm* standardized by the average and standard deviation of mergers/firm for all states in year t. Source: SDC; U. S. Census Bureau's Business Dynamics Statistics.
Ln(M&A Proceeds/Real GDP)	The natural log of one plus the total dollar proceeds from all completed mergers involving targets in the state in year t multiplied by 100 and divided by the state's real GDP for the previous year. Source: SDC; U.S. Bureau of Economic Analysis.
Std M&A Proceeds/Real GDP	Equal to *M&A Proceeds/Real GDP* standardized by the average and standard deviation of proceeds/GDP for all states in year t. Source: SDC; U.S. Bureau of Economic Analysis.
% Withdrawn	The number of mergers involving targets in the state in year t that were ultimately withdrawn divided by the number of completed mergers plus the number of withdrawn mergers involving targets in state in year t. Source: SDC.
Std % Withdrawn	Equal to *Percent Withdrawn* standardized by the average and standard deviation of the percent of withdrawn mergers for all states in year t. Source: SDC.
Average Deal Size	The average deal size of mergers in year 2000 millions of dollars during a state-year. The inflation adjustment is based on the annual consumer price index. Source: SDC; U.S. Bureau of Economic Analysis.
% Firms < 20 (50) Employees	The percentage of firms in a state-year that have more than 20 (50) employees. Source: U. S. Census Bureau's Business Dynamics Statistics.
Combined CAR	The value weighted combination of target and acquirer cumulative abnormal returns (relative to a Fama-French 3-factor model estimated over the previous year) from days -1 to +1 surrounding a merger announcement in percentage terms. Source: CRSP, Ken French's website.
Acquirer (Target) CAR	Acquirer (target) cumulative abnormal returns (relative to a Fama-French 3-factor model estimated over the previous year) from days -1 to +1 surrounding a merger announcement in percentage terms. Source: CRSP, Ken French's website.

Panel B: Explanatory Variables

Variable	Definition and Sources
Business Combination	Indicator variable equal to one if a business combination law was in effect in the state in year t and zero otherwise. Source: Bertrand and Mullainathan (2003).
Control Share Acquisition	Indicator variable equal to one if a control share acquisition law was in effect in the state in year t and zero otherwise. Source: Bertrand and Mullainathan (2003).
Fair Price Law	Indicator variable equal to one if a fair price law was in effect in the state in year t and zero otherwise. Source: Bertrand and Mullainathan (2003).
GF	Indicator variable equal to one if a covenant of good faith exception to at-will employment was in effect in the state in year t and zero otherwise. Source: Autor, Donohue, Schwab (2006).
GF Change Last (This) Year	Indicator variable equal to one if a covenant of good faith exception to at-will employment was first adopted in the state in year t-1 (t) and zero otherwise. Source: Autor, Donohue, Schwab (2006).
GF Change > 2 Years	Indicator variable equal to one if a covenant of good faith exception to at-will employment was first adopted in the state in year t-2 or earlier and zero otherwise. Source: Autor, Donohue, Schwab (2006).
IC	Indicator variable equal to one if an implied contract exception to at-will employment was in effect in the state in year t and zero otherwise. Source: Autor, Donohue, Schwab (2006).
Lag Ln(Real GDP)	The log of the real GDP of the state for year t-1. Source: U.S. Department of Commerce's Bureau of Economic Analysis.
Lag Population	The population estimate of a state as of year t-1. Source: U.S. Census Bureau's Intercensal Estimates.
Lag Unemployment Rate	The unemployment rate in a state for year t-1. Source: U.S. Bureau of Labor Statistics.
PP	Indicator variable equal to one if a public policy exception to at-will employment was in effect in the state in year t and zero otherwise. Source: Autor, Donohue, Schwab (2006).
Right to Work	Indicator variable equal to one if a right-to-work law was passed in a state during or prior to year t and zero otherwise. Source: National Conference of State Legislatures.
Δ Real GDP	The one year growth rate in real gross domestic product over the period t-1 to t. Source: U.S. Department of Commerce's Bureau of Economic Analysis.
Δ Population	The one year growth rate in the population estimate for a state over the period t-1 to t. Source: U.S. Census Bureau's Intercensal Estimates.

Unemployment Rate	The fraction of workers in a state that are a part of the labor force but are unemployed as of the current year. Source: U.S. Bureau of Labor Statistics.
Δ Unemployment Rate	The one year change in the *Unemployment Rate* over the period *t-1* to *t*. Source: U.S. Bureau of Labor Statistics.
Upcoming GF Change	Indicator variable equal to one if a covenant of good faith exception to at-will employment was first adopted in a state in year *t+1* or year *t+2*, and zero otherwise. Source: Autor, Donohue, Schwab (2006).

Appendix C

Public Policy and Implied Contract Exceptions

The PP exception protects employees against discharge when this would violate a state's public policy doctrine. For instance, employers may not fire employees for reporting to jury duty, filing worker's compensation claims, reporting illegal business practices, or for refusing to partake in actions that violate a state's public policy such as destroying evidence or committing perjury.

The IC exception prevents employers from releasing employees without good cause when an implied contract exists between the two. Courts ruled that such a contract exists if statements made by company representatives or an employee handbook indicated that the employee would not be terminated without cause. Company policies that create a specific procedure for employee discipline or termination also have been found to create an implied contract. Additionally, Serfling (2015) notes 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." The effectiveness of this exception may be limited, however, as some state courts have ruled that firms may sidestep its protection of employees by including a disclaimer in their handbook that no statements therein constitute an implied contact.

Figure **2-1**: Mergers and Acquisitions Activity Surrounding Good Faith Passage

Note: This figure plots abnormal returns, as measured using a standard market model, for the 10 day window [-5, 5] surrounding M&A announcement. The solid line represents abnormal returns for firms without connections, while the dotted line represents abnormal returns to firms with a connection at the time of announcement. I consider a firm to be connected if a mutual fund family served as trustee of the firm's 401(k)
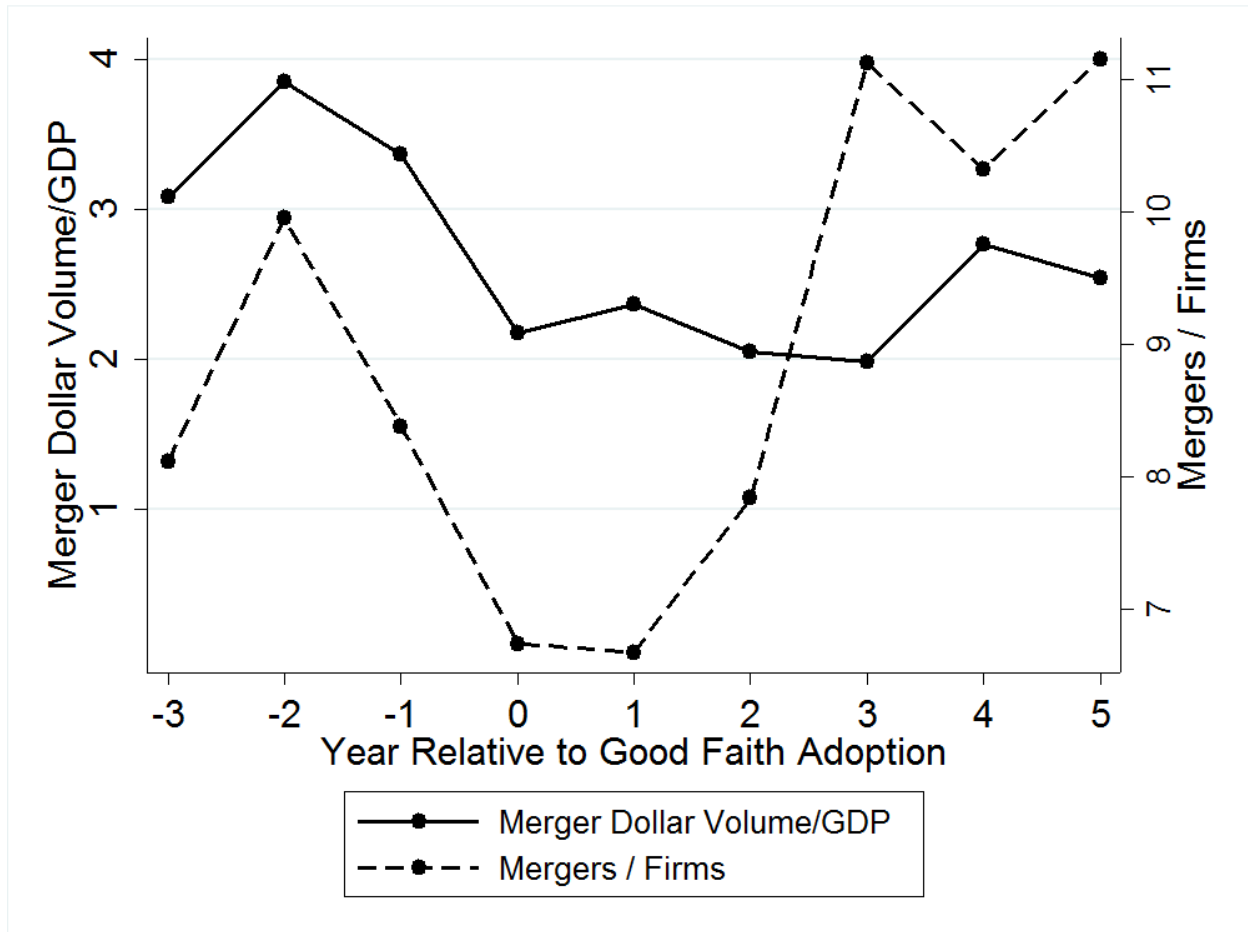
Table **2-1**: Adoption of Wrongful Discharge Laws in the 1980s and 1990s

This table describes the adoption of employee rights laws by states over our sample period. Each column represents the total number of states to have adopted a given law in five year increments. Wrongful Discharge - Any is an indicator equal to one if a state has adopted any one of the three exceptions to at-will employment (good faith, implied contract, and/or public policy). Good Faith, Implied Contract, and Public Policy are indicators equal to one if a state has adopted that particular exception by a given year. Right to Work and Business Combination are indicators equal to one if a state passed a right to work law or a business combination law, respectively, by the given year.

State Law Indicators	1980	1985	1990	1995	2000
Wrongful Discharge - Any	19	42	45	46	47
Good Faith	4	7	9	11	12
Implied Contract	9	31	40	41	41
Public Policy	15	31	42	43	43
Right to Work	15	16	16	17	17
Business Combination	0	1	28	30	30

Table **2-2**: Determinants of Good Faith Exception Adoption

This table presents results from a Cox proportional hazard model. The hazard is the risk a state court will adopt the good faith exception, with a "failure event" occurring in the year of adoption. A state is excluded from the analysis upon adoption. The sample includes data from 1981-1999, and covers 10 of the 14 good faith adoption events. We follow Table II in Serfling (2015) when defining all explanatory variables. These variables are measured as of *t-1*, and include: *State Union Membership* is the fraction of each state's nonagricultural wage and salary employees who are covered by a collective bargaining agreement; *Unemployment Rate* is the fraction of workers within a state that are unemployed but still part of the work force; *State Per Capita GDP* is the real gross domestic product of a state (in thousands of year 2000 dollars), divided by the state's population; *Right to Work* is an indicator variable set to 1 if a state has a right to work law in force in year *t* and zero otherwise; *IC* is an indicator variable set to 1 if the state recognizes the implied contract exception in year *t* and zero otherwise; *PP* is an indicator variable set to 1 if the state recognizes the public policy exception in year *t* and zero otherwise; *Δ Unemployment Rate* and *Δ State Union Membership* are the year over year changes in *Unemployment Rate* and *State Union Membership*, respectively; *Δ Real GDP* is the growth rate in the state's GDP from *t-1* to *t*; *Circuit States' Good Faith*, *Circuit States' Implied Contract*, and *Circuit States' Public Policy* are the fraction of states within a state's federal circuit court district that recognize the good faith, implied contract, and public policy exception, respectively, in year *t*; *Mergers/Firm* is the total number of mergers involving targets in the state-year scaled by the total number of firms in the state with more than 50 employees, multiplied by 100; *M&A Dollar Volume* is the sum of all merger deal values for mergers involving targets in the state-year scaled by the state's real GDP for the year. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	(1)	(2)	(3)	(4)
	Dependent Variable: Good Faith Adoption Indicator			
State Union Membership	-0.086	-0.088	-0.094	-0.090
	(-0.96)	(-0.97)	(-1.02)	(-0.95)
Unemployment Rate	0.086	0.091	0.102	0.088
	(0.41)	(0.43)	(0.47)	(0.39)
Log(State Per Capita GDP)	2.819*	2.847*	2.708*	2.647*
	(1.92)	(1.93)	(1.83)	(1.75)
Right to Work	0.917	0.928	0.950	0.939
	(0.89)	(0.90)	(0.95)	(0.94)
IC	-0.621	-0.628	-0.682	-0.662
	(-0.52)	(-0.53)	(-0.56)	(-0.55)
PP	-1.907	-1.879	-1.900	-1.971
	(-1.54)	(-1.51)	(-1.61)	(-1.60)
Δ Unemployment Rate	-0.068	-0.063	-0.011	-0.013
	(-0.14)	(-0.13)	(-0.02)	(-0.03)
Δ State Union Membership	-0.270	-0.273	-0.282	-0.282
	(-1.03)	(-1.04)	(-1.02)	(-1.02)
Δ Real GDP	3.640	3.691	4.102	4.233
	(0.42)	(0.42)	(0.45)	(0.47)
Circuit States' Good Faith	3.173*	3.206*	3.579*	3.529*
	(1.68)	(1.68)	(1.71)	(1.67)
Circuit States' Implied Contract	1.803	1.834	2.239	2.196
	(0.80)	(0.81)	(0.97)	(0.95)
Circuit States' Public Policy	2.581	2.529	2.709	2.829
	(1.08)	(1.05)	(1.17)	(1.18)
M&A Dollar Volume		0.001		-0.004
		(0.16)		(-0.21)
Mergers/Firm			1.936	2.101
			(1.21)	(1.17)
Pseudo R-squared	0.286	0.286	0.305	0.305
Observations	768	768	736	736

Table **2-3**: Descriptive Statistics on M&A Activity

This table presents descriptive statistics for our main dependent variables. Mergers/Firms is 10,000 times the total number of mergers involving targets in the state-year scaled by the total number of firms in the state with more than 5 employees. M&A Dollar Volume is 100 times the sum of all merger deal values for mergers involving targets in the state-year scaled by the state's real GDP for the year. Panel A presents full sample means, medians, and standard deviations for each variable as well as the percentage of withdrawn mergers and the number of mergers partitioned by merger size and labor intensity. Panel B presents means and standard deviations for our two main dependent variables for each year in our sample.

Panel A: M&A Activity

Variable	Mean	Median	Std. Dev.
Mergers / Firms	7.69	6.20	5.68
M&A Dollar Volume / GDP	3.59	2.00	4.64
% Withdrawal	14.53	11.11	14.79
Mergers / Firms:			
Unreported Value	8.78	7.41	6.30
$0 - $5 million	1.58	1.00	1.72
$5 - $100 million	4.34	3.62	3.26
$100 million and over	1.66	1.28	1.57
Labor Intensive	3.77	2.86	3.29
Non-Labor Intensive	3.89	3.21	2.91

Panel B: M&A Activity over time

Year	Mergers / Firms		M&A Dollar Volume / GDP	
	Mean	Std. Dev	Mean	Std. Dev.
1981	2.22	1.80	2.26	4.58
1982	3.70	2.20	1.39	1.91
1983	5.41	2.65	1.71	1.76
1984	6.49	3.64	2.55	3.38
1985	3.51	2.28	2.30	2.75
1986	3.98	2.62	2.13	3.16
1987	3.58	2.40	2.69	3.05
1988	5.41	2.75	3.95	3.24
1989	5.72	3.38	3.69	4.62
1990	5.89	3.72	2.28	2.67
1991	5.66	3.67	1.49	1.54
1992	7.30	3.50	1.65	2.08
1993	8.69	3.74	2.14	1.76
1994	10.28	4.12	3.00	2.78
1995	11.44	4.83	4.42	4.12
1996	12.71	5.20	5.19	5.51
1997	15.17	6.04	5.88	4.65
1998	15.80	6.40	9.36	7.79
1999	13.14	6.23	9.09	8.01

Table **2-4**: Baseline Effect of Firing Frictions on M&A Activity

This table presents results from difference-in-differences regressions of M&A activity on state and time variation in wrongful discharge laws. The sample includes state-year aggregate merger data from 1981-1999. Our dependent variables include measures of M&A activity by state-year. The dependent variable in column 1, Mergers/Firms, is 10000 times the total number of mergers involving targets in the state-year divided by the total number of firms in the state with more than 5 employees. The dependent variable in column 2, Ln (M&A Dollar Volume/Real GDP), is the natural log of the 100 times the sum of all merger deal values for mergers involving targets in the state-year scaled by the state's real GDP. Our explanatory variable of interest, GF, indicates a state-year with the GF exception to at-will employment in place. All other variables are defined in Appendix B. Standard errors are clustered at the state and year levels. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	(1) Mergers / Firms	(2) Ln(M&A Dollar Volume / GDP)
GF	-1.753**	-0.326***
	(-2.53)	(-3.27)
IC	-0.054	0.045
	(-0.14)	(0.47)
PP	-0.632	-0.001
	(-1.37)	(-0.01)
Lag Unemployment Rate	0.422***	0.018
	(2.98)	(0.86)
Lag Ln(Real GDP)	-6.050***	-0.213
	(-2.65)	(-0.50)
Lag Population	17.176***	0.325
	(3.07)	(0.41)
Δ Unemployment Rate	-2.317**	-0.171
	(-2.25)	(-1.00)
Δ Real GDP	18.356***	0.458
	(4.22)	(0.62)
Δ Population	41.861*	6.433**
	(1.73)	(2.22)
Right to Work	1.631***	0.002
	(3.17)	(0.03)
Business Combination	0.405	0.055
	(0.90)	(0.65)
Fair Price Law	-0.453	0.071
	(-0.73)	(0.76)
Control Share Acquisition	-0.119	-0.008
	(-0.24)	(-0.13)
State Fixed Effects	YES	YES
Year fixed Effects	YES	YES
Region Time Trend	YES	YES
Adj. R-squared	0.902	0.661
Observations	950	950

Table **2-5**: Immediate Effect of Firing Frictions on M&A Activity

This table presents results from difference-in-differences regressions of M&A activity on state and time variation in wrongful discharge laws. The sample includes state-year aggregate merger data from 1981-1999. Our dependent variables include measures of M&A activity by state-year. The dependent variable in column 1, Mergers/Firms, is 10000 times the total number of mergers involving targets in the state-year divided by the total number of firms in the state with more than 5 employees. The dependent variable in column 2, Ln (M&A Dollar Volume/Real GDP), is the natural log of the 100 times the sum of all merger deal values for mergers involving targets in the state-year scaled by the state's real GDP. The dependent variable in column 3 is the number of mergers involving targets in a state-year that are ultimately withdrawn divided by the total number of announced mergers involving targets in that state-year. Our explanatory variables of interest, GF Change > 2 years, GF Change Last Year, and GF Change This Year, indicate a state-years in which a GF exception has been in place for greater than two years, between one and two years, and less than one year, respectively at the end of the year. All other variables are defined in Appendix B. Standard errors are clustered at the state and year levels. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	(1) Mergers / Firms	(2) Ln(M&A Dollar Volume / GDP)	(3) % Withdrawal
GF Change > 2 Years	-1.537	-0.301**	2.362*
	(-1.53)	(-2.17)	(1.87)
GF Change Last Year	-2.067***	-0.041	5.904***
	(-2.82)	(-0.29)	(2.71)
GF Change This Year	-0.861**	-0.231**	6.008*
	(-2.58)	(-2.10)	(1.70)
Upcoming GF Change	0.770	0.153	1.424
	(0.75)	(1.08)	(0.57)
IC	-0.040	0.035	2.067**
	(-0.10)	(0.35)	(2.25)
PP	-0.609	-0.005	-0.285
	(-1.33)	(-0.04)	(-0.20)
Table 2-4 Controls	YES	YES	YES
State Fixed Effects	YES	YES	YES
Year fixed Effects	YES	YES	YES
Region Time Trend	YES	YES	YES
Adj. R-squared	0.902	0.661	0.643
Observations	950	950	920

Table **2-6**: Persistence of the Effect of Firing Frictions on M&A Activity

This table presents results from difference-in-differences regressions of M&A activity on state and time variation in wrongful discharge laws. The sample includes state-year aggregate merger data from 1981-1999. Our dependent variables include measures of M&A activity by state-year. The dependent variable in column 1, Mergers/Firms, is 10000 times the total number of mergers involving targets in the state-year divided by the total number of firms in the state with more than 5 employees. The dependent variable in column 3, Ln (M&A Dollar Volume/Real GDP), is the natural log of the 100 times the sum of all merger deal values for mergers involving targets in the state-year scaled by the state's real GDP. The explanatory variables of interest are GF, GF * Years Passed, and GF*Ln(1+ Years Passed). GF indicates a state-year with the GF exception to at-will employment in place. GF * Years Passed (GF * Ln(1+Years Passed)) interacts the GF indicator with a linear (logged) time trend, counting the number of years since GF passage. All variables are defined in Appendix B. Standard errors are clustered at the state and year levels. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	(1) Mergers / Firms	(2) Mergers / Firms	(3) Ln(M&A Dollar Volume / GDP)	(4) Ln(M&A Dollar Volume / GDP)
GF * Years Passed	0.344***		0.010	
	(4.55)		(1.30)	
GF * Ln (1+Years Passed)		1.299**		-0.007
		(2.00)		(-0.13)
GF	-1.978**	-2.691***	-0.333***	-0.321***
	(-2.21)	(-2.87)	(-3.16)	(-2.81)
IC	-0.177	-0.024	0.041	0.044
	(-0.52)	(-0.06)	(0.44)	(0.47)
PP	-0.147	-0.403	0.014	-0.002
	(-0.35)	(-0.90)	(0.12)	(-0.02)
Table 2-4 Controls	YES	YES	YES	YES
State Fixed Effects	YES	YES	YES	YES
Year fixed Effects	YES	YES	YES	YES
Region Time Trend	YES	YES	YES	YES
Adj. R-squared	0.909	0.903	0.661	0.660
Observations	950	950	950	950

Table **2-7**: Target Size and the Effect of Firing Frictions on M&A Activity

This table partitions the dependent variable Mergers/Firms, which equals 10000 times the total number of mergers involving targets in the state-year divided by the total number of firms in the state with more than 5 employees, into size buckets. The dependent variable in Columns 1 and 2 includes only mergers with unreported deal size, while the dependent variables in Columns 3 through 8 contains deals of size specified in the second row. Panel A presents regression results, where the explanatory variables of interest are GF and GF * Years Passed. GF indicates a state-year with the GF exception to at-will employment in place. GF * Years Passed interacts the GF indicator with a linear time trend, counting the number of years since GF passage. Panel B divides the coefficients of these variables of interest by the sample average level of M&A activity within each respective size bin. This can be interpreted as the percentage change in M&A activity that is expected in response to a one unit increase in the explanatory variable. All variables are defined in Appendix B. Standard errors are clustered at the state and year levels. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

Panel A: Regression Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Unreported value		$0 - $5 million		$5 - $100 million		$100+ million	
	mergers / firms		mergers / firms		mergers / firms		mergers / firms	
GF * Years Passed		0.197***		0.049**		0.210***		0.088***
		(2.97)		(2.11)		(5.79)		(3.12)
GF	-0.160	-0.288	-0.071	-0.103	-1.132**	-1.268**	-0.738**	-0.795**
	(-0.16)	(-0.26)	(-0.45)	(-0.54)	(-2.43)	(-2.38)	(-2.05)	(-1.99)
IC	0.687**	0.616*	0.027	0.009	-0.188	-0.263	0.108	0.076
	(2.10)	(1.87)	(0.23)	(0.07)	(-0.65)	(-1.04)	(0.85)	(0.72)
PP	-0.472	-0.193	-0.165**	-0.095	-0.383	-0.087	-0.114	0.009
	(-1.36)	(-0.54)	(-2.34)	(-1.42)	(-1.01)	(-0.27)	(-0.70)	(0.05)
Table 2-4 Controls	YES	YES	YES	YES	YES	YES	YES	YES
State Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Year fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Region Time Trend	YES	YES	YES	YES	YES	YES	YES	YES
Adj. R-squared	0.900	0.902	0.835	0.837	0.857	0.866	0.782	0.788
Observations	950	950	950	950	950	950	950	950

Panel B: Magnitude of GF effect relative to mean M&A activity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Unreported value		$0 - $5 million		$5 - $100 million		$100+ million	
GF * Years Passed		2.2%		3.1%		4.8%		5.3%
GF	-1.8%	-3.2%	-4.4%	-6.5%	-26.1%	-29.2%	-44.5%	-47.9%

Table **2-8**: Firing Frictions and Long Run Changes in Rirm Size

This table presents the results of the impact of the adoption of the Covenant of Good Faith and Fair Dealing on average deal and firm size. Columns 1 and 2 regress the natural log of one plus the average merger size (in year 2000 millions of dollars) on state and time variation in wrongful discharge laws. Here, the sample is restricted to state-years with more than one merger. Columns 3 and 4 (5 and 6) conduct similar regressions where the dependent variable is the percentage of firms with fewer than 20 (50) employees in a given state-year. The explanatory variables of interest are indicators for a target's or acquirer's state having a Good Faith exception to at will employment in place. Columns 2, 4, and 6 interact these indicators with the number of years since the GF exception was passed. All variables are defined in Appendix B. Standard errors are clustered at the state and year levels. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	(1) Ln(Average Deal Size)	(2) Ln(Average Deal Size)	(3) % Firms < 20 Employees	(4) % Firms < 20 Employees	(5) % Firms < 50 Employees	(6) % Firms < 50 Employees
GF * Years Passed		-0.009*		-0.035**		-0.017**
		(-1.66)		(-2.10)		(-2.02)
GF	-0.305***	-0.302***	-0.157	-0.134	-0.170**	-0.159*
	(-2.91)	(-2.98)	(-0.97)	(-0.80)	(-2.04)	(-1.82)
IC	0.169	0.172	-0.064	-0.052	-0.066*	-0.060*
	(1.29)	(1.30)	(-0.95)	(-0.74)	(-1.84)	(-1.69)
PP	0.051	0.040	-0.127	-0.176*	-0.073	-0.097*
	(0.31)	(0.23)	(-1.21)	(-1.81)	(-1.36)	(-1.85)
Table 2-4 Controls	YES	YES	YES	YES	YES	YES
State Fixed Effects	YES	YES	YES	YES	YES	YES
Year fixed Effects	YES	YES	YES	YES	YES	YES
Region Time Trend	YES	YES	YES	YES	YES	YES
Adj. R-squared	0.497	0.497	0.965	0.967	0.981	0.982
Observations	876	876	950	950	950	950

Table **2-9**: Labor Intensity and the Effect of Firing Frictions on M&A Activity

This table partitions the dependent variable Mergers/Firms, which equals 10000 times the total number of mergers involving targets in the state-year divided by the total number of firms in the state with more than 5 employees, into labor intensive and non-labor intensive mergers. The dependent variable in Columns 1 and 2 includes only mergers with targets in SIC 2-digit industries with above median employees to assets ratios, while the dependent variables in Columns 3 and 4 includes only M&A targets in other industries. Panel A presents regression results, where the explanatory variables of interest are GF and GF * Years Passed. GF indicates a state-year with the GF exception to at-will employment in place. GF * Years Passed interacts the GF indicator with a linear time trend, counting the number of years since GF passage. Panel B divides the coefficients of these variables of interest by the sample average level of M&A activity within each respective size bin. This can be interpreted as the percentage change in M&A activity that is expected in response to a one unit increase in the explanatory variable. All variables are defined in Appendix B. Standard errors are clustered at the state and year levels. Statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

Panel A: Regression Results

	(1)	(2)	(3)	(4)
	Labor intensive		Non-labor intensive	
	mergers / firms		mergers / firms	
GF * Years Passed		0.145***		0.126***
		(3.44)		(3.59)
GF	-1.267***	-1.362***	-0.324	-0.407
	(-3.23)	(-2.75)	(-0.96)	(-1.02)
IC	0.218	0.166	-0.346	-0.391*
	(1.07)	(0.97)	(-1.46)	(-1.74)
PP	-0.345*	-0.140	-0.236	-0.058
	(-1.78)	(-0.72)	(-0.76)	(-0.18)
Table 2-4 Controls	YES	YES	YES	YES
State Fixed Effects	YES	YES	YES	YES
Year fixed Effects	YES	YES	YES	YES
Region Time Trend	YES	YES	YES	YES
Adj. R-squared	0.892	0.896	0.830	0.835
Observations	950	950	950	950

Panel B: Magnitude of GF effect relative to mean M&A activity

	(1)	(2)	(3)	(4)
	Labor Intensive		Non-labor Intensive	
GF * Years Passed		3.8%		3.2%
GF	-33.6%	-36.1%	-8.3%	-10.4%

Table **2-10**: The Good Faith Provision and M&A Returns

This table conducts a merger level regression where the dependent variable is the cumulative abnormal returns (relative to a Fama-French 3-factor model estimated over the previous year) from days -1 to +1 surrounding a merger announcement in percentage terms. Columns 1 and 2 combine the target's and acquirer's returns (on a value weighted basis), Column 3 (4) uses just the acquirer's (target's) returns. Columns 1 and 2 restrict the sample to deals with publicly traded targets and acquirers. Column 3 (4) restricts the sample to deals with publicly traded acquirers (targets). The explanatory variables of interest are indicators for a target's or acquirer's state having a Good Faith exception to at will employment in place as well as (in Columns 2 through 4) the interaction between these indicators and the number of years since the GF exception was passed. All columns include state and year-region fixed effects, indicators for IC and PP exceptions to at-will employment, right to work, business combination, fair price, or control share acquisition laws in the target or acquirer's state, and indicators for within industry and within state mergers, and whether the acquirer is in a labor intensive industry, and controls for the natural log of deal value and the target's or acquirer's market capitalization where appropriate. All variables are defined in Appendix B. Standard errors are clustered at both the state and year levels. Significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	(1) Combined CAR [-1, 1]	(2) Combined CAR [-1, 1]	(3) Acquirer CAR [-1, 1]	(4) Target CAR [-1, 1]
Target GF	0.029	-1.284	-0.009	0.000
	(0.07)	(-0.87)	(-1.07)	(0.02)
Target GF * Years Passed		0.477	0.005	0.008
		(0.75)	(1.63)	(0.87)
Target IC	0.198	0.218	0.006**	0.007
	(0.54)	(0.59)	(2.51)	(0.95)
Target PP	0.407	0.410	-0.007**	0.008
	(1.33)	(1.32)	(-2.66)	(1.08)
Acquirer GF	1.334	1.245	0.004	-0.042
	(1.12)	(1.03)	(0.37)	(-1.05)
Acquirer GF * Years Passed		0.233	-0.002	0.002
		(0.77)	(-1.26)	(0.50)
Acquirer IC	0.264	0.221	0.003	-0.003
	(0.36)	(0.31)	(1.30)	(-0.22)
Acquirer PP	-0.105	-0.096	0.003	0.024
	(-0.17)	(-0.16)	(0.88)	(1.34)
Within State	-0.667*	-0.791**	-0.003	-0.011*
	(-1.80)	(-2.29)	(-1.31)	(-1.85)
Within Industry	-0.434	-0.441	-0.008***	-0.015**
	(-1.44)	(-1.45)	(-2.74)	(-2.26)
Ln (1+ Deal Value)	0.797**	0.788**	0.005***	0.065***
	(2.11)	(2.11)	(5.23)	(10.79)
Ln (1+Target Market Cap.)	0.076	0.083		-0.071***
	(0.19)	(0.21)		(-11.93)
Ln (1+Acquirer Market Cap.)	-1.275***	-1.276***	-0.013***	
	(-8.25)	(-8.23)	(-11.63)	
Acquirer, Deal & Target Controls	YES	YES	YES	YES
State Fixed Effects	YES	YES	YES	YES
Year-Region Fixed Effects	YES	YES	YES	YES
Adj. R-squared	0.054	0.054	0.038	0.038
Observations	3,215	3,215	19,391	5,311

Table **2-11**: CARs for Public Firms in GF Adopting States based on M&A Targeting

This table presents results from an event study. The dependent variable is daily abnormal returns computed using the Fama-French three-factor model (with parameters calculated over the 9 months prior to the beginning of the sample) and CRSP equal weighted market returns. The first explanatory variable of interest is an indicator for a day within the *5-day Window* beginning on t-1 and continuing to t+3 surrounding a state's adoption of the Good Faith exception to at will employment by a state appellate or state supreme court. We consider a state as having adopted the Good Faith exception on the ruling date (t=0) when the court issues its decision to adopt. *Targeted within 6 Months* and *Targeted within 1 Year* are dummy variables that indicate whether a firm was targeted within 6 months or 1 year respectively. These variables are interacted with our event window to form *Window x Target 6m* and *Window x Target 1y*, respectively. Our regression window includes the 5-day event window as well as the 21 trading days both preceding [-22, -2] and following [4, 24] the event window. The availability of M&A data restricts our sample to the 1981-2000 period, during which the following states adopt the GF exception: AL, AZ, DE, ID, LA, MT, NV, OK, UT, and WY. The sample includes all public firms in these states that have positive, non-missing assets and sales data. Standard errors for all regressions are clustered at the state level. T-stats are reported in parentheses and statistical significance is denoted at the 1% (***), 5% (**), and 10% (*) levels.

	(1)	(2)	(3)
		GF Announcement CAR	
5 Day Window	-0.002**	-0.002*	-0.001*
	(-2.34)	(-2.05)	(-1.90)
Targeted within 6 Months		0.005***	
		(3.62)	
Window x Target 6m		-0.010**	
		(-2.71)	
Targeted within 1 Year			0.004**
			(2.62)
Window x Target 1y			-0.008***
			(-3.32)
Adj. R-squared	0.000	0.000	0.000
Observations	14,352	14,352	14,352

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Ph.D. in Finance	Pennsylvania State University	2011-2017
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WORKING PAPERS

"Don't Bite the Hand that Feeds: Mutual Fund 401(k) Management and Firm M&A Activity",
    Job Market Paper
"Firing Frictions and the Mergers and Acquisitions Market", with Matthew Gustafson and Adam
    Welker, *Working Paper*

REFEREED PUBLICATIONS

"Regional Differences in Fan Preferences for Minor League Hockey: The AHL". *New York
    Economic Review* 42.1, pp. 63-73, 2011, with Rodney Paul

CONFERENCE PRESENTATIONS

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