Two Essays on Labor and Finance.

by

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A Dissertation submitted to the

Graduate School-Newark

Rutgers, the State University of New Jersey

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Ph.D. in Management

Written under the direction of

Professor Simi Kedia

and approved by

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Newark, New Jersey

October, 2014

ABSTRACT OF THE DISSERTATION

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There is an emerging literature linking finance to employment. My dissertation focuses on a combination of institutional investors, family firms, which are corporate finance topics and layoff decisions--which is a labor economics topic.

The first essay examines institutional investors can play an important role on the firm's layoff decisions. This study uses a hand-collected dataset of employee layoff announcements from 1983 to 2008, to examine the relationship between layoffs and institutional ownership. First, I find that firms with high institutional ownership are more likely to lay off employees. Furthermore, I study the effect of investor horizon on the layoff decisions. I find that the likelihood of layoffs is positively related to ownership by long-term institutional investors who have greater incentives for monitoring that result in layoffs. The propensity to lay off employees is also increasing in public pension fund ownership. Firms with high local institutional ownership are less likely to lay off employees consistent with the presence of local social and political pressure. Finally, I find that the market perceives layoff announcements made by firms with more long-term institutional investors, public pension funds and non-local institutions positively, in comparison with layoffs by firms with more short-term institutional investors, non-public pension funds and local institutions.

The second essay explore whether there is difference in employment policy between family firms and non-family firms. Using large hand-collected layoff samples during 2002-2008, I find that family firms are less likely to reduce employees than non-family firms. The lower propensity for layoffs in family firms is robust to a host of controls for firm characteristics and economic conditions. This lower propensity for layoffs is not explained by differences in how family and non-family firms respond to economic difficulties. However, the lower propensity for layoffs in family firms is stronger when 1) the founder owners are in control and 2) when the firm is located in less populated counties. This suggests that managers in family firms provide an implicit contract ensuring job security to employees.

Acknowledgements

Through only my name appears on the cover of this dissertation, a great many people have contributed to its production. I owe my gratitude to all those people who have made this dissertation possible and because of whom my graduate experience has been one that I will cherish forever.

My deepest gratitude is to my advisor, Professor Simi Kedia. I have been amazingly fortunate to have an advisor who gave me the freedom to explore on my own and at the same time the guidance to recover when my steps faltered. Simi taught me how to question thought and express ideas. Her patience and support helped me overcome many crisis situations and finish this dissertation. I hope that one day I would become as good an advisor to my students as Simi has been to me.

I would like to thank my dissertation committee members, Professor Ivan Brick, Professor Oded Palmon, and Professor Elizer Fich. Their insightful comments and suggestions helped me a lot to improve my dissertation. I also specially thank Professor Vikram Nanda, Professor Rose Liao, and Professor Jinho Byun for their encouragement and valuable advice.

Many friends have helped me stay sane through these difficult years. I deeply thank SangHyun Kim, Tae-Nyun Kim and Jing Jin for cheerful friendship and supporting me overcome setbacks and stay focused on my graduate study.

Most importantly, none of this would have been possible without the love and patience of my parents. I would like to express my heart-felt gratitude to my wife, Younmin Park, for her love and full support.

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Dedication

To Younmin, Ryan, Brayden, and my parents, Sun-Hwan Kim and Sung-Sook Byun:

thank you for the constant encouragement and support.

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Essay 1 Role of Institutional Investors in Layoff Decision

"Rather than just cost-cutting, increased efficiency via layoff will ultimately boost the sales by helping the firm better serve its customer."

-Mark Hurd, Former CEO of HP

1. Introduction

Employee layoffs have attracted substantial attention from media, investors, and regulators in recent years as many firms have used layoffs as a means to cut costs and boost performance, triggering a spike in unemployment rate. According to Bureau of Labor Statistics, more than 6.5 million jobs in the U.S. have been eliminated in 2010 since the recession began in December 2007.

There is a large body of prior academic research that has mostly focused on the stock market reaction to layoff announcements. Previous work in the layoff literature assumes that layoffs are homogeneous. However, the impact of layoffs on firm value is likely to depend on firm characteristics. Surprisingly, there is little work examining what firm characteristics are associated with value enhancing layoffs.

This paper focuses on the relation between institutional investors and the layoff decision. Particularly, I shed light on how institutional investors affect layoff decisions after taking into account the heterogeneity of institutional investors. Probably the most important phenomenon in corporate governance in the last decades has been the remarkable rise in institutional ownership. Institutional investors play a central role in financial markets as they influence firms to change corporate policies to enhance shareholder value. Institutional shareholders have been associated with significantly

increased CEO turnover in the aftermath of poor performance (See Aggrawal, Reel, Ferreira and Matos 2010). Consequently, CEOs and their firms feel increasing pressure to take into account the recommendations of their institutional shareholders. In response to shareholders' demand for better performance and to satisfy institutional investors, firms are likely to seek a way to increase profits or reverse declining performance. One of these ways to improve performance is increasing reliance on layoffs. This is exemplified by the following remark by Florida State Pension Fund: "The ability to generate return on equity for shareholders--not necessarily asset size--should be the determinant of the proper size of the corporation. They may need to downsize.... The key from our stand point is to get the directors thinking about that."

Motivated by these facts, the central question in this paper is: does the presence of institutional investors make a firm more likely to announce a layoff announcement?

I hypothesize that firms with greater institutional ownership are more likely to lay off employees. These institutional owners with large holdings are likely to put pressure on managers to consider ways to improve performance, including layoffs. Consistent with this hypothesis, I find a positive relation between institutional ownership and the layoff decision.

In addition, institutional investors are not homogeneous (see Gompers and Metrick (2003)) and have differing investment horizon, investment styles and political and legal constraints. Bushee (1998) finds that firms with more transient institutional investors with short term horizons are more likely to cut research and development expenses to meet earnings target. Gaspar, Massa, and Matos (2005) show that short term institutions are associated with weak monitoring and weak bargaining in acquisitions.

Burns, Kedia and Lipson (2010) show that transient institutions are associated with low information quality, evident in the use of discretionary accruals and the likelihood of financial restatements. Chen, Harford, and Li (2008), document that institutions with long-term investments exert more effective monitoring, which results in better post-merger performance. I hypothesize that short term investors are more likely to sell their holdings in the face of poor performance, while long term investors are more likely to support actions that increase efficiency and address reasons for poor performance. I hypothesize that long term investors are more likely to be associated with the layoff decision. I classify investors into two groups: short term or transient, if they have small holdings and high turnover, and long term investors, with diversified and large holdings and low turnover.[1]

Public pension funds have been regarded as the most active shareholder group to pressure managers through private negotiations and propose anti-management proxy proposals (see Romano (1993), Karpoff (1998)). Their activism to increase firm performance, especially with respect to layoffs, caused Labor Secretary Robert B. Reich in 1993 to appeal to these institutions to soften their stance towards layoffs.[2] This anecdotal evidence and prior research about public pension activism raise the question about whether or not a large percentage of ownership by public pension funds is associated with a higher likelihood of layoffs. To classify investors as public pension,

[1] I use Bushee (1998) classification for investor horizon. I am grateful to Prof. Brian Bushee for sharing his data with me. My definition of long term investors is the sum of Quasi Indexers and Dedicated investor's classifications in the Bushee dataset. Short term investors are those classified as Transient investors.

[2] U.S official in plea to pension funds, New York times 1993.

I use the list of public pension funds from Gillan and Starks (2000), Woidtke (2002) and Cremers and Nair (2005).

Another class of institutional shareholders that are likely to differ in their propensity to layoff is geographically proximate or local institutions. Local institutions, i.e., those headquartered in the same MSA as the firm, overweigh local firms. Several studies document that proximity is associated with information advantages and investors earn abnormal returns on their local holdings (See Coval and Moskowitz (1999) and Ivkovich and Weisbenner (2005)). Chaochharia, Niessen and Kumar (2012) document that local institutions are associated with more effective corporate governance, increased CEO turnover and lower excess CEO pay. Aside from information advantage, there is another likely effect of proximity on the layoff decisions of firms. Yonker (2010) finds that local managers are more likely to implement labor-friendly policies and less likely to lay off employees. Landier, Nair and Wulf (2008) also find that employees in headquarters are less likely to be laid off. This suggests that local institutions are likely to influence firm's layoff decisions. I investigate the relation between ownership by local institutions and the firm's layoff decision. To measure proximity between institutional investors and firms, I collect data on the location of institutional investors from 13f filings on Edgar database and obtain firm location data from COMPUSTAT.

To test these hypotheses, I hand collect and compile a dataset of all layoff announcements between 1983 and 2008.[3] Layoffs are defined as permanent employee layoffs and therefore I exclude temporary layoff announcements. I check the validity of

[3] I am grateful to Prof. Kevin Hallock for sharing me with his data on layoff announcements for the period 1970 to 2002. I include his layoff sample from 1983 to 2002 due to the limitation of institutional holdings and missing information of firm characteristics (e.g. union coverage data starts from 1983 to 2013). I supplement this by collecting the data from 2002 to 2008.

this public announcement of layoffs by checking with COMPUSTAT and ensuring that the announcement was followed by an actual reduction in the number of employees. Along with the date of the layoff announcement, I also collect data on number of employee laid off and the stated reasons for layoffs. My final sample includes 2,034 layoff announcements during the sample period.

My first set of empirical results shows that firms with high institutional ownership have a higher likelihood of layoffs. Next, institutions have differing investment horizon, investment styles and objectives but also have different benefits and costs of monitoring efforts. I focus on heterogeneity of institutional investors to identify which institutions are more likely to play an active monitoring role on layoffs. I find that institutional investors differ in their impact on layoff decisions. Specifically, consistent with efficient monitoring hypothesis of long-term institutions, the coefficient of long-term institutional ownership is positive and significant, but the coefficient of short-term institutional ownership is negative and insignificant. Furthermore, I find that public pension funds ownership is significantly positively related to the layoff decision. This result is consistent with anecdotal evidence and previous research on public pension activism. The results point to the significant active role of public pension funds in monitoring management. I also find that the propensity to employee layoff is negatively related to local institutional ownership. Firms with high local institutional ownership are significantly less likely to lay off employees. This points at social and potential political pressures faced by local institutions in pushing for higher layoffs.

As institutional ownership is a function of firm size, for robustness and to ensure that my results are not driven by size differences between layoff and non-layoff firms,

I also estimate my results in a size and industry matched sample. For every layoff firm, I find a non-layoff firm that is closest in size and that operates in the same two digit SIC code. Using this criterion, I am able to find a matched firm for 1,137 layoff announcements. Using conditional logistic estimation, I continue to find qualitatively similar results in the matched sample.

We have seen that the likelihood of layoffs is high during difficult economic times. The monitoring effort of institutions can be greater in an economic, industry and firm-specific downturn. I look at the interaction between institutional ownership and three different proxies for difficult economic times. In general, irrespective of long-term or short-term investor, the propensity to lay off employees becomes greater in difficult economic times. Nevertheless, long-term investors have relatively greater impacts on layoffs than short-term investors. In contrast, I find that the propensity of layoffs is increasing in the holding of public pension fund and non-local institutional investors. These results suggest that monitoring institutions allocate their monitoring effort to influence managers in order to initiate layoffs, especially during economic downturns.

My evidence so far suggests a positive relation between institutional ownership and firm's layoff decision. This raises the question of whether the previously-discovered relationship between institutional ownership and the layoffs could be spurious if both are determined by firm-level characteristics. I show that these results hold after accounting for the endogeneity of the shares owned by institutions.

If long-term institutional investors and public pension funds are significantly more likely to influence layoff decisions that enhance firm value, the market reaction to the layoff announcement should be higher when these institutions are present. To

examine this I study whether market reaction to a layoff announcement is increasing in long term institutional ownership and public pension fund ownership. Consistent with the hypothesis, I find that the 11-day cumulative abnormal return (CAR) around layoff announcement is increasing in ownership by long term institutional investors and public pension funds. The CARs are decreasing in the ownership by short term institutions, suggesting the market expectation that layoffs initiated on account of pressure from these institutions are likely short term and do not enhance shareholder value in the long term. This result on the role of short term institutional investors is consistent with that of Bushee (1998).

Finally, to examine whether positive relation between institutional ownership and CARs is also present after layoffs, I calculate long-term abnormal performance by using calendar-time portfolio approach. I show the positive performance of layoffs with high institutional ownership.

In summary, the above results suggest that employee layoffs are a value enhancing activity when they are initiated by firms with long-term institutional investors, public pension funds and non-local institutions. This paper complements the burgeoning literature on layoffs and makes several contributions. First, the uniqueness of the hand-collected layoff data allows an in-depth analysis of layoff decisions over a long period of time, from 1983 to 2008. Secondly, to my knowledge, this is the first paper documenting the fact that the heterogeneity of institutional ownership matters in the layoff decision. The results in the paper add to the literature that examines the monitoring activities of institutional investors and shows that, among other corporate decisions, monitoring has a strong effect on downsizing decisions.

The remainder of the paper is organized as follows: Section 2 provides a brief literature review and develops testable hypotheses. Section 3 describes the sample selection and matching procedure, and presents the descriptive statistics of layoff and non-layoff firms. Section 4 summarizes and discusses the results. Section 5 concludes the argument.

2. Literature Review and Hypothesis Development

Layoffs have been examined by both academic research and the popular press. A Large body of prior academic research has focused on the stock market reaction to layoff announcements. Earlier work by Linn and Rozeff (1993), Elayan, Swales, Maris and Scott (1998), Hallock (1998), Chen, Mehrotra, Sivakumar and Yu (2001) find that layoff announcements have a negative effect on stock price. This negative market reaction is consistent with the market learning about unfavorable market conditions such as declining demand from the layoff announcement. However, later work by Brookman, Chang and Rennie (2007) and Chalos and Chen (2002) find a positive relationship between layoff and stock price return around announcements. In the latter years, as the market learns about industry and demand conditions faced by the firm from other sources rather than a firm's layoff announcement, announcement return turns positive as it conveys the firm's reorganization efforts to deal with economic problems. Consistent with this supposition, Palmon, Sun and Tang (1997) find that announcement returns for layoff depend on stated reason for layoffs. The returns are positive when the reason for the layoff is improving efficiency and negative when it is declining demand.

Farber and Hallock (2009) also find that most layoffs in early 1970s are motivated by declining demand whereas recent layoffs are more motivated by improving efficiency. Consistent with this view, Farber and Hallock (2009) find that market reaction to recent layoff announcements becomes less negative or even positive.

Several papers have looked at the relationship between firm characteristics and the layoff decision. Hallock(1998), Kang and Shivdasani (1997) show that layoffs are more prevalent in larger firms. Denis and Kruse (2000) document that poor performance is a significant factor associated with the layoff decision. Leverage has been shown to have a mixed effect on the layoff decision. Hiller, Marshall, McColgan and Werema (2006) and Ofek (1993) document that leverage increases the likelihood of employee layoffs whereas Kang and Shivdasani (1997) find that there is no such relationship between leverage and the layoff decision. I include all these firm characteristics that are associated with layoff decisions in my estimations.

Finally, there have been a few studies that explore the relationship between governance structure and the layoff decision. Bethel and Liebeskind (1993) find that firms with greater block-holder ownership experienced more layoffs. Perry and Shivdassai (2005) find that employee layoff activity increases with the number of outside independent directors on the board. These papers suggest that firms with better governance structures are more likely to initiate layoffs that can increase shareholder value. In this paper, I focus on the role of another aspect of governance structure — monitoring by institutional investors— and its effect on the layoff decision.

The paper is also related to a large literature on institutional ownership. Several papers have demonstrated the monitoring role of institutional investors. Institutional

ownership is known to impact CEO turnover (Parrino, Sias and Starks (2003),) Aggrawal, Erel, Ferreira and Matos (2010),) antitakeover amendments (Brickley, Lease, and Smith (1988),) executive compensation (Hartzell and Starks (2003),) and mergers and acquisitions (Gaspar, Massa, and Matos (2005) and Chen, Harford and Li (2007)). McCahery, Sautner, and Starks (2010) report that institutional investors are increasingly involved in shareholder activism. They document that more than 50% of institutional investors are willing to vote against management at the annual meeting and to engage in discussion with management if they are dissatisfied. Coffee (1991) and Gillan and Starks (2000) suggest that institutional investors have better incentives to monitor because they cannot sell their shares of poor performing firms without depressing their stock price. In accordance with the effective monitoring view of institutional investors, they are likely to monitor and influence managers to undertake actions to increase firm value and restore profitability when faced with challenging economic times. Such pressure makes managers more likely to lay off employees. This leads to my first hypothesis:

H1: Firms with higher institutional ownership are more likely to undertake layoffs.

Institutional investors are not a homogeneous group and have differing investment horizons, investment styles and objectives. The importance of investment horizons has been documented by Bushee (1998). Bushee (1998) finds that firms with more short-term (transient) institutional investors are more likely to cut R&D spending to meet short-term projected earnings. By contrast, firms with more long-term (dedicated) institutions are less likely to engage in such myopic behavior. Chen, Harford, and Li (2007) document

that not only are independent long-term institutions more effective monitors, but they are also more likely to be associated with management withdrawing a value destroying bid and contribute to a better post-merger performance. A similar importance of investor horizon is documented by Gaspar, Masa and Matos (2005) who report that firms with short-term institutions have a weak bargaining position and receive lower premium from mergers and acquisitions.[4]

In this paper, I focus on the effect of institutional investors with different investment horizons on layoff decision. If long term institutional investors have greater incentives to support restructuring activities like layoffs that increase efficiency in the long run then they should be associated with a greater likelihood of layoffs. This leads to my second hypothesis:

H2: Long term institutional investors are associated with a greater likelihood of layoffs.

Next, I examine another aspect of institutional shareholder heterogeneity i.e., whether or not they are public pension funds. Romano (1993) suggests that public funds have been more active than other institutional investors in corporate governance. Wahal (1996), Smith (1996) and Karpoff et.al (1996) find that target companies by public pension fund improve their operating performance. Aside from a greater involvement in

[4] Several recent studies also find that institutional investor trading serve as an alternative disciplinary role for managers to be motivated to increase firm value. For example, Parrino, Sias, and Starks (2003) find that a decrease in institutional ownership is positively related to forced CEO turnover and argue that institutional selling pressure makes a board announce CEO turnover decisions. (See Admati and Pfleiderer (2008), Edmans (2009), Edmans and Manso(2009).

governance, as suggested by the above studies, public pension funds have been particularly actively involved in layoff decisions in the nineties.

New York Times (1993) report that "in demanding better returns, these corporate and public pension funds-- which own more than half the stocks in the nation -- have put pressure on companies to cut lagging operations and restructure their operations. The goal has been to increase profits and stock prices, but the cost has been the loss of thousands of jobs and a stubbornly high unemployment rate." This leads to my third hypothesis:

H3: Public pension funds are associated with a higher likelihood of layoffs.

The preference for geographically local equity in the United States has been well documented by previous literature (e.g. Coval and Moskowitz 1999, 2001, Baik, Kang and Kim 2010.) Furthermore, there is emerging literature in finance, which documents that geographic distance influences corporate labor policy. Landier, Nair and Wulf (2008) find that employees around headquarters are less likely to be laid off. Yonker (2010) also shows that local managers implement labor friendly policy such as less employee cuts. Hochberg and Rauh (2012) find that institutional investors facing political pressure make more local investment even though investments perform poorly in home states than in other states.

If local institutional investors have information advantages that facilitate access to soft information about firm profitability and performance, this may allow them to choose from a broader menu of corporate policies to address the firm's problems rather than relying simply on layoffs. This tendency to avoid local layoffs is likely reinforced by the

local social and political pressures they face. Therefore, I conjecture that local institutions are less likely to push for employee layoffs leading to my fourth hypothesis:

H4: Local institutional investors are associated with a lower likelihood of layoffs.

3. Data Description

3.1 Layoff sample

The data on layoff announcements is from a couple of sources. The data on layoffs for the period from 1983 to 2001 has been graciously provided by Kevin Hallock. This data has been analyzed in detail in Hallock (2009) and Farber and Hallock (2009). I supplement this data for the period from 2002 to 2008 by hand-collecting all public announcement of layoffs. To construct my sample of employee layoffs, I conducted a search for all the layoff announcements using keywords: "*lay off,"* "*laid off,"* "*cut jobs,"* "*eliminate jobs,"* and "*close"* in Factiva database from 2002 to 2008. From Factiva news database, I obtain not only the total number of workers laid off but also the cited reasons for the layoffs. I exclude layoff announcements when the (1) layoff is a temporary layoff; (2) layoff size is less than 100 employees; and (3) layoff firm is not a publicly-listed company on the NYSE, AMEX, and Nasdaq. Lastly, I require that the stock return and financial information be available on CRSP and COMPUSTAT. This leads to a final sample that comprises 2,034 layoff announcements. More specifically, there are 1,241 layoff announcements over the 1981 - 2001 period and 793 layoff announcements over the 2002 - 2008 period that are included in the final sample.

3.2 Non-Layoff sample

I create two control samples of firms that do not announce layoffs over the period. To construct the non-layoff sample, I first begin with all firms in CRSP- COMPUSTAT merged database. I define non-layoff firms as firms that do not announce layoffs over the 1983 and 2008 period. I find that there are 46,001 non-layoff firm years over the period. I call this the "full sample."

The second control sample consists of non-layoff firms matched to layoff firms by size and industry. I match the non-layoff control firms to layoff firms by industry (two-digit SIC code) and firm size (book value of assets.) For each layoff firm, I first identify a subset of firms that are available on CRSP and COMPUSTAT with the same two-digit SIC code and a book value between 70% and 130% of the layoff firm's book value of the asset. From these firms, I choose the firm that is closest in size to the layoff firm. With these criteria, I was able to obtain a match for 1,137 layoff announcements. I refer to these control firms as "matched sample."

3.3 Ownership Variable

I obtain data from various sources. First, data on institutional ownership is obtained from Thomson Financial's 13F filing database. This database is based on the SEC's Form 13-F, which requires institutions managing more than $100 million in equity to file a quarterly report of all equity holdings greater than 10,000 shares or $200,000 in market value. I exclude observations in which aggregate institutional ownership exceeds 100% of outstanding shares because these are likely to be errors. Data on share price and

stock returns are from CRSP. Finally, information on firm characteristics such as return on asset, leverage, and firm size are obtained from COMPUSTAT.

The first explanatory variable is the fraction of the firm that is held by institutional investors and is referred to as IO_TOT. As I study the effect of institutional investors' investment horizon on layoff decision, I need to measure the investment horizon of each institutional investor. I follow Bushee (1998, 2001,) who classifies each institutional investor in 13f filing database based on past trading behavior in terms of portfolio turnover, diversification and trading sensitivity. "Dedicated" institutions are those with large investment in firms and low portfolio turnover. In contrast, "transient" institutions have highest turnover and they follow momentum strategies. "Quasi-indexing" institutions are characterized by having diversified holdings and low turnover that is similar to the "buy and hold" strategy of the "dedicated" investors. I therefore group "dedicated" and "quasi-indexer" into one group, i.e., long-term institutional investors. IO_LONG is the fraction of firm held by these long term institutions. Hypothesis 2 states that ownership by long-term institutional investors should be positively related to the layoff decision. As transient investors are more likely to sell on bad news rather than stay and monitor the firm, the probability of layoffs should be at least less positively related to ownership by this group (referred to as IO_TRA).

Furthermore, to examine whether public pension funds are more likely to influence layoff decisions, I use the lists of public pension funds from Woidtke (2002) and Cremers and Nairs (2005). With these lists of public pension funds, I construct public pension fund ownership (IO_PUBLIC) as the fraction of the firm held by public pension funds. Ownership by the remaining institutions is referred to as IO_NON_PUBLIC.

Lastly, to examine the effect of local institutional ownership, I identify local institutions as those that are headquartered in the same three digits zip code as the firm. Local institutional ownership (IO_LOCAL) is defined as the fraction of total shares held by local institutions. Ownership by non-local institutions, referred to as IO_NON_LOCAL is the ownership by all other institutions.

3.4 Control Variables

I include several control variables that affect a firm's layoff decision from previous studies. First, I control for firm characteristics that have been shown to impact a firm's layoff decision. Specifically, I include logarithm of total assets to control for firm size (SIZE). As documented by Hallock (1998), larger firms are more likely to have excess workforce and therefore, more likely to announce layoffs.

I include leverage (LEV) because Ofek (1993) and Kang and Shivdasani (1997) find that leverage increases investors' ability to force large scale layoffs. LEV is measured by total liabilities scaled by total assets. Denis and Kruse (2000) document that poor firm performance is one of the most important reasons for layoffs. To control for this, I include both a measure of accounting performance (return on assets) as well as a measure of stock performance. Lagged return on assets (ROA) is defined as earnings before interest and tax over total asset. RET_12 is the past one-year buy and hold return for the fiscal year prior to the layoff announcement. I also include the market to book ratio (M/B) measured as the market value of equity scaled by book value of equity to control for growth opportunities.

In line with Cronqvist et. al. (2009), I include labor productivity and capital intensity to control for labor-related firm specific characteristics. Labor Productivity is defined as the natural logarithm of total sales scaled by the total number of employees. Capital intensity, proxied by the Capital to labor ratio is included to control for capital intensity and is defined as the ratio of property, plant and equipment, to the total number of employees. I also include variables to capture the extent of labor unionization. I obtain the industry unionization rate, as well as the coverage, from the Union Membership and Coverage Database[5]. The Union Membership and Coverage Database use CPS industry classifications (CIC). In order to get the equivalent SIC industry codes, I use North American Industry Classification System Code (NAICS) as a common identifier.

I also consider whether a firm is located in Right-to-Work law (RTW) state. The Right-to -Work law secures the right of employees to decide for themselves whether or not to join or financially support a union. As of December 2013, 24 states have Right-to-Work laws, mostly in the South and western plains states, where union membership is relatively weak. States without such laws are generally considered a more favorable bargaining environment for labor unions. I include 22 out of the 24 states in my sample, because my sample period ends in 2008 and other two states (Indiana, Michigan) adopted the Right-to-Work law after 2008.

Secondly, I also include a recession indicator variable from Federal Reserve Economic Data and construct a recession dummy variable (RECESSION) that captures the state of national economy.

[5] The Union Membership and Coverage Database is available at www.unionstats.com and its coverage starts from 1983 to 2013.

4. Descriptive statistics

4.1 Nature of Layoffs

Table 1 shows the distribution of layoff announcements by year from 1983 to 2008. As shown in Figure 1, the number of layoff announcements tracks unemployment rate quite closely. Table 1 and Figure 1 suggest that periods of economic downturns, which are characterized by high unemployment, also have more layoffs.

Table 2 shows that layoff announcements are seen in almost all industries. My layoff sample covers 55 industries at the two-digit SIC code level. However, there is some clustering of layoffs by industries. There are five industries which covers approximately 47 % of total layoff announcements. The most layoffs occur in Industrial Machinery and Equipment (SIC 35) followed by transportation equipment (SIC 37). Manufacturing sectors, which range from SIC 20 to SIC 39, account for 40 percent of all layoff announcements. According to Brooking report (2012), U.S. lost 41 percent of its manufacturing jobs between 1979 and 2009. Manufacturing's share of total employment fell from 13.2 percent to 8.9 percent in 2009. My layoff sample reflects this severe job loss in U.S manufacturing.

Panel A in Table 3 shows the frequency of layoff announcements per firm. 14.65 percent of firms in my layoff sample have only one layoff announcement over the time period under study. However, several firms make multiple layoffs. Panel B in Table 3 reports layoff announcements by stated reasons for layoffs. I follow Hallock (2009) in categorizing the reasons for the layoffs. I group the reason of layoffs into six categories: "reorganization," "plant closing," "slump in demand," "cost issues," "other" and "missing." As shown in Panel B, there is significant variation in the stated reason for

layoffs. The most frequently stated reason for layoff is “slump in demand” followed by “reorganization.”

In addition, Figure 2 shows that layoffs that are categorized as “slump in demand” are correlated with business cycles. This is consistent with Hallock (2009). The two pikes in Figure 2 are recessions in early 1980s and 1990s respectively. Another increase in layoffs around 2000s represents the “Dot com bubble” and the last spike shows increase in layoffs caused by “recent financial crisis.” On the other hand, layoff announcements for reorganization are increasing over time. Increase in layoffs for “reorganization” points to the change in motivation for recent layoffs from “declining in demand” to “improving efficiency” through restructuring activities.

As seen in Table 4, I report the average size of layoffs per firm and the market reaction to layoff announcements by year, recession period, and stated reason for layoffs. As seen in Panel A of Table 4, layoff firms on average reduce their workforce by 1667 employees. To estimate the magnitude of the layoff, I get the total number of employees in the firm in the fiscal year prior to the layoff from COMPUSTAT. I find that average layoff involved a 6% reduction in the total workforce of the firm.

In Panel B of Table 4, the average 11-day CAR is -0.28%. The average CAR for the 1980s is -0.05%, for 1990s is 0.34% and for 2000s is -0.77 %. Not surprisingly, I find that CARs are negative for layoffs announced during recessions and positive for non-recession periods (Panel C, Table 4). This points the importance of controlling for business cycles in the multivariate analysis.

Panel D of Table 4 reports descriptive statistics in announcement returns by the reasons that management state for employee layoffs. The reasons suggesting poor future

prospects are expected to be perceived more negatively than reasons that suggest efficiency increasing actions (Palmon, Sun and Tang (1997).) The average CAR for "reorganization" and "cost issues" is significantly positive (0.55%, 0.64% respectively) and reflects the market belief that efficiency increasing layoffs are likely to enhance firm value. On the other hand, CARs for "slump in demand" category are significantly negative. As expected, layoffs categorized in "slump in demand" serve as a negative signal that firms are facing difficulty in selling products.

4.2 Firm Characteristics

In this section, I compare the firm characteristics between layoff firms and non-layoff firms in the full sample. As seen in Panel A of Table 5, layoff firms are larger in size, have more leverage, and more employees. Layoff firms, not surprisingly, have lower accounting performance (ROA) as well as stock performance (past 12 month stock returns). Layoff firms have lower capital intensity than non-layoff firms. Lower capital intensity is likely to lower labor productivity as more capital makes labor effective. Consistent with this argument, I find lower labor productivity for layoff firms.

Firms operating in industries with lower unionization rates are more likely to have layoffs than firms in industries with higher unionization rates. Also, it is worth noting that layoff firms are located in states more likely to be Right-to-Work (RTW) states than non-layoff firms. In other words, firms are located in the Right-to-Work (RTW) states have greater bargaining power of unions and it facilitates firms to initiate layoffs when they are necessary.

When examining the characteristics of the matched sample, not surprisingly, size is no longer different between the layoff and control firms (See Panel B of Table 5). There are also no significant differences between the two groups in leverage and returns on assets. The layoff sample has higher number of employees and also has lower stock returns. As firms' characteristics are important I will control for these in my multivariate analysis.

4.3 Institutional Ownership Characteristics

In this section, I examine the institutional ownership, and its composition for layoff firms and the control sample. The average institutional ownership for layoff firms is 61%. This is significantly higher than the 40% seen for non-layoff firms (see Panel A, Table 6). A similar pattern is also seen in the composition of institutional ownership: both the fraction held by long-term investors (IO_LONG) and that held by transient investors (IO_TRA) are significantly higher for layoff firms relative to control firms. A similar picture emerges when comparing layoff firms to matched-control firms. Total institutional ownership (IO_TOT), as well as the fraction held by long-term investors (IO_LONG) and that held by transient investors (IO_TRA) is significantly higher for layoff firms relative to industry and size matched firms (Panel B, Table 6).

Next, I compare ownership characteristics between public institutional owners and non-public pension fund. In the full sample, public pension funds own 2 % of layoff firms, which is significantly higher than 1 % held in control firms (Panel A, Table 6). In the matched sample, public pension ownership is also significantly higher in layoff firms. Similarly, ownership by non-public pension fund is also significantly higher in layoff

firms relative to control firms. In line with my hypothesis, I find that the average non-local institutional ownership is significantly higher in the layoff sample relative to the control sample (54% versus 36%).

Panel C in Table 6 reports average institutional ownership by reasons of layoffs. The table shows that efficiency increasing layoff sample has generally higher institutional ownership than declining demand layoff sample. Palmon, Sun, Tang (1997) present two hypotheses: an efficiency hypothesis and a declining investment hypothesis. Especially, the efficiency hypothesis proposes a zero or positive stock price response to a layoff announcement where investors view layoffs as a mechanism leading cost savings and more efficient processes that can create the value. I find that long-term institutional ownership, public pension fund ownership is higher in efficiency layoff sample. This result is consistent with the conjecture that monitoring and active institutions are more positively related to layoffs that creates the values.

Results are qualitatively similar for the matched sample. However, in this univariate comparison I do not control for other important firm characteristics. I report empirical results controlling for these firm characteristics in the next section.

5. Empirical Model for Layoffs

Previous univariate analyses have provided preliminary supportive evidence for the positive relationship between institutional ownership and layoffs. In this section, I examine the role of institutional investors in layoff decisions in multivariate settings.

5.1 Econometric Model

I use two different samples to test whether institutional investors motivate managers to make a layoff decision. First, I use logistic regression on the full sample of 2,034 layoff announcements and 46,001 non layoff firm years to estimate the likelihood of a layoff. The dependent variable is an indicator variable that is equal to one if the firm announced a layoff. I also include all the control variables discussed in the previous section.

Second, I use the sample of 1,137 layoff firms and control firms matched on industry and size. For the matched sample, I used conditional logistic regressions, as suggested by Palepu (1986) and Agrawal and Chadha (2005) because logistic models are misspecified and give incorrect estimates for matched-samples.

A conditional logistic model for a layoff announcement is shown as follows:

$$\Pr\left(Layoff = 1 \middle| IO_{i,t}, X_i\right) = \frac{\exp(\alpha_i + \beta IO_{i,t} + \gamma X_i)}{1 + \exp(\alpha_i + \beta IO_{i,t} + \gamma X_i)}$$

where *Layoff* is a dummy variable equal to one when a firm announces employee layoffs in year t, *IO* is the fraction of the firm held by institutional owners, and X_i includes all control variables and governance characteristic that are likely to impact the layoff decision.

5.2 Empirical Results

5.2.1 The likelihood of layoff and institutional ownership

Full Sample Results

Main results of this analysis are reported in Table 7. Table 7 presents logistic regression of the propensity of layoff on institutional ownership with controls for other firm characteristics as well as year and industry effects. I begin by discussing the results of the logistic regression in the full sample of layoff and control firms. As seen in Model 1 in Table 7, the results support hypothesis 1 that the propensity to lay off employees is greater in firms with high institutional ownership. The coefficient on the control variables also confirms the findings in prior empirical work. Larger firms, firms with poor accounting and stock market performance, those with less growth opportunities, and firms with high debt levels have a higher likelihood of layoffs. The coefficients for both labor productivity and capital intensity are negative and significant, indicating that firms with higher labor productivity and capital intensity are associated with lower layoffs. The coefficient of Right to Work dummy is positive and significant. Firms located in right-to-work states are more likely to lay off employees. As the bargaining power of labor is weaker in these states, it is easier for firms to reduce worker benefits and lay off employees.

Model 2 of Table 7 provides results for institutional ownership classified by investment horizon. I divide total institutional ownership into long-term institutional ownership (IO_LONG) and transient institutional ownership (IO_TRA) to examine the effect of investor horizon on the propensity to lay off employees. Consistent with hypothesis 2, firms with a high proportion of ownership by long-term investors are significantly more likely to initiate layoffs. The results also indicate that short-term institutional investors have no incremental impact on the likelihood of layoffs.

Next, in order to study the active role of large public pension funds and its effect on layoffs, I divide total institutional ownership into that held by public institutions (IO_PUBLIC) and that held by non-public institutions (IO_NON_PUBLIC). The coefficient of IO_PUBLIC is positive and significant (see Model 3, Table 7). This result suggests that increase in ownership by public pension funds creates more active role that is likely to result in layoffs in line with hypothesis 3.

In model 4, I investigate whether proximity to institutional investors influences corporate labor policy. Consistent with my prediction, I find that firms held by more local institutional investors are less likely to lay off employees and firms held by more non-local institutional investors are more likely to lay off employees.

In Table 8, I examine if the high likelihood of layoffs can be seen primarily during difficult economic times. I look at the interaction between institutional ownership (long-term, short-term) and three different proxies for difficult economic times. The first variable, RECESSION, captures economy wide downturns. Specifically, it takes the value one when the economy is in a recession as captured by the U.S. recession indicator variables from the FRED (Federal Reserve Economic Data) database. Second, I capture performance at the industry level. I create a dummy variable DISTRESS that takes the value if the industry is in distress, i.e., the industry's median sales growth is negative for the past three consecutive years. Lastly, I use firm specific performance as captured by the past 12 month stock performance (RET_12). As seen in Model 1 of Table 8, the coefficient of RECESSION is positive and significant. Not surprisingly, there are higher layoffs during recessions. I include the interaction term between the recession variable and institutional ownership to see whether the response of long-term institutional

investors to recessions differs from short-term institutional investors. The interaction terms show that holding IO_LONG, IO_TRA fixed and comparing recession and non-recession period have similar effect; both firms with long-term and short-term investors increase in layoffs as a response to recession. Nevertheless, the effect of long-term institutional investors on layoff during the recession is greater than the effect of short-term institutional investors.

Next, I include DISTRESS, the dummy for industry wide economic downturns. The results indicate higher likelihood of layoffs in industry downturns. The interaction terms show that the effect of long-term institutional investors on layoffs is increased in industry downturns.

Lastly, I study the response of family firm to firm specific underperformance. As seen in Model (3) the coefficient of RET_12 is negative and significant. Irrespective of whether they are long-term or short-term investor, an increase in the ownership of each investor is related to an increase in layoff when their past returns are low.

The previous results generally report that an increase in public pension fund ownership is positively related to higher layoffs. In Table 9, I include the interaction between institutional ownership (public pension, non-public pension) and three different proxies for difficult economic times to examine whether an increase of public pension fund and non-public pension fund ownerships have different impact on firm's layoff decision especially during the difficult economic time. I find that even though firms announce more layoffs during the recession period, public pension funds are less likely to be associated with layoffs during recessions. As seen in Specification 1, the interaction of the recession dummy and IO_PUBLIC is negative and significant. Possible reason for

this negative estimate is that public pension funds are likely to be supervised by state officials and are likely to be sensitive to political pressure not to lay off employees during recessions. However, the interaction terms in model 2 and 3 show that an increase of the ownership by public pension funds leads to more layoff in industry downturns and when firm stock performance is bad. Furthermore, the interaction between local institutional ownership and all three proxies for difficult economic time is not significant. Local institutions' preference for lower layoffs in local firms does not change during economic difficult times. (See Table 10)

In Table 11, I examine if institutional investors impact the magnitude or severity of the layoffs along with their propensity. To study the role of institutional owners on the depth of the layoffs, I use the fraction of total employees that were laid off as the dependent variable in a Tobit estimation - the results of which are reported in Table 11. The estimate results using Tobit regression presents that the magnitude of layoffs is increasing in the ownership by institutional investors. Next, the results provide evidence that the effect of institutional ownership is relatively different depending on institutional investor's type. I find that magnitude of layoffs is increasing in the ownership by long term investors (See Column 2). In the next specifications (3) of Table 11, I conduct the same analysis with public pension ownership. I find that the magnitude of the layoff is also increasing in the ownership by public pension funds. Column (4) reports the estimation result of the magnitude of layoff with local ownership. The results indicate that firms with higher local institutional ownership lay off fewer employees. Overall, firms with long-term, public pension fund and non-local institutional ownership tend to lay off more employees.

5.2.2 Matched Sample Results

My results using the size-industry matching sample are reported on Table 12. The results from the matching sample are in line with the results above: The layoff propensity increases with total institutional investor's ownership. Also, firms with more long-term institutional investors are more likely to have layoffs. The effect of public pension fund ownership on layoff is also positive and significant and is larger than the estimated effect of non-public pension ownership on layoffs. I also find that local institutional investors are less likely to initiate layoffs in local firms, whereas non-local institutional investors are likely to initiate layoffs in local firms. The propensity to layoff employee decreases when local firms have more local and long-term institutional ownership but it increases when local firms have more non-local and long-term institutional ownership. Even though I use size-industry matching, large firms in terms of both total asset and number of employee tend to announce more layoffs. Poor performance also drives firms towards the layoff decision.

Overall, the results in both the full sample and the matched sample show that the propensity to lay off employee increases in total institutional ownership, especially in ownership by long term institutions, public pension funds and non-local institutions. This finding is consistent with the view that these institutions have better incentives to monitor and influence management to initiate layoffs.

5.2.3 Endogeneity of Institutional Ownership

In my analysis to this point, I treat institutional ownership as an exogenous variable. However, Demsetz and Lehn (1985) argue that ownership structure is

endogenously determined by firm features. My evidence so far, suggests a positive relation between institutional ownership and firm's layoff decision. This raises the question of whether the previously-discovered relationship between institutional ownership and the layoffs could be spurious if both are determined by firm-level characteristics. Specifically, institutional ownership is affected by firm size, financial performance, market-to-book ratio, systematic risk, idiosyncratic risk, and layoff decision is also associated with firm size, market-to-book ration, and financial performance.

To deal with endogeneity concern of institutional ownership, I use propensity score matching to create a sample of control firms.[6] In Table 13, I re-estimate the regressions shown in Table 10 using the propensity-matched sample. Even when compared to firms that are very similar, institutional ownership variables still remain significantly positively related to layoff decisions. Specifically, I still find that firms with high institutional ownership exhibit greater layoffs than do firms with low institutional ownership. Ownership by long-term, public pension and non-local institutional investors is also significantly positively related to layoffs.

5.2.4 Institutional ownership and abnormal stock return

The results so far show that the presence of institutional investors, in particular long-term investors, public pension funds and non-local institutions are positively associated with layoffs. In this section, I examine how the market reacts to this role of institutional investors in facilitating layoffs.

[6]The propensity score is obtained from a logit regression of High IO on observable firm characteristics, and the control group is formed using the closet covariate (nearest neighbor estimator with caliper 0.01) values.

If the market perceives layoffs by firms with high institutional investors as positively impacting shareholder value, this layoff announcement should lead to higher abnormal returns. To examine this, I calculate the 11 day, [-5, 5] CARs to the layoff announcements. The coefficient of IO_TOT is positive and significant, implying that greater institutional ownership in layoff firms is associated with higher abnormal returns on announcement. In particular, it is the presence of the long term investors (IO_LONG) that is associated with significantly higher CARs whereas the presence of short-term investors (IO_TRA) is associated with lower CARs (see Column 2, Table 14). This is consistent with the hypothesis that market perceives layoffs resulting from the greater monitoring by long-term institutional investors more positively.

In column (3) of Table 14, a similar market reaction is also seen for public pension funds. The market reaction is significantly higher in the presence of public pension funds. Lastly, in column (4), I examine the market reaction to layoffs in the presence of local institutional investors. As seen earlier, local institutions are reluctant to lay off employees and possibly consent to it only when the firm is in dire circumstances. Consistent with this, the market reaction to layoffs is negative in the presence of local institutional ownership. As non-local institutional ownership faces little social and political pressure, it is more likely to be associated with efficient layoff decisions. In line with this, the market reaction to layoff announcements in the presence of non-local institutional ownership is positive and significant.

In summary, this positive relation between institutional ownership and market reaction supports the views that monitoring incentives of institutional investors are

positively related to the likelihood of layoff and those layoff announcements under the guidance of these institutional investors increase shareholder wealth.

5.2.5 Calendar-Time Portfolio Approach

If monitoring is causing the better performance of firms with high institutional holdings after layoffs, I would expect these types of firms to have a better performance advantage.

In order to test post-layoff long-run performance depending on institutional holdings, I use the technique of calendar time portfolio approach. The calendar time portfolio approach was first used by Jaffe (1994) and Mandelker (1974) and is strongly advocated by Fama (1998).

Based on previous four quarter-averaged institutional ownership, all layoff firms are grouped into institutional ownership quartiles. Thus, Q1 includes all layoffs across my sample period that had the lowest institutional ownership in a given year, while Q4 includes all the layoffs across the sample period that had the highest institutional ownership in a given year. Table 15 shows the estimates from calendar time portfolio event study methodology for the high institutional quartile (Q4) and low institutional quartile (Q1).

For each calendar month, I compute the return of an equally-weighted portfolio of companies that have announced layoffs in the last 12 months. The return of this "layoff event portfolio" is denoted R_{lt}, where l indicates the portfolio comprised of companies announcing layoffs within the prior 12 month period. The portfolios are rebalanced

monthly because companies with new layoff events are added in any given month, while firms without a layoff event within the last 12 months are dropped.

At month t, $CTAR_t$ is the average abnormal returns for all sample firms that have experienced a layoff within the prior 12 months: $CTAR_t = R_{l,t} - E(R_{l,t})$ where $R_{l,t}$ is the monthly return on the portfolio of event firms at time t, and $E(R_{l,t})$ is the expected return on the event portfolio at time t. The Fama-French three factor model is used to compute the abnormal return of this portfolio.

$$R_{l,t} - R_{ft} = \alpha_i + \beta_i\left(R_{m,t} - R_{f,t}\right) + s_i SMB_t + h_i HML_t + \varepsilon_{i,t}$$

Where $R_{f,t}$ is the one-month Treasury bill return and $R_{m,t}$ is the return on the CRSP value-weighted portfolio of all NYSE, AMEX, and Nasdaq stock. SMB is the difference in the return on portfolios of small and big stocks, and HML is the difference in the return of portfolios of high- and low- BE/ME stocks.

Holding portfolio of layoff stocks with high institutional quartile (Q4) has positive and significant Jensen's alpha (0.0031) while portfolio of stock with low institutional quartile (Q1) has negative and insignificant alpha (-0.0082). This result provides a supportive evidence of my findings that monitoring institutions help firm to create shareholder value, especially when monitoring institutions are more compromised in a firm's ownership structure.

6. Conclusion

This paper examines the relationship between layoffs and institutional ownership to analyze the role of institutional investors in layoff decisions. The evidence is consistent with the view that institutional investors influence management to significantly increase

the likelihood of layoffs. The logistic regression results indicate that institutions with more monitoring incentives (large and long-term institutional investors) are associated with a greater likelihood of a layoff decision. Furthermore, the market perceives the impact of institutional ownership by long term investors on layoffs positively. In contrast, layoffs initiated by firms with large stakes of short term institutions are associated with a negative market reaction on announcement. The propensity of layoffs also increases with high public pension fund ownership and with non-local institutional ownership. A similar positive market reaction is also seen in the presence of public pension funds.

This paper makes two contributions to the literature. First, a unique hand-collected layoff data allows me to add recent layoffs to cover a long time period that spans from 1981 to 2008. This study adds to the existing layoff literature by examining the relationship between institutional ownership and layoff decisions. To my knowledge, this is the first paper that documents that both the level and the nature of institutional investors matter in the layoff decision.

Second, this paper contributes to the literature on the monitoring role of institutional investors by showing the positive relationship between layoffs, institutional ownership, and market reaction to layoff announcements. Overall, this paper provides evidence in support of the notion that layoffs undertaken in the presence of long term institutions, public pension funds and non-local institutions are likely to increases firm value.

Figure 1: Distribution of Layoffs by Year

This figure shows that U.S. unemployment rate and percentage of layoff announcements from 1983 to 2008. The U.S. unemployment rate (UR) is from Federal Reserve Economic Data(FRED) and the percentage of layoff announcements for each year is calculated from all 2,034 layoff announcements in the full sample

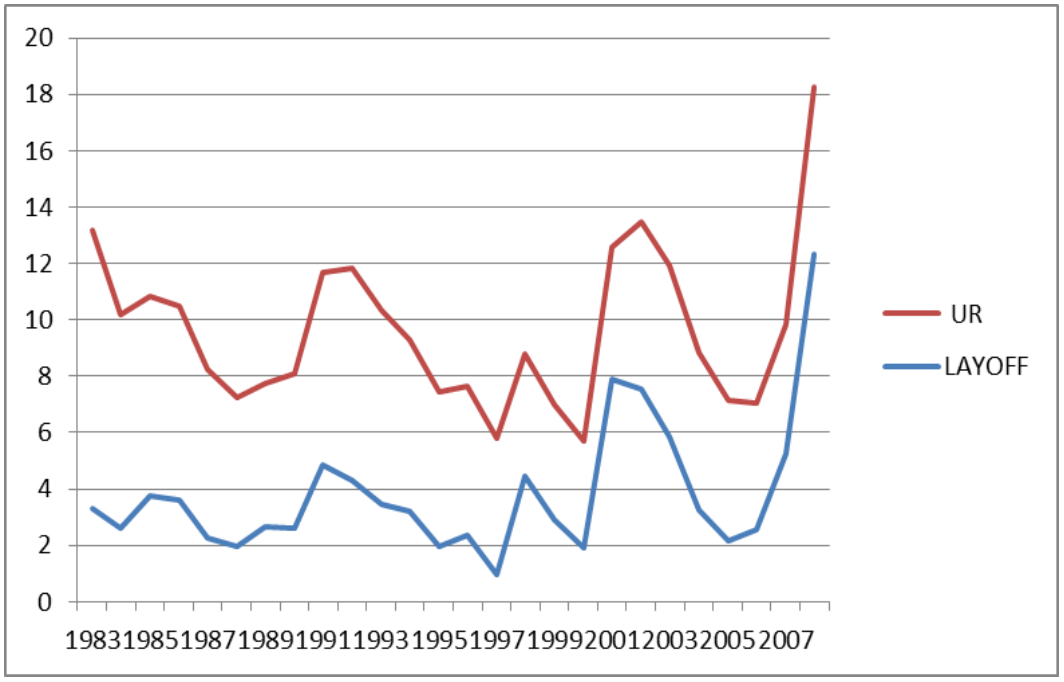

Table 1: Distribution of Layoffs by Year

Year	Freq.	Percent
1983	67	3.29
1984	53	2.61
1985	76	3.74
1986	73	3.59
1987	46	2.26
1988	40	1.97
1989	54	2.65
1990	53	2.61
1991	99	4.87
1992	88	4.33
1993	70	3.44
1994	65	3.2
1995	40	1.97
1996	48	2.36
1997	20	0.98
1998	91	4.47
1999	59	2.9
2000	39	1.92
2001	160	7.87
2002	154	7.57
2003	119	5.85
2004	66	3.24
2005	44	2.16
2006	52	2.56
2007	107	5.26
2008	251	12.34
Total	2,034	100

Table 2: Distribution of Layoffs by Industry

SIC2	Industry Name	Freq.	Percent
35	Industrial Machinery and Equipment	254	12.49
37	Transportation Equipment	250	12.29
36	Electrical and Electronic Equipment	186	9.14
28	Chemicals and Allied products	151	7.42
73	Business Services	131	6.44
48	Communications	111	5.46
38	Instruments and Related Products	99	4.87
20	Food and Kindred Products	93	4.57
33	Primary Metal Industries	69	3.39
26	Paper and Allied Products	66	3.24
30	Rubber and Miscellaneous Plastics	59	2.9
99	Nonclassifiable Establishments	50	2.46
27	Printing and Publishing	50	2.46
29	Petroleum and Coal Product	40	1.97
62	Security, Commodity Brokers	40	1.97
49	Electric, Gas, Sanitary Services	32	1.57
34	Fabricated Metal Products	30	1.47
53	General Merchandise Stores	28	1.38
25	Furniture and Fixture	25	1.23
63	Insurance Carriers	24	1.18
39	Miscellaneous Manufacturing Industries	24	1.18
40	Railroads	20	0.98
32	Stone, Clay, Glass and Concrete Products	17	0.84
24	Lumber and Wood Products	15	0.74
61	Nondepository Institutions	14	0.69
13	Oil and Gas Extraction	13	0.64
50	Wholesale Trade-Durable Goods	13	0.64
56	Apparel and Accessory Stores	12	0.59
45	Transportation by air	11	0.54
54	Food stores	11	0.54
59	Miscellaneous Retail	10	0.49
22	Textile Mill Products	9	0.44
75	Autorepairs, Service and Parking	9	0.44
12	Coal Mining	7	0.34
57	Furniture and Home Furnishing Stores	7	0.34
52	Eating and Drinking Places	6	0.29
23	Apparel and Other Textile Products	5	0.25
10	Metal Mining	5	0.25
51	Wholesale Trade-Non-Durable Goods	5	0.25
55	Automotive Dealers and Gasoline Service Stations	5	0.25
58	Eating and Drinking Places	5	0.25

Table 3: Descriptive Statistics on Layoff Sample

Panel A: Number of Layoff Announcements

# of announcement	Obs	# of firms	Percentage
1	298	298	14.65%
2	208	104	10.23%
3	144	48	7.08%
4	92	23	4.52%
5	140	28	6.88%
>5	1,152	100	56.64%
Total	2,034	601	100.00%

Panel B: Layoff Announcements by Reasons

	Category						
Year	Organization	Plant Closing	Slump in Demand	Cost Issue	Other	Missing	Total
1983	5	3	35	13	9	2	67
1984	8	1	19	13	10	2	53
1985	18	4	34	15	5	0	76
1986	19	8	22	10	14	0	73
1987	15	2	10	14	4	1	46
1988	10	0	12	10	7	1	40
1989	24	2	13	11	2	2	54
1990	11	1	24	12	5	0	53
1991	18	12	41	17	8	3	99
1992	24	7	30	21	3	3	88
1993	20	5	21	16	6	2	70
1994	38	1	8	12	2	4	65
1995	14	2	8	12	4	0	40
1996	15	4	10	11	6	2	48
1997	11	3	1	2	3	0	20
1998	23	7	29	21	10	1	91
1999	15	7	13	17	7	0	59
2000	21	6	2	9	1	0	39
2001	14	20	80	30	16	0	160
2002	32	21	40	47	5	9	154
2003	22	19	18	47	4	9	119
2004	21	14	9	12	4	6	66
2005	20	5	3	9	4	3	44
2006	14	8	8	15	5	2	52
2007	34	22	23	22	3	3	107
2008	58	26	69	71	4	23	251
Total	524	210	582	489	151	78	2,034

Figure 2a: Frequency of layoff announcements for "Slump in Demand"

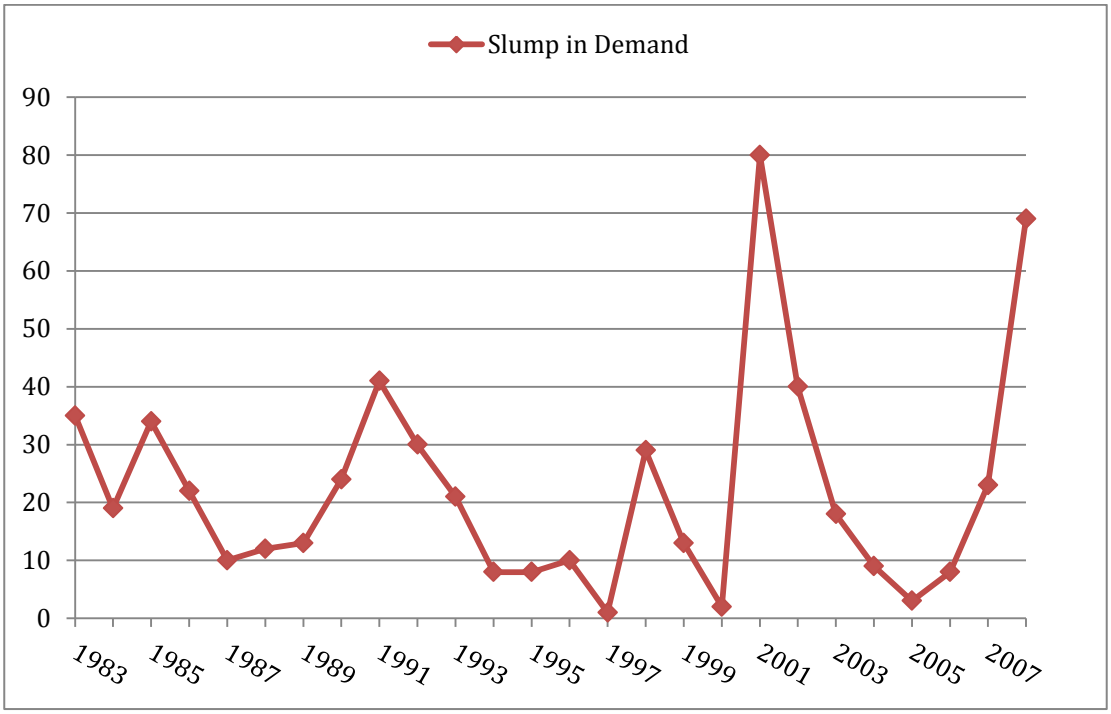

Figure 2b: Frequency of layoff announcements for "Reorganization"

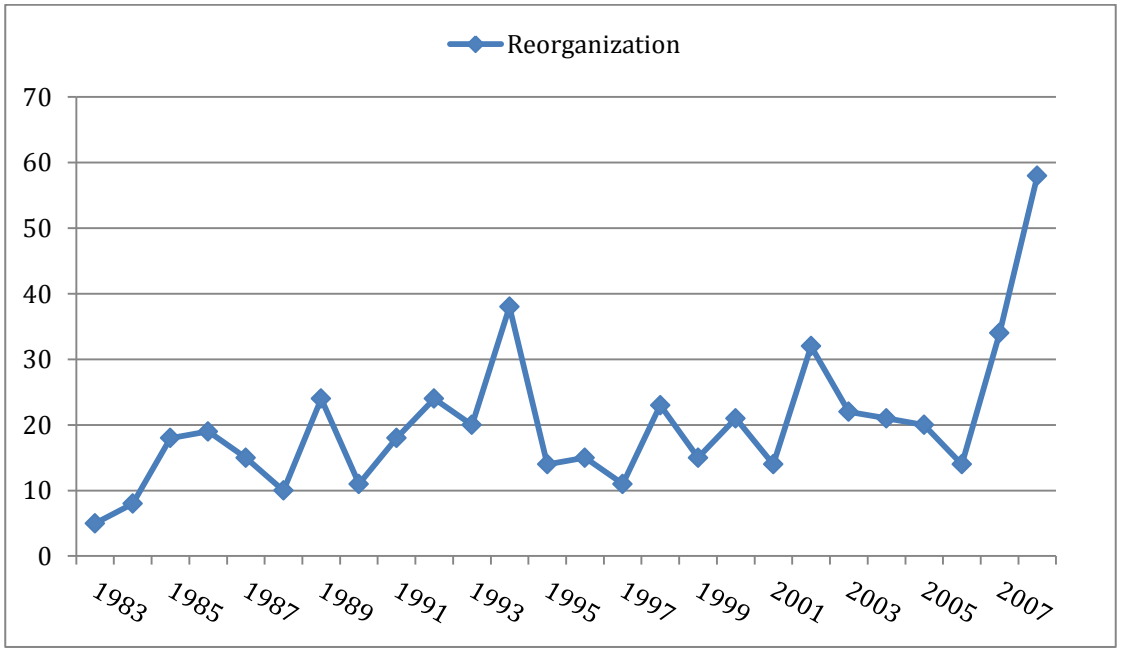

Table 4: Descriptive Statistics of Layoff Sample and Cumulative Abnormal Returns

Pannel A: Average Percentage of Layoff

Variable	Obs	Mean	Median	S.D.	1st Quartile	3rd Quartile
Number of laid off employee	2,034	1,667	633	3060.65	250	1,500
Layoff Percent	2,034	6.00%	2.50%	24.32	0.28%	6.60%

Panel B: Distribution of 11-day Cumulative Abnormal Returns (CAR) by Year

Period	Obs	CAR[-5,5]	t-stat
Total (1981-2008)	2,034	-0.28%	-4.821***
1981-1989	409	-0.05%	-0.151
1990-1999	633	0.34%	1.216
2000-2008	992	-0.77%	-2.490**

Panel C: Distribution of 11-day Cumulative Abnormal Returns (CAR) by Recession

	Obs	CAR[-5,5]	t-stat
Recession	412	-0.88%	-1.932*
Non-Recession	1,622	-0.13%	-0.62

Panel D: Distribution of 11-day Cumulative Abnormal Returns (CAR) by Reason

Categories	Obs	CAR[-5,5]	t-stat
Reorganization	524	0.55%	1.708*
Plant Closing	210	-0.76%	-1.306
Slump in Demand	582	-1.37%	-3.730***
Cost Issues	489	0.64%	1.681*
Other	150	-0.40%	-0.676
Missing	79	-2.00%	-2.358**

Table 5: Summary Statistics on Firm Characteristics

Average firm characteristics are shown for layoff and nonlayoff firms. The layoff sample consists of firms announcing layoffs in top news publications from 1981 to 2008. Non-layoff control firms are firms that do not announce layoffs and are similar to layoff firms by size and industry or industry and performance. Size and industry matched-control sample is created by matching for industry (two-digit SIC code) and size (book value of the asset. Firm size (SIZE) is the log of total assets. Leverage (LEV) is defined as total liabilities (LT) over total assets. Market to book ratio (M/B) is market value of equity divided by book value of equity. Market value of equity is calculated as the market value of equity (PRCC_F* CSHO). The book value of equity is (CEQ). EMP is the number of employee of firms. ROA is return on assets which is defined as earnings before interest and tax over total asset. Stock performance (RET_12) is one-year holding-period return before layoff The difference in means between layoff and non-layoff firms is tested using *t*-test. All variables are measured at the fiscal year-end before layoffs. ***, **, and * denote statistical significance at 1%, 5% and 10% levels

Pannel A: Full Sample

	Layoff Firms		Non-layoff Firms		
Variable	N	Mean	N	Mean	t-stat
SIZE	2,034	8.56	46,001	5.24	82.05***
LEV	2,034	0.61	46,001	0.46	27.83***
M2B	2,034	2.73	46,001	2.75	-0.39
EMP	2,034	3.37	46,001	0.02	89.26***
ROA	2,034	0.1	46,001	0.13	0
RET_12	2,034	-0.03	46,001	0.17	-15.04***
LABOR_PRODUCT	2,034	287.85	46,001	291.27	-0.21
CAPITAL_LABOR	2,034	191.3	46,001	310.65	-2.71***
HIGH_UNION	2,034	0.51	46,001	0.62	-9.96***
RTW	2,034	0.29	46,001	0.2	8.62***

Pannel B: Matched Sample

	Layoff Firms		Non-layoff Firms		
Variable	N	Mean	N	Mean	t-stat
SIZE	1,137	8.75	1,137	8.72	0.33
LEV	1,137	0.61	1,137	0.6	0.91
M2B	1,137	3.22	1,137	2.94	-0.44
EMP	1,137	43.47	1,137	36.07	3.48***
ROA	1,137	0.13	1,137	0.13	-0.87
RET_12	1,137	-0.06	1,137	0.07	-7.04***
LABOR_PRODUCT	1,137	339	1,137	366.73	-1.15
CAPITAL_LABOR	1,137	200	1,137	480.76	-1.61
HIGH_UNION	1,137	0.46	1,137	0.7	-12.05***
RTW	1,137	0.2	1,137	0.15	3.53***

Table 6: Summary Statistics on Institutional Ownership Characteristics

Average ownership characteristics are shown for layoff and nonlayoff sample during the time period. The layoff sample consists of firms announcing layoffs in top news publications from 2002 to 2008. Non-layoff control firms are firms that do not announce layoffs and are similar to layoff firms by size and industry or industry and performance. Size and industry matched-control sample is created by matching for industry (two-digit SIC code) and size (book value of the asset). Industry and performance matched-control sample is created by matching for industry (two-digit SIC code) and ROA. Total institutional ownership variable (IO_TOT) is the fraction of the firm held by all institutional investors. Institutional ownership is further classified by investment horizons based on Bushee (2001). IO_LONG is the fraction of the firm held by long-term institutional investors. IO_TRA is the fraction of the firm held by short-term (transient) investors. The institutional ownership variable is further classified by whether it is public pension fund or not. IO_PUBLIC: the fraction of the firm held by public pension fund. IO_NON_PUBLIC: the fraction of the firm held by non-public pension fund. ***, **, and * denote statistical significance at 1%, 5% and 10% levels

Pannel A: Full Sample

	Layoff Firms		Non-Layoff Firm		
Variable	Obs	Mean	Obs	Mean	t-stat
IO_TOT	2,034	0.61	46,001	0.4	33.34***
IO_LONG	2,034	0.47	46,001	0.29	36.62***
IO_TRA	2,034	0.13	46,001	0.1	13.42***
IO_PUBLIC	2,034	0.02	46,001	0.01	37.25***
IO_NON_PUBLIC	2,034	0.59	46,001	0.39	32.19***
IO_LOCAL	2,034	0.009	46,001	0.006	7.28***
IO_NON_LOCAL	2,034	0.54	46,001	0.36	28.82***

Pannel B: Matched Sample

	Layoff Firms		Non-Layoff Firm		
Variable	Obs	Mean	Obs	Mean	t-stat
IO_TOT	1,137	0.62	1,137	0.43	15.80***
IO_LONG	1,137	0.47	1,137	0.32	15.79***
IO_TRA	1,137	0.14	1,137	0.1	7.80***
IO_PUBLIC	1,137	0.02	1,137	0.01	19.19***
IO_NON_PUBLIC	1,137	0.6	1,137	0.41	15.33***
IO_LOCAL	1,137	0.01	1,137	0.01	2.71***
IO_NON_LOCAL	1,137	0.55	1,137	0.37	14.38***

Pannel C: Institutional Ownership by Reason of Layoffs

	Layoff Firms		Non-Layoff Firm		
Variable	Obs	Mean	Obs	Mean	t-stat
IO_TOT	1,013	0.62	582	0.6	2.17**
IO_LONG	1,013	0.48	582	0.45	2.87***
IO_TRA	1,013	0.13	582	0.13	-0.48
IO_PUBLIC	1,013	0.03	582	0.02	2.44**
IO_NON_PUBLIC	1,013	0.59	582	0.57	2.05**
IO_LOCAL	1,013	0.01	582	0.01	0.31
IO_NON_LOCAL	1,013	0.54	582	0.52	2.16**

Table 7: Logistic regression of likelihood of layoff on firm characteristics (Full Sample)

This table presents the results of logistic regression of the likelihood that a firm announces employee layoffs in full sample. Total institutional ownership variable (IO_TOT) is the fraction of the firm held by all institutional investors. Institutional ownership is further classified by investment horizons based on Bushee (2001). IO_LONG is the fraction of the firm held by long-term institutional investors. IO_TRA is the fraction of the firm held by short-term (transient) investors. SIZE is the natural log of total assets. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. ROA is return on assets which is defined as earnings before interest and tax over total asset. RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. EMP is the number of employee of firms from COMPUSTAT. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF	(2) LAYOFF	(3) LAYOFF	(4) LAYOFF
IO_TOT	1.097***			
	(0.165)			
IO_LONG		1.562***		
		(0.215)		
IO_TRA		-0.102		
		(0.393)		
IO_PUBLIC			20.962***	
			(2.146)	
IO_NON_PUBLIC			0.581***	
			(0.179)	
IO_LOCAL				-5.230***
				(1.232)
IO_NONLOCAL				1.065***
				(0.164)
SIZE	0.749***	0.743***	0.753***	0.768***
	(0.031)	(0.031)	(0.031)	(0.031)
LEV	0.619***	0.623***	0.769***	0.714***
	(0.177)	(0.178)	(0.180)	(0.178)
M/B	-0.063***	-0.062***	-0.060***	-0.062***
	(0.017)	(0.017)	(0.016)	(0.016)
ROA	-3.689***	-3.648***	-3.673***	-3.721***
	(0.378)	(0.382)	(0.380)	(0.376)
RET_12	-1.647***	-1.643***	-1.626***	-1.637***
	(0.126)	(0.129)	(0.127)	(0.125)
EMP	0.840***	0.828***	0.809***	0.834***
	(0.032)	(0.032)	(0.032)	(0.032)
LABOR PRODUCTIVITY	-0.00017**	-0.00017**	-0.00019**	-0.00019**
	(0.000)	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00015**	-0.00016**	-0.00018**	-0.00018**
	(0.000)	(0.000)	(0.000)	(0.000)
HIGH_UNION	0.046	0.038	0.067	0.094
	(0.091)	(0.091)	(0.091)	(0.092)
RTW	0.549***	0.550***	0.529***	0.580***
	(0.101)	(0.101)	(0.101)	(0.102)
Constant	-7.801***	-7.751***	-7.841***	-7.787***
	(0.287)	(0.287)	(0.294)	(0.282)
TEST For IO_PUBLIC==IO_NON_PUBLIC			9.27	
TEST For IO_LOCAL==IO_NONLOCAL				-5.08
Observations	48,035	48,035	48,035	48,035
Pseudo-R^2	0.542	0.543	0.546	0.544

Table 8: Logistic regression of likelihood of layoff on firm characteristics (Full Sample)

This table presents the results of logistic regression of the likelihood that a firm announces employee layoffs in full sample. Total institutional ownership variable (IO_TOT) is the fraction of the firm held by all institutional investors. Institutional ownership is further classified by investment horizons based on Bushee (2001). IO_LONG is the fraction of the firm held by long-term institutional investors. IO_TRA is the fraction of the firm held by short-term (transient) investors. SIZE is the natural log of total assets. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. ROA is return on assets which is defined as earnings before interest and tax over total asset. RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. EMP is the number of employee of firms from COMPUSTAT. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF	(2) LAYOFF	(3) LAYOFF
RECESSION	0.831***		
	(0.206)		
IO_LONG x RECESSION	2.099**		
	(1.001)		
IO_TRA x RECESSION	1.668***		
	(0.610)		
DISTRESS		0.671***	
		(0.109)	
IO_LONG x DISTRESS		0.837*	
		(0.454)	
IO_TRA x DISTRESS		-0.837	
		(0.765)	
IO_LONG x RET_12			-2.205***
			(0.518)
IO_TRA x RET_12			-1.902*
			(1.018)
IO_LONG	1.268***	1.623***	1.535***
	(0.233)	(0.217)	(0.213)
IO_TRA	-0.358	0.041	-0.228
	(0.416)	(0.396)	(0.395)
SIZE	0.755***	0.747***	0.749***
	(0.031)	(0.031)	(0.031)
LEV	0.605***	0.651***	0.586***
	(0.178)	(0.178)	(0.179)
M/B	-0.062***	-0.059***	-0.059***
	(0.017)	(0.016)	(0.016)
ROA	-3.810***	-3.434***	-3.738***
	(0.384)	(0.394)	(0.389)
RET_12	-1.624***	-1.641***	-1.282***
	(0.129)	(0.127)	(0.139)
EMP	0.828***	0.825***	0.831***
	(0.032)	(0.032)	(0.032)
LABOR PRODUCTIVITY	-0.00017*	-0.00016*	-0.00016*
	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00016**	-0.00018**	-0.00016**
	(0.000)	(0.000)	(0.000)
HIGH_UNION	0.042	0.047	0.036
	(0.091)	(0.091)	(0.092)
RTW	0.552***	0.556***	0.556***
	(0.101)	(0.101)	(0.102)
Constant	-7.703***	-8.107***	-7.889***
	(0.287)	(0.291)	(0.284)
Observations	48,035	48,035	48,035
Pseudo-R^2	0.546	0.545	0.545

Table 9: Logistic regression of likelihood of layoff on firm characteristics (Full Sample)

This table presents the results of logistic regression of the likelihood that a firm announces employee layoffs in full sample. Total institutional ownership variable (IO_TOT) is the fraction of the firm held by all institutional investors. Institutional ownership is further classified by investment horizons based on Bushee (2001). IO_LONG is the fraction of the firm held by long-term institutional investors. IO_TRA is the fraction of the firm held by short-term (transient) investors. SIZE is the natural log of total assets. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. ROA is return on assets which is defined as earnings before interest and tax over total asset. RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. EMP is the number of employee of firms from COMPUSTAT. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF	(2) LAYOFF	(3) LAYOFF
RECESSION	1.122***		
	(0.221)		
IO_PUBLIC x RECESSION	-26.343***		
	(7.932)		
IO_NON_PUBLIC x RECESSION	2.775***		
	(0.493)		
DISTRESS		0.599***	
		(0.118)	
IO_PUBLIC x DISTRESS		8.714*	
		(5.030)	
IO_NON_PUBLIC x DISTRESS		-1.234***	
		(0.376)	
IO_PUBLIC x RET_12			-2.268***
			(0.433)
IO_NON_PUBLIC x RET_12			-1.062
			(5.877)
IO_PUBLIC	24.280***	20.047***	21.661***
	(2.492)	(2.212)	(2.215)
IO_NON_PUBLIC	-0.023	0.523***	0.335*
	(0.196)	(0.178)	(0.176)
SIZE	0.777***	0.760***	0.767***
	(0.033)	(0.032)	(0.032)
LEV	0.642***	0.673***	0.634***
	(0.176)	(0.183)	(0.183)
M/B	-0.047***	-0.042***	-0.043***
	(0.013)	(0.015)	(0.015)
ROA	-3.834***	-3.521***	-3.779***
	(0.393)	(0.397)	(0.389)
RET_12	-1.609***	-1.645***	-1.256***
	(0.102)	(0.125)	(0.143)
EMP	0.839***	0.845***	0.845***
	(0.035)	(0.033)	(0.032)
LABOR PRODUCTIVITY	-0.00011	-0.00011	-0.00012
	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00018**	-0.00018**	-0.00017**
	(0.000)	(0.000)	(0.000)
HIGH_UNION	0.072	0.082	0.070
	(0.088)	(0.090)	(0.091)
RTW	0.522***	0.526***	0.527***
	(0.096)	(0.099)	(0.100)
Constant	-7.830***	-8.121***	-8.033***
	(0.284)	(0.300)	(0.297)
Observations	48,035	48,035	48,035
Pseudo-R^2	0.549	0.546	0.546

Table 10: Logistic regression of likelihood of layoff on firm characteristics (Full Sample)

This table presents the results of logistic regression of the likelihood that a firm announces employee layoffs in full sample. Total institutional ownership variable (IO_TOT) is the fraction of the firm held by all institutional investors. Institutional ownership is further classified by investment horizons based on Bushee (2001). IO_LONG is the fraction of the firm held by long-term institutional investors. IO_TRA is the fraction of the firm held by short-term(transient) investors. SIZE is the natural log of total assets. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. ROA is return on assets which is defined as earnings before interest and tax over total asset. RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. EMP is the number of employee of firms from COMPUSTAT. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF	(2) LAYOFF	(3) LAYOFF
RECESSION	1.034***		
	(0.193)		
IO_LOCAL x RECESSION	4.732		
	(3.080)		
IO_NONLOCAL x RECESSION	1.186***		
	(0.459)		
DISTRESS		0.646***	
		(0.103)	
IO_LOCAL x DISTRESS		-1.357	
		(3.396)	
IO_NONLOCAL x DISTRESS		0.981***	
		(0.321)	
IO_LOCAL x RET_12			-3.246
			(3.488)
IO_NONLOCAL x RET_12			-1.576***
			(0.379)
IO_LOCAL	-6.366***	-5.032***	-5.223***
	(1.356)	(1.220)	(1.218)
IO_NONLOCAL	0.727***	0.991***	0.873***
	(0.169)	(0.161)	(0.157)
SIZE	0.783***	0.777***	0.778***
	(0.031)	(0.031)	(0.031)
LEV	0.610***	0.633***	0.590***
	(0.179)	(0.180)	(0.180)
M/B	-0.048***	-0.045***	-0.046***
	(0.015)	(0.015)	(0.015)
ROA	-3.902***	-3.542***	-3.795***
	(0.381)	(0.392)	(0.384)
RET_12	-1.625***	-1.650***	-1.427***
	(0.124)	(0.123)	(0.132)
EMP	0.864***	0.864***	0.867***
	(0.032)	(0.032)	(0.032)
LABOR PRODUCTIVITY	-0.00012	-0.00011	-0.00011
	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00016	-0.00018**	-0.00017**
	(0.000)	(0.000)	(0.000)
HIGH_UNION	0.094	0.107	0.091
	(0.092)	(0.092)	(0.092)
RTW	0.578***	0.580***	0.579***
	(0.101)	(0.100)	(0.101)
Constant	-7.822***	-8.192***	-7.972***
	(0.286)	(0.291)	(0.285)
Observations	48,035	48,035	48,035
Pseudo-R^2	0.544	0.544	0.543

Table 11: Tobit regression of likelihood of layoff on firm characteristics (Full Sample)

This table presents the results of Tobit regression of fraction of total employee laid off (LAYOFF_P) in full sample. IO_LONG is the fraction of the firm held by long-term institutional investors. IO_TRA is the fraction of the firm held by short-term (transient) investors. IO_PUBLIC: the fraction of the firm held by public pension fund. IO_NON_PUBLIC: the fraction of the firm held by non-public pension fund. IO_LOCAL is the fraction of the firm held by local institutional investors. IO_NON_LOCAL is the fraction of the firm held by non-local institutional investors SIZE is the natural log of total assets. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. ROA is return on assets which is defined as earnings before interest and tax over total asset. RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. EMP is the number of employee of firms from COMPUSTAT. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF_P	(2) LAYOFF_P	(3) LAYOFF_P	(4) LAYOFF_P
IO_TOT	0.047***			
	(0.003)			
IO_LONG		0.077***		
		(0.004)		
IO_TRA		-0.035***		
		(0.009)		
IO_PUBLIC			1.459***	
			(0.071)	
IO_NON_PUBLIC			0.016***	
			(0.003)	
IO_LOCAL				-0.224***
				(0.016)
IO_NONLOCAL				0.042***
				(0.003)
SIZE	0.039***	0.039***	0.039***	0.040***
	(0.000)	(0.000)	(0.000)	(0.000)
LEV	0.023***	0.023***	0.028***	0.026***
	(0.003)	(0.003)	(0.003)	(0.003)
M/B	-0.003***	-0.002***	-0.002***	-0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-0.218***	-0.215***	-0.223***	-0.215***
	(0.006)	(0.006)	(0.006)	(0.006)
RET_12	-0.118***	-0.118***	-0.118***	-0.118***
	(0.001)	(0.001)	(0.001)	(0.001)
EMP	0.032***	0.031***	0.031***	0.031***
	(0.001)	(0.001)	(0.001)	(0.001)
LABOR PRODUCTIVITY	-0.00002***	-0.00002***	-0.00002***	-0.00002***
	(0.000)	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00001***	-0.00001***	-0.00001***	-0.00001***
	(0.000)	(0.000)	(0.000)	(0.000)
HIGH_UNION	-0.000	-0.001	0.002	0.002
	(0.002)	(0.002)	(0.002)	(0.002)
RTW	0.021***	0.021***	0.020***	0.023***
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-1.259***	-1.253***	-1.266***	-1.255***
	(0.002)	(0.002)	(0.002)	(0.002)
Observations	48,035	48,035	48,035	48,035

Table 12: Conditional logistic regression of likelihood of layoff on firm characteristics
(Size-Industry Matched Sample)

This table presents the results of a conditional logistic regression of the likelihood that a firm announces employee layoffs in size and industry matched sample. Total institutional ownership variable (IO_TOT) is the fraction of the firm held by all institutional investors. Institutional ownership is further classified by investment horizons based on Bushee (2001). IO_LONG is the fraction of the firm held by long-term institutional investors. IO_TRA is the fraction of the firm held by short-term (transient) investors. The institutional ownership variable is further classified by whether it is public pension fund or not. IO_PUBLIC: the fraction of the firm held by public pension fund. IO_NON_PUBLIC: the fraction of the firm held by non-public pension fund. IO_LOCAL is the fraction of the firm held by local institutional investors. IO_NON_LOCAL is the fraction of the firm held by non-local institutional investors. SIZE is the natural log of total assets. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. ROA is return on assets which is defined as earnings before interest and tax over total asset. RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. EMP is the number of employee of firms from COMPUSTAT. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF	(2) LAYOFF	(3) LAYOFF	(4) LAYOFF
IO_TOT	2.355***			
	(0.218)			
IO_LONG		3.248***		
		(0.308)		
IO_TRA		-0.374		
		(0.582)		
IO_PUBLIC			46.598***	
			(5.752)	
IO_NON_PUBLIC			1.796***	
			(0.286)	
IO_LOCAL				-4.898***
				(1.336)
IO_NONLOCAL				2.401***
				(0.224)
SIZE	3.957***	4.026***	4.398***	3.926***
	(0.719)	(0.725)	(0.784)	(0.715)
LEV	-0.471	-0.379	-0.531	-0.419
	(0.316)	(0.320)	(0.341)	(0.318)
M/B	-0.006*	-0.005	-0.005	-0.006*
	(0.003)	(0.003)	(0.003)	(0.003)
ROA	-0.500	-0.563	-0.631	-0.451
	(0.533)	(0.525)	(0.539)	(0.530)
RET_12	-0.964***	-0.957***	-0.927***	-0.965***
	(0.161)	(0.165)	(0.170)	(0.164)
EMP	0.012***	0.012***	0.011***	0.012***
	(0.003)	(0.003)	(0.003)	(0.003)
LABOR PRODUCTIVITY	0.00027	0.00030	0.00025	0.00020
	(0.000)	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00039*	-0.00037	-0.00027	-0.00030
	(0.000)	(0.000)	(0.000)	(0.000)
HIGH_UNION	-1.121***	-1.144***	-0.988***	-1.122***
	(0.142)	(0.142)	(0.146)	(0.142)
RTW	0.467***	0.488***	0.548***	0.517***
	(0.163)	(0.164)	(0.171)	(0.164)
TEST for IO_PUBLIC==IO_NON_PUBLIC			7.62	
TEST for IO_LOCAL==IO_NONLOCAL				-5.13
Observations	2,274	2,274	2,274	2,274
Pseudo-R^2	0.290	0.301	0.370	0.283

Table 13: Conditional logistic regression of likelihood of layoff on firm characteristics
(Propensity Scores Matched Sample)

This table presents the results of a conditional logistic regression of the likelihood that a firm announces employee layoffs in propensity score matched sample. Total institutional ownership variable (IO_TOT) is the fraction of the firm held by all institutional investors. Institutional ownership is further classified by investment horizons based on Bushee (2001). IO_LONG is the fraction of the firm held by long-term institutional investors. IO_TRA is the fraction of the firm held by short-term (transient) investors. The institutional ownership variable is further classified by whether it is public pension fund or not. IO_PUBLIC: the fraction of the firm held by public pension fund. IO_NON_PUBLIC: the fraction of the firm held by non-public pension fund. IO_LOCAL is the fraction of the firm held by local institutional investors. IO_NON_LOCAL is the fraction of the firm held by non-local institutional investors. SIZE is the natural log of total assets. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. ROA is return on assets which is defined as earnings before interest and tax over total asset. RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. EMP is the number of employee of firms from COMPUSTAT. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF	(2) LAYOFF	(3) LAYOFF	(4) LAYOFF
IO_TOT	0.755**			
	(0.333)			
IO_LONG		0.984**		
		(0.495)		
IO_TRA		0.332		
		(0.963)		
IO_PUBLIC			26.207***	
			(7.523)	
IO_NON_PUBLIC			0.171	
			(0.380)	
IO_LOCAL				-6.063*
				(3.386)
IO_NONLOCAL				0.705**
				(0.327)
SIZE	0.201	0.197	0.162	0.258
	(0.174)	(0.175)	(0.178)	(0.178)
LEV	-0.186	-0.191	-0.029	-0.030
	(0.524)	(0.526)	(0.533)	(0.530)
M/B	0.018	0.019	0.018	0.014
	(0.032)	(0.032)	(0.033)	(0.033)
ROA	-4.938***	-4.958***	-4.840***	-4.903***
	(1.167)	(1.167)	(1.190)	(1.165)
RET_12	-1.384***	-1.385***	-1.350***	-1.439***
	(0.233)	(0.234)	(0.236)	(0.237)
EMP	1.119***	1.115***	1.075***	1.095***
	(0.117)	(0.118)	(0.119)	(0.118)
LABOR PRODUCTIVITY	0.00028	0.00028	0.00029	0.00028
	(0.000)	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00034	-0.00033	-0.00042*	-0.00042*
	(0.000)	(0.000)	(0.000)	(0.000)
HIGH_UNION	-0.304	-0.297	-0.282	-0.380
	(0.233)	(0.233)	(0.235)	(0.236)
RTW	0.431*	0.428*	0.450*	0.436*
	(0.232)	(0.233)	(0.234)	(0.233)
TEST for IO_LOCAL==IO_NONLOCAL				-2.01
Observations	1,260	1,260	1,260	1,260
Pseudo-R2	0.453	0.454	0.468	0.457

Table 14: Institutional ownership and Firm value.
(Layoff Sample)

This table reports OLS regression result. A dependent variable in the regression is 11-day cumulative abnormal return (CARs) around layoff announcements. IO_LONG is the fraction of the firm held by long-term institutional investors. IO_TRA is the fraction of the firm held by short-term (transient) investors. The institutional ownership variable is further classified by whether it is public pension fund or not. IO_PUBLIC: the fraction of the firm held by public pension fund. IO_NON_PUBLIC: the fraction of the firm held by non-public pension fund. SIZE is the natural log of total assets. IO_LOCAL is the fraction of the firm held by local institutional investors. IO_NON_LOCAL is the fraction of the firm held by non-local institutional investors. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. ROA is return on assets which is defined as earnings before interest and tax over total asset. RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. EMP is the number of employee of firms from COMPUSTAT. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) CAR[-5,5]	(2) CAR[-5,5]	(3) CAR[-5,5]	(4) CAR[-5,5]
IO_TOT	0.029**			
	(0.012)			
IO_LONG		0.050***		
		(0.014)		
IO_TRA		-0.061**		
		(0.025)		
IO_PUBLIC			0.251**	
			(0.012)	
IO_NON_PUBLIC			0.029	
			(0.166)	
IO_LOCAL				-0.048
				(0.087)
IO_NONLOCAL				0.032***
				(0.010)
SIZE	0.005**	0.005**	0.005**	0.005**
	(0.002)	(0.002)	(0.002)	(0.002)
LEV	0.001	0.000	0.001	0.001
	(0.014)	(0.014)	(0.014)	(0.014)
M/B	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
ROA	-0.021	-0.026	-0.023	-0.018
	(0.032)	(0.032)	(0.032)	(0.031)
RET_12	-0.018***	-0.019***	-0.018***	-0.017***
	(0.006)	(0.006)	(0.006)	(0.006)
EMP	0.006**	0.005*	0.006*	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
LABOR PRODUCTIVITY	-0.000*	-0.000**	-0.000*	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
HIGH_UNION	0.005	0.005	0.005	0.007
	(0.006)	(0.006)	(0.006)	(0.006)
RTW	0.009	0.010	0.009	0.009
	(0.007)	(0.007)	(0.007)	(0.007)
Observations	2,034	2,034	2,034	2,034

Table 15: Fama-French Calendar Time Portfolio Estimates

The table reports calendar-time performance of layoff stocks in Q1(low institutional ownership quartile), Q4 (High institutional ownership quartile) portfolio against Fama-French Three Factors (1993). The quartile is assigned based on the average institutional holdings prior to layoff announcement date. MKTRF is the return on the CRSP value-weighted portfolio of all NYSE, AMEX, and Nasdaq stock. SMB is the difference in the return on portfolios of small and big stocks, and HML is the difference in the return of portfolios of high- and low- BE/ME stocks.

Q4-High IO Quartile

Event-window	Alpha	MKTRF	SMB	HML
(0,12)	0.0031*	1.3294***	0.2314***	0.5459***

Q1- Low IO Quartile

Event-window	Alpha	MKTRF	SMB	HML
(0,12)	-0.0082	1.145***	0.3146***	0.6296***

Essay 2 Family Firms and Layoff Decision

"Since family firms maintain a strong commitment to their workers, they are generally slower to reduce their employees during a recession. … Only 34% of respondents have reduced their workforce."

–FEUSA'S Survey

1. Introduction

Family firms have received increased attention in the economics and finance literature because most firms around the world are controlled by their founders or their founder's heirs. Even in the United States, where firm ownership is widely dispersed, founding family members actively participate in corporate business in one third of S&P 500 or Fortune 500 firms (Anderson and Reeb 2003).

There has been considerable research examining the impact of family ownership on firm valuation and performance (Anderson and Reeb (2003), Villalonga and Amit (2006), Chrisman et al. 2004). Emerging literature has studied how family ownership and control affect various corporate decisions like earning quality, investments, diversification, leverage, and cash holdings. Surprisingly, in spite of the growing interest in family firms, research on the employment policies of family firms is limited. It seems natural to investigate how family ownership or control affects employment policies.

There is also growing evidence in economics and finance suggesting that individuals bring their own personal style to the management of their firms (Bertrand and Scholar 2003). Furthermore, there is emerging literature showing that a manager's personal style or personal status influences a firm's employment policy. For example,

Matsa and Miller (2013) find that private firms owned by women were less likely than firms owned by men to downsize their workforce. Yonker (2013) also finds that native local managers are 33% less likely to lay off employees than their non-local managers among industry peers.

Jensen and Meckling (1976) argue that manager's nonpenuiary benefits may include "the attractiveness of the secretarial staff, the level of employee discipline, personal relations ('love,' 'respect,' and etc) with employees". One way for a manager to improve employee relations and secure loyalty is to provide more job security to employees especially during difficult economic times.

In this paper, I study the difference of employment policy, specifically the likelihood of layoffs, between family firms and non-family firms. As family firms have longer horizons and are better able to withstand short term market pressures they are more likely to offer employees an implicit contract that ensures job security for lower wages. Evidence in support of the implicit contract theory and higher job security for employees in family firms has been provided by Sraer and Thesmar (2004) and Bassanini et al (2010) in France. Lower likelihood of layoffs in family firms is also predicted by Social Identity theories. Family members are likely to identify more strongly with their firms and less likely to engage in layoffs and other actions that are likely to damage their or the firm's reputation (See Deephouse and Jaskiewicz (2013)).

I examine whether family firms have a lower propensity to lay off employees using a hand collected dataset on employee layoffs. Following the existing layoff literature (Hallock 2011) that uses public announcements from major news articles (e.g. *The New York Times* or *WSJ*), I hand collect and compile a data set of all layoff

announcements between 2002 and 2008. As I want to study permanent employee reductions I exclude temporary layoff announcements. I confirm the validity of the public layoff announcements by checking with COMPUSTAT and ensuring that it was followed by an actual reduction in the number of employees. Along with the date of the layoff announcement, I also collect data on number of employees laid off and the stated reasons for layoffs. After matching my layoff sample to the family firm data set and excluding missing observations, my final sample includes 9,172 firm year observations. Following Anderson, Duru and Reeb (2009), I define family firms as those in which the founder or any member of the founding family is a director, officer, or senior manager, or in which family members in the aggregate control at least 5% of the outstanding equity. I obtained the list of family firms from David Reeb[7].

My baseline results suggest that family firms are less likely to lay off employees than non-family firms. The results are robust to controlling for a host of characteristics known to impact layoffs. Specifically, I control for firm size, age, sale's growth, accounting performance, stock performance, leverage, market to book, labor productivity, capital intensity, union coverage, right-to-work state law, and institutional ownership. Consistent with previous layoff literature, larger firms, firms with poor accounting or stock performance, highly levered firms, and mature firms are more likely to announce a layoff decision. Firm with large and long-term institutional ownership are also more likely to announce layoffs.

Next, I examine if the difference in the layoff propensity of family and non-family firms is due to differences in how they respond to economic difficulties. I find layoff

[7] I am grateful to Prof. David Reeb for sharing me with his data on lists of family firms for the period of 2001 to 2010.

propensity during recession, industry profitability shock, and poor stock performance is similar for family and non-family firms. In sum, the difference in their layoff propensity is not due to differences in how they react to economic difficulties.

Further tests show that the lower likelihood of layoffs in family firms is stronger when 1) the firm if controlled by the founder and 2) when the firm is located in less populated counties. As founders are likely to be more attached to their firms and as the social cost of layoffs is likely to be higher in smaller non-urban communities this suggests the significant role of social factors in employment polices of family firms.

This paper makes two contributions. First, the paper contributes to the literature on family firms by documenting the differences in labor policy between family and non-family firms. Secondly, the paper also contributes to a better understanding of layoff decisions of firms and the role of ownership and how it influence the use of implicit labor contracts. The rest of my paper will proceed as follows: section 2 discusses the related literature, section 3 describes the data and present descriptive statistics, section 4 provides empirical results, and section 5 concludes.

2. Related Literature

2.1 Implicit Contracts in Family Firms

Implicit contract theory, originally proposed by Baily (1974) and Azariadis (1975), regards a wage contract as a form of risk sharing between a risk-neutral firm (owner) and workers. Under the implicit labor contract theory, the firm promises that most workers will keep their jobs even if total sales decrease. The firm thus provides employment insurance to its employees. In exchange for this, workers accept a lower

wage, or work harder for the same wage. Family managers might have a comparative advantage in enforcing this type of contract than professional managers because they have a longer horizon than professional managers and they are more protected than professional managers from market pressures that arise from poor performance.

Empirical evidence for the implicit contract theory has been provided by Sraer and Thesmar (2004) who find that in France employees in family firms are less sensitive to industry shocks relative to those in widely-held firms. They argue that this is because family managers can provide employees with an implicit contract which can sustain employees in exchange for lower wages. Bassanini et al. (2010) also document that French family firms offer lower wages to employees, but more job security.

2.2 Social Identity Theory and Corporate Reputation

According to social identity theory, individuals not only have a personal identity but also a social identity. Under social identity theory, Block (2010) argues that family managers are more likely to be emotionally attached to their firm and their employees than professional managers. Family members are likely to have a longer term horizon than professional managers. Employees in family firms may find it easier to establish a personal bond with, and develop loyalty to the family (Tone 1997 and Mandell 2002). Dial and Murphy (1995) state that laying off employees and living in the same community as the laid off employee is personally painful for managers (especially those with long company tenure).

In addition, according to Deephouse and Jaskiewicz (2013), family members identify more strongly with their family firms than professional managers with their firms.

This strong degree of identification makes family managers pursue a favorable reputation, i.e. family managers want to avoid any negative actions which damage both the company's reputation and their own. Family members care more about their reputation, especially when the family's name is part of the firm's name.

Several papers provide evidence that downsizing harms corporate reputation (Flanagan and O'shaughnessy 2005, Love and Kraatz 2009, Zyglidopoulos (2005))[8]. As such, their strong degree of identification with their firm might lead family managers to avoid employee downsizing in order to maintain their favorable reputation. Furthermore, family firms might treat their employees better than non-family firms so that employees have a higher regard for the firm. For example, the Strauss family and their descendants have been known for their willingness to take care of their employees during times of trouble. [9]

2.3 Family Firm and Corporate Decision

Recent literature has looked at how family ownership and control affect various corporate decisions. In regards to investment policy, Anderson, Duru, and Reeb (2010) document that family firms devote less capital to long-term investments (R&D) than non-family firms. This suggests that family firms have strong incentives to reduce firm risk that arises from the undiversified holdings of family members. Family firms are also less diversified than non-family firms. According to Anderson and Reeb (2003), family firms report 2.32 business segments and non-family firms report 2.8 business segments.

[8] Using the AMAC Survey that was conducted by Fortune Magazine, Zyglidopoulos (2005) finds that downsizing has a negative impact on corporate reputation.

[9] For example, the Strauss family paid the doctor bills of an employee who became ill with diphtheria. They also gave him $1,000 to pay off his debts.

Anderson and Reeb (2003) find no evidence for a systematic difference between family and non-family firms in terms of capital structure. To relate to corporate governance, Chen et al. (2009) find that family ownership reduces consumption of managerial perquisites. There is also growing research on the role of family firms in the accounting literature. Wang (2006) and Ali et al. (2007) document that family firms have better earning quality compared with non-family firms.

2.4 Extant Literature on Layoff

Layoffs have been examined by both academic research and the popular press. A large body of academic research has focused on the stock market reaction to layoff announcements. Earlier work by Linn and Rozeff (1993), Elayan, Swales, Maris and Scott (1998), Hallock (1998), and Chen, Mehrotra, Sivakumar and Yu (2001) find that layoff announcements have negative effects on stock price. However, later work by Brookman, Chang and Rennie (2007) and Chalos and Chen (2002) find a positive relationship between layoffs and stock price return around announcements. Farber and Hallock (2009) also find that most layoffs in the early 1970s were motivated by declining demand, whereas recent layoffs have been more motivated by improving efficiency. Consistent with this view, Farber and Hallock (2009) find that the market reaction to recent layoff announcements has become less negative, or even positive.

Several papers have looked at the relationship between firm characteristics and layoff decisions. Hallock (1998), Kang and Shivdasani (1997) show layoffs are more prevalent in larger firms. Denis and Kruse (2000) document that poor performance is a significant factor associated with the layoff decision. Leverage has been shown to have a

mixed effect on the layoff decision. Hiller, Marshall, McColgan and Werema (2006), and Ofek (1993) document that leverage increases the likelihood of employee layoffs, whereas Kang and Shivdasani (1997) find that there is no such relationship between leverage and the layoff decision. I control for all these firm characteristics associated with layoff decisions in my estimations.

2.5 Literature of Family Firms and Labor

In international studies, family firms are found to provide more job security in exchange for low wages, supporting the implicit contract theory that I mentioned above. For example, Sraer and Thesmar (2004) find that in French family firms, employees are less sensitive to industry shocks than they are in widely held firms because family managers can easily provide employees with an implicit contract which can sustain them in exchange for lower wages. Bassanini et.al (2010) also document that French family firms offers lower wages to employees but more job security. Using French data, Bach and Serrano-Velarde (2010) show that at the time of CEO transition, family-promoted CEOs are associated with lower layoffs and less wage renegotiation. D'Aurizio and Romano (2011) show that Italian family firms responded to the 2008 crisis by protecting workplaces close to the firm's headquarters than non-family firms do. Mueller and Philippon (2008) also find that family firms are most prevalent in countries where labor relations are more hostile.

3. Data Description

3.1 Identifying Layoff Announcements

The data on layoff announcements for the period 2002 to 2008 was obtained by hand-collecting all public layoff announcements. To construct my sample of employee layoff, I conducted a search for all the layoff announcements using keywords: "*lay off,"* "*laid off,"* "*cut jobs,"* "*eliminate jobs,"* and "*close"* in Factiva database from 2002 to 2008. From the Factiva news database, I obtained not only the total number of workers laid off, but also the cited reasons for the layoffs. I exclude layoff announcements when (1) the layoffs were temporary; (2) the size of layoffs was less than 100 employees; or (3) the layoff firms were not a publicly-listed companies on the NYSE, AMEX, and Nasdaq. Lastly, I required that a firm's stock return and financial information be available on CRSP and COMPUSTAT. These criteria resulted in a final sample of 602 layoff announcements over the period 2002 to 2008.

3.2 Family Firms

The data on family firms has been graciously provided by David Reeb. This data has been analyzed in detail in Anderson, Duru and Reeb (2009). Reeb et al. begin with a sample of 2,000 of the largest firms based on book value of total assets as of year-end 2001. They collect data on the family ownership and control for these firms till 2008. A firm is defined as family firms if the founder or any member of the founding family is a director, officer or senior manager, or family members in the aggregate control at least 5% of the outstanding equity. Reeb et al. excluded firms in regulated industries such as financial firms (SIC code 6000-6999) and public utilities (SIC code 4900-4999). I match

the family firm data with layoff announcements. The final sample consists of 9,172 firm years between 2002 and 2008. Of these 3,540 firm years, or 39% belong to family firms.

3.3 Variables and Specification

To estimate the effect of family firms on layoff decisions, I use the logistic regression of the likelihood of layoff with a family firm dummy variable, as well as several control variables that affect a firm's layoff decision from previous studies. The specification is as follows:

$$Layoff_{i,t} = \alpha + \beta_1 Family\_Firm + \beta_i X_{i,t} + e_{i,t}$$

The dependent variable is LAYOFF. This is equal to 1 if a firm announces a layoff in the fiscal year and zero otherwise. The main variable of interest is FAMILY_FIRM that is a dummy variable taking the value of one if the firm is categorized as family owned. Variable X denotes a host of control variables.

First, I control for firm characteristics that have been shown to impact a firm's layoff decision. Specifically, I include firm size (SIZE), proxied by the logarithm of total assets as Hallock (1998) shows that larger firms are more likely to have excess workforce and therefore more likely to announce layoffs. I include leverage (LEV) because Ofek (1993) and Kang and Shivdasani (1997) find that leverage increase investors' ability to force large-scale layoffs. LEV is measured by the total liabilities scaled by total assets. Denis and Kruse (2000) document that poor firm performance is one of the most important reasons for layoffs. To control for this, I include both a measure of accounting performance (return on assets) as well as a measure of stock performance. EMP is logarithm of the number of employee of firms from COMPUSTAT. AGE is logarithm of

the number of year the firm has been present in the COMPUSTAT database. Sales growth (ΔSALE) is (Net sales (sale) –Lagged Net sales) / Lagged Net sales and Producer Price Index as deflator. Lagged return on assets (ROA) is defined as earnings before interest and tax over total asset. RET_12 is the past twelve month buy and hold return prior to the layoff announcement. To control for growth opportunities, I include the market to book ratio (M/B) measured as the market value of equity scaled by book value of equity.

In line with Cronqvist et. al. (2009), I include labor productivity and capital intensity to control for labor-related firm specific characteristics. Labor Productivity is defined as the natural logarithm of total sales scaled by the total number of employees. Capital intensity, proxied by the Capital to labor ratio is included to control for capital intensity and is defined as the ratio of property, plant and equipment, to the total number of employees. I also include variables to capture the extent of labor unionization. I obtain the industry unionization rate, as well as the coverage, from the Union Membership and Coverage Database[10]. The Union Membership and Coverage Database use CPS industry classifications (CIC). In order to get the equivalent SIC industry codes, I use North American Industry Classification System Code (NAICS) as a common identifier.

I also consider whether a firm is located in Right-to-Work law (RTW) state. The Right-to -Work law secures the right of employees to decide for themselves whether or not to join or financially support a union. As of December 2013, there are 24 states have Right-to-Work laws mostly in the South and western plains states, where union membership is relatively weak. States without such laws are generally considered a more favorable bargaining environment for labor unions. I include 22 out of the 24 states in my

[10] The Union Membership and Coverage Database, available at www.unionstats.com

sample, because my sample period ends in 2008 and other two states (Indiana, Michigan) adopted the Right-to-Work law after 2008.

3.4 Summary Statistics

Table 1 provides sample characteristics for family and non-family firms. 4% of family firm years are associated with layoffs, which is significantly lower than the 8% for non-family firms. Family firms are generally smaller in size and have smaller employees than non-family firms. This is consistent with previous studies (Anderson et al. 2003). Family firms are younger in age, also have significantly lower debt and lower market to book ratios than non-family firms. Family firms have lower capital intensity than non-family firms. Lower capital intensity is likely to lower labor productivity as more capital makes labor effective. Consistent with this argument, I find lower labor productivity for family firms.

Family firms operate in industries with lower unionization rates than do non-family firms. This is consistent with Muller and Philippon (2011) showing the evidence that family firms have lower unionization rate and experience fewer strikes than do non-family firms in France. Also, it is worth noting that family firms are located in states less likely to be Right-to-Work (RTW) states. In other words family firms are located in regions with greater bargaining power of unions.

4. Empirical Results

Previous univariate analyses have provided preliminary supportive evidence for the lower likelihood of layoffs in family firms. In this section, to assess the impact of

family influence in a multivariate framework, I estimate a logistic model of the likelihood of employee reduction.

Table 2 presents the results of logistic regression of the likelihood of layoff on family variables and other firm characteristics. As described before, the dependent variable is Layoff, the dummy variable that takes the value one for years that experience an employee layoff. To control for industry characteristics and time effects on the layoff decision, I include industry and time fixed effects in my estimation. The coefficient for family firm is negative and significant, indicating that family firms have a lower likelihood of layoffs (see model (1), Table 2). In terms of marginal effects implied by the coefficients in model (1), family firm status reduces the probability of layoff by 0.5 percentage points. The coefficient on the control variables confirms the findings in prior empirical work. Larger firms, firms with large workforce, older firms, firms with less sale's growth, poor accounting and stock market performance, those with less growth opportunities, and firms with high debt levels have a higher likelihood of layoffs.

The coefficients for both labor productivity and capital intensity are negative and significant indicating that firms with higher labor productivity and capital intensity are associated with lower layoffs. The coefficient of Right to Work dummy is positive and significant. Firms located in right-to-work states are more likely to lay off employees. As the bargaining power of labor is weaker in these states, it is easier for firms to reduce worker benefits and lay off employees.

Kim (2013) document that firms with high institutional ownership are more likely to lay off employees and the likelihood of layoffs is positively related to ownership by long-term institutional investors who have greater incentives for monitoring. The fraction

of firm held by institutional investors is referred to as (IO_TOT). I control for the effect of institutional ownership on layoff decisions. I follow Bushee (1998, 2001) that classifies institutions based portfolio turnover, diversification and trading sensitivity.[11] Consistent with Kim (2013), I group "dedicated" and "quasi-indexer" into one group, referred to as long-term institutional investors (IO_LONG). Ownership by "Transient" institutional investors is referred as (IO_TRA). I also control for the effect of shareholder composition on layoff decision. ". As seen in model 2 of Table 2, the coefficient of IO_TOT is positive and significant. As expected, the likelihood of layoffs is positively associated with total institutional ownership. The positive association between institutional ownership is mainly driven by the long term institutional investors. . However, the relation between short-term institutional ownership and layoff is negative and insignificant (Model 3). In summary, after controlling for firm characteristics, other ownership characteristics as well as labor and capital productivity, I find that family firms have lower propensity to initiate layoffs.

Next, I examine if family firms impact the magnitude or severity of the layoffs along with their propensity. To study the impact of family firms on the depth of the layoffs, I use the fraction of total employees that were laid off as the dependent variable in Tobit estimation the results of which are reported in Table 3. The estimate results using Tobit regression presents that the magnitude of layoffs is less in family firms. The results are qualitatively similar to previous results in logistic regression.

[11] Bushee classifies institutions as "Dedicated" if these are have large investments and low portfolio turnover. In contrast, "Transient" institutions have high turnover and small holdings. "Quasi-indexing" institutions are characterized by having diversified holdings and low turnover that is similar to the "buy and hold" strategy of the "Dedicated" investors.

4.1 Family Firms Response to Economic Difficulties

One potential explanation for the lower likelihood of layoffs in family firms is that economic difficulties are associated with a different response varies cross family firms and non-family firms. It is possible, that non-family firms efficiently reduce employees in low profitability states while family firms do not efficiently downsize. Ellul, Pagano and Schivardi (2013) argue that the business model of family firms leads them to employ more skilled workers or to invest more intensively in their employees' human capital (via on-the-job training), so that it may be costly for them to dismiss their employees in a downturn.

To examine if the lower likelihood of layoffs in family firms is seen primarily during difficult economic times, I obtain three different proxies for difficult economic times. The first variable, RECESSION, capture economy wide downturns. Specifically it takes the value one when the economy is in a recession as captured by the U.S. recession indicator variables from the FRED (Federal Reserve Economic Data) database. Second, I capture performance at the industry level. I create a dummy variable DISTRESS that takes the value if the industry is in distress, i.e., the industry's median sales growth is negative for the past three consecutive years. Lastly, I use firm specific performance as captured by the past 12 month stock performance (RET_12).

As seen in Model 1 of Table 4, the coefficient of RECESSION is positive and significant. Not surprisingly, there are higher layoffs during recessions. Controlling for the impact of business cycles does not impact my result; the coefficient of the family firm variable continues to be negative and statistically significant. In model (1), I also include the interaction term between the recession variable and family to see whether the

response of family firms to recessions differs from non-family firms. The interaction variable is not significant indicating that there are no significant differences between family and nonfamily firms, in the layoff decision, as a response to economic hardship.

Since industry downturn may influence family firms' employee policy, next I include DISTRESS, the dummy for industry wide economic downturns. The coefficient of DISTRESS in Model (2) is positive and significant while that of its interaction is not. In line with the economy wide recessions, the results indicate higher likelihood of layoffs in industry downturns but little difference between family and non-family firms in how they likely they are to use layoffs in industry downturns. Lastly, I study the response of family firm to firm specific underperformance. As seen in Model (3) the coefficient of RET_12 is negative and significant while its interaction with family firms is not. All firms, irrespective of whether they are family firms or not, are more likely to lay off employees when their past returns are low.

This result indicates that the lesser likelihood of employee reductions in family firms is not arising from the fact that family firms respond differently to economic downturns. The results give suggest that factors other than response to poor performance are likely responsible for the lower likelihood of layoffs in family firms. Next we examine these in details.

4.2 Manager Characteristics and Layoffs

Zellweger and Astrachan (2008) suggest that family owners are emotionally attached to their firm and feel responsibility for the organization and its employees. This attachment to the firm is likely to be stronger when the firm is run by its founder rather

than by his heirs. To capture this I create a dummy for firms run by founders (FOUNDER). This dummy takes the value of one if the firm is listed in COMPUSTAT for less than 20years. As these are relatively young firms the firms are more likely to be still run by founders or have a stronger commitment to employees. All other family firms are classified as NONFOUNDER. I estimate the effect of founder and non-founders separately on the likelihood of layoffs. I find that founder-run family firms are less likely to reduce employees than non-founder run family firms. (See model 1 in Table 5). This result is robust to controlling for total institutional ownership (Model 2) and for long term and transient institutional ownership (Model 3). This result indicates the strong identification with the firm and its employees is likely to one reason for the lower layoffs seen in family firms. This result is also consistent with the following anecdotal evidence suggesting that founder controlled firms reluctantly reduce employees. A New York Times article said that founder CEOs are reluctant to initiate layoffs, even though company stock prices had significantly dropped, which lead to the firm receiving huge complaints from minority shareholders, as well as requests for layoffs

Social identity theory predicts that a strong degree of identification makes family managers pursue a favorable reputation. This is especially true when family members or managers are located in a less populated county where they are more likely to be visible and to interact with people in the local community. I investigate how variation in the demographics of the population around the headquarters influences the propensity of family firm managers to initiate layoff decisions.

Following Landier et al. (2009), I classify a firm as located in a rural area if the population of the county where it is head quartered is less than the median county

population based on 2000 Census. The dummy variable RURAL takes the value one in such cases. All other family firms are classified as NONRURAL. The results in model (4) in Table 5 indicate that family firms located in rural area are relatively less likely to lay off employees than family firms in non-rural area. This evidence is robust to the inclusion of total institutional ownership (Model 5) and long term and transient institutional ownership (Model 6). This provides support to the social identity theory.

4.3 Robustness

In this section, I do robustness check about my measure of layoffs. The dataset of hand-collected layoffs may be limited with a possibility that firms do not follow through on their layoff announcement. Therefore, I use COMPUSTAT data to estimate the loss in employment and generate an alternate proxy for layoffs. Specifically, I use the number of employees (emp) from COMPUSTAT and construct employment growth of a firm in year t. I classify a firm as experiencing a layoff event if the firm's employment growth rate is less than -7% in year t and the dummy variable (emp_7) takes the value of one in these years and zero otherwise. I use 7% reduction in the work force as a cutoff because this is the mean reduction in workforce seen in my hand collected sample of layoffs.

As seen in Table 6 the results with this new measure of layoffs are similar to previous results in Table 2. Family firms have lower likelihood of layoffs (See model (1)) and this result is robust to controlling for institutional ownership (See Model 2). With this measure I do not see a difference between founder and non-founder firms – there is a significantly lower likelihood of layoffs in both. However, there is some evidence that

likelihood of layoffs is lower in family firms located in rural areas than in non-rural areas. Finally, consistent with previous results, results reported in Table 7 indicate that family and non-family firms do not differ in how they respond to difficult economic times are robust to different measure of layoffs.

5. Conclusion

This paper explores whether there is difference in employment policy between family firms and non-family firms. Using large hand-collected layoff samples during 2002-2008, I find that family firms are less likely to reduce employees than non-family firms. Second, the lesser propensity to lay off employees in family firms is stronger when founding owners are in control. The less likelihood of employee reduction in family firms is stronger especially when family firm's headquarters are located in less populated counties. Less employee reduction in family firms persists even after controlling for firm characteristic that affect layoff decisions like size, growth opportunities, and performance. However, during poor performance or economic difficulties, there is no difference between family firms and non-family firms. Finally, results provide compelling evidence that managers in family firms provide an implicit contract to employees by providing them job security. Non-family managers do not make this provision.

Table 1: Summary Statistics

This table presents summary statistics between family firms and non-family firms during the period of 2002 to 2008. SIZE is the natural log of total assets. EMP is logarithm of the number of employee of firms from COMPUSTAT. AGE is logarithm of the number of year the firm has been present in the COMPUSTAT database. Sales growth ΔSALE is (Net sales (sale) –Lagged Net sales) / Lagged Net sales and Producer Price Index as deflator. RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. ROA is return on assets which is defined as earnings before interest and tax over total asset. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels.

	Family Firms		Non-Family Firms		
Variable	N	Mean	N	Mean	t-stat
LAYOFF	3,540	0.04	5,632	0.08	-8.48***
SIZE	3,540	2.90	5,632	3.24	-22.93***
EMP	3,540	1.36	5,632	1.71	-10.00***
AGE	3,540	1.23	5,632	1.31	-13.37***
ΔSALE	3,540	0.06	5,632	0.09	-1.51
RET_12	3,540	0.17	5,632	0.17	-0.18
ROA	3,540	0.08	5,632	0.09	-3.70***
LEV	3,540	0.49	5,632	0.52	-6.56***
M/B	3,540	1.72	5,632	1.95	-10.42***
LABOR PRODUCTIVITY	3,540	315.57	5,632	388.02	-5.51***
CAPITAL_LABOR	3,540	334.80	5,632	416.53	-2.43**
HIGH_UNION	3,540	0.49	5,632	0.52	-2.75***
RTW	3,540	0.32	5,632	0.33	-1.03

Table 2: Logistic regression of likelihood of layoff on firm characteristics

This table presents the results of logistic regression of the likelihood that a firm announces employee layoffs in full sample. Dependent Variable (LAYOFF) is an indicator variable when a firm announce employee layoffs and zero otherwise. FAMILY_FIRM is equal to 1 if a firm is classified as family firms based on Anderson, Duru, Reeb (2009). RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. SIZE is the natural log of total assets. EMP is logarithm of the number of employee of firms from COMPUSTAT. AGE is logarithm of the number of year the firm has been present in the COMPUSTAT database. ROA is return on assets which is defined as earnings before interest and tax over total asset. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF	(2) LAYOFF	(3) LAYOFF
FAMILY_FIRM	-0.391***	-0.288**	-0.308**
	(0.117)	(0.124)	(0.126)
IO_TOT		0.624***	
		(0.225)	
IO_LONG			2.148***
			(0.605)
IO_TRA			-0.363
			(0.530)
SIZE	1.418***	1.444***	1.426***
	(0.128)	(0.129)	(0.129)
EMP	0.248***	0.255***	0.248***
	(0.058)	(0.058)	(0.058)
AGE	0.799***	0.758***	0.690***
	(0.214)	(0.215)	(0.217)
ΔSALE	-0.557*	-0.572*	-0.537*
	(0.308)	(0.309)	(0.311)
ROA	-4.123***	-4.295***	-4.230***
	(0.682)	(0.684)	(0.691)
RET_12	-1.410***	-1.430***	-1.431***
	(0.190)	(0.192)	(0.193)
LEV	0.583**	0.571*	0.575*
	(0.296)	(0.297)	(0.297)
M/B	-0.305***	-0.295***	-0.294***
	(0.081)	(0.081)	(0.080)
LABOR PRODUCTIVITY	-0.00018	-0.00016	-0.00016
	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00020**	-0.00020**	-0.00021**
	(0.000)	(0.000)	(0.000)
HIGH_UNION	-0.030	-0.027	-0.036
	(0.105)	(0.104)	(0.104)
RTW	0.420***	0.420***	0.420***
	(0.118)	(0.119)	(0.119)
Constant	-7.817***	-8.276***	-8.023***
	(0.431)	(0.463)	(0.479)
INDUSTRY-TIME FIXED EFFECTS	YES	YES	YES
Observations	9,172	9,172	9,172
Pseudo R-squared	0.291	0.293	0.294

Table 3: Tobit Regression of Likelihood of Layoffs on Firm Characteristics

This table presents the results of Tobit regression of fraction of total employee laid off (LAYOFF_P) in full sample. FAMILY_FIRM is equal to 1 if a firm is classified as family firms based on Anderson, Duru, Reeb (2009). RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. SIZE is the natural log of total assets. EMP is logarithm of the number of employee of firms from COMPUSTAT. AGE is logarithm of the number of year the firm has been present in the COMPUSTAT database. Sales growth ΔSALE is (Net sales (sale) –Lagged Net sales) / Lagged Net sales and Producer Price Index as deflator. ROA is return on assets which is defined as earnings before interest and tax over total asset. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF_P	(2) LAYOFF_P	(3) LAYOFF_P
FAMILY_FIRM	-0.029***	-0.022**	-0.023**
	(0.009)	(0.009)	(0.009)
IO_TOT		0.042***	
		(0.016)	
IO_LONG			0.152***
			(0.043)
IO_TRA			-0.032
			(0.037)
SIZE	0.095***	0.096***	0.095***
	(0.014)	(0.014)	(0.014)
EMP	0.011***	0.011***	0.011**
	(0.004)	(0.004)	(0.004)
AGE	0.031**	0.029**	0.023*
	(0.013)	(0.013)	(0.013)
ΔSALE	-0.034*	-0.035*	-0.033*
	(0.019)	(0.019)	(0.019)
ROA	-0.263***	-0.275***	-0.269***
	(0.051)	(0.052)	(0.052)
RET_12	-0.096***	-0.097***	-0.097***
	(0.017)	(0.017)	(0.017)
LEV	0.023	0.022	0.023
	(0.020)	(0.020)	(0.020)
M/B	-0.019***	-0.018***	-0.018***
	(0.006)	(0.006)	(0.006)
LABOR PRODUCTIVITY	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.000**	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)
HIGH_UNION	-0.000	-0.000	-0.001
	(0.007)	(0.007)	(0.007)
RTW	0.025***	0.025***	0.024***
	(0.009)	(0.009)	(0.009)
Constant	-0.504***	-0.532***	-0.513***
	(0.062)	(0.066)	(0.065)
INDUSTRY-TIME FIXED EFFECTS	YES	YES	YES
Observations	9,172	9,172	9,172
Pseudo R-squared	0.447	0.451	0.453

Table 4: Logistic regression of likelihood of layoff on firm characteristics

Dependent Variable (LAYOFF) is an indicator variable when a firm announce employee layoffs and zero otherwise. FAMILY_FIRM is equal to 1 if a firm is classified as family firms based on Anderson, Duru, Reeb (2009). RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. SIZE is the natural log of total assets. EMP is logarithm of the number of employee of firms from COMPUSTAT. AGE is logarithm of the number of year the firm has been present in the COMPUSTAT database. Sales growth ΔSALE is (Net sales (sale) – Lagged Net sales) / Lagged Net sales and Producer Price Index as deflator. ROA is return on assets which is defined as earnings before interest and tax over total asset. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF	(2) LAYOFF	(3) LAYOFF
RECESSION	0.548**		
	(0.222)		
RECESSION x FAMILY_FIRM	-0.360		
	(0.447)		
DISTRESS		0.348**	
		(0.160)	
DISTRESS x FAMILY_FIRM		0.072	
		(0.275)	
RET_12 x FAMILY_FIRM			-0.147
			(0.347)
FAMILY_FIRM	-0.364***	-0.401***	-0.399***
	(0.118)	(0.126)	(0.116)
SIZE	1.390***	1.385***	1.371***
	(0.125)	(0.125)	(0.124)
EMP	0.230***	0.239***	0.238***
	(0.058)	(0.058)	(0.057)
AGE	0.855***	0.849***	0.850***
	(0.206)	(0.204)	(0.206)
ΔSALE	-0.410	-0.298	-0.419
	(0.276)	(0.267)	(0.278)
ROA	-3.914***	-3.764***	-3.869***
	(0.680)	(0.686)	(0.683)
RET_12	-1.593***	-1.592***	-1.609***
	(0.185)	(0.186)	(0.209)
LEV	0.671**	0.685**	0.635**
	(0.293)	(0.292)	(0.293)
M/B	-0.294***	-0.296***	-0.294***
	(0.081)	(0.080)	(0.080)
LABOR PRODUCTIVITY	-0.00012	-0.00011	-0.00012
	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00018**	-0.00019**	-0.00019**
	(0.000)	(0.000)	(0.000)
HIGH_UNION	-0.018	-0.048	-0.027
	(0.103)	(0.102)	(0.103)
RTW	0.409***	0.405***	0.408***
	(0.116)	(0.116)	(0.116)
Constant	-8.249***	-8.274***	-8.142***
	(0.413)	(0.412)	(0.410)
INDUSTRY-TIME FIXED EFFECTS	YES	YES	YES
Observations	9,172	9,172	9,172
Pseudo R-squared	0.255	0.255	0.254

Table 5: Logistic regression of likelihood of layoff on firm characteristics

This table presents the results of logistic regression of the likelihood that a firm announces employee layoffs in full sample. Dependent Variable (LAYOFF) is an indicator variable when a firm announce employee layoffs and zero otherwise. FAMILY_FIRM is equal to 1 if a firm is classified as family firms based on Anderson, Duru, Reeb (2009). RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. FOUNDER_FAMILY_FIRM is equal to 1 if firm age is less than 20years and the firm is a family firm. RURAL_FAMILY_FIRM is equal to 1 if a firm's headquarter is located on the county whose population is less than median of total populations based on Census 2000. SIZE is the natural log of total assets. EMP is logarithm of the number of employee of firms from COMPUSTAT. AGE is logarithm of the number of year the firm has been present in the COMPUSTAT database. Sales growth ΔSALE is (Net sales (sale) –Lagged Net sales) / Lagged Net sales and Producer Price Index as deflator. ROA is return on assets which is defined as earnings before interest and tax over total asset. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) LAYOFF	(2) LAYOFF	(3) LAYOFF	(4) LAYOFF	(5) LAYOFF	(6) LAYOFF
FOUNDER FAMILY_FIRM	-0.516***	-0.389*	-0.411**			
	(0.189)	(0.199)	(0.202)			
NONFOUNDER FAMILY_FIRM	-0.324**	-0.235	-0.254*			
	(0.139)	(0.143)	(0.143)			
RURAL FAMILY_FIRM				-0.443**	-0.331	-0.359*
				(0.205)	(0.212)	(0.213)
NONRURAL FAMILY_FIRM				-0.374***	-0.273**	-0.291**
				(0.130)	(0.136)	(0.137)
IO_TOT		0.616***			0.623***	
		(0.227)			(0.225)	
IO_LONG			2.130***			2.147***
			(0.606)			(0.605)
IO_TRA			-0.377			-0.368
			(0.534)			(0.531)
SIZE	1.424***	1.448***	1.431***	1.420***	1.446***	1.428***
	(0.129)	(0.129)	(0.129)	(0.129)	(0.129)	(0.129)
EMP	0.247***	0.254***	0.247***	0.247***	0.254***	0.247***
	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)
AGE	0.727***	0.700***	0.632***	0.799***	0.757***	0.690***
	(0.228)	(0.230)	(0.233)	(0.214)	(0.215)	(0.217)
ΔSALE	-0.556*	-0.572*	-0.536*	-0.558*	-0.573*	-0.538*
	(0.307)	(0.308)	(0.311)	(0.307)	(0.309)	(0.311)
ROA	-4.119***	-4.288***	-4.222***	-4.117***	-4.291***	-4.224***
	(0.682)	(0.685)	(0.692)	(0.680)	(0.682)	(0.689)
RET_12	-1.414***	-1.434***	-1.434***	-1.409***	-1.430***	-1.430***
	(0.191)	(0.192)	(0.193)	(0.190)	(0.192)	(0.193)
LEV	0.599**	0.584**	0.589**	0.577*	0.566*	0.569*
	(0.297)	(0.297)	(0.297)	(0.297)	(0.298)	(0.297)
M/B	-0.306***	-0.296***	-0.295***	-0.305***	-0.296***	-0.295***
	(0.081)	(0.081)	(0.080)	(0.081)	(0.081)	(0.080)
LABOR PRODUCTIVITY	-0.00018	-0.00016	-0.00016	-0.00018	-0.00016	-0.00016
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00020**	-0.00020**	-0.00021**	-0.00020**	-0.00020**	-0.00021**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HIGH_UNION	-0.031	-0.028	-0.037	-0.028	-0.026	-0.035
	(0.105)	(0.104)	(0.104)	(0.105)	(0.104)	(0.104)
RTW	0.417***	0.418***	0.417***	0.418***	0.418***	0.418***

	(0.119)	(0.119)	(0.119)	(0.119)	(0.119)	(0.119)
Constant	-7.731***	-8.201***	-7.945***	-7.817***	-8.275***	-8.021***
	(0.444)	(0.483)	(0.501)	(0.431)	(0.463)	(0.479)
INDUSTRY-TIME FIXED EFFECTS	YES	YES	YES	YES	YES	YES
Observations	9,172	9,172	9,172	9,172	9,172	9,172
Pseudo R-squared	0.291	0.293	0.294	0.291	0.293	0.294

Table 6: Logistic regression of likelihood of layoff on firm characteristics

This table presents the results of logistic regression of the likelihood that a firm announces employee layoffs in full sample. Dependent Variable (EMP_7) is equal to 1 if a firm reduces 7% or more of employees comparing to previous year. FAMILY_FIRM is equal to 1 if a firm is classified as family firms based on Anderson, Duru, Reeb (2009). RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. FOUNDER_FAMILY_FIRM is equal to 1 if firm age is less than 20years and the firm is a family firm. RURAL_FAMILY_FIRM is equal to 1 if a firm's headquarter is located on the county whose population is less than median of total populations based on Census 2000. SIZE is the natural log of total assets. EMP is logarithm of the number of employee of firms from COMPUSTAT. AGE is logarithm of the number of year the firm has been present in the COMPUSTAT database. Sales growth ΔSALE is (Net sales (sale) –Lagged Net sales) / Lagged Net sales and Producer Price Index as deflator. ROA is return on assets which is defined as earnings before interest and tax over total asset. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) EMP_7	(2) EMP_7	(3) EMP_7	(4) EMP_7	(5) EMP_7	(6) EMP_7
FAMILY_FIRM	-0.381***	-0.399***				
	(0.064)	(0.064)				
FOUNDER FAMILY_FIRM			-0.274***	-0.292***		
			(0.082)	(0.082)		
NONFOUNDER FAMILY_FIRM			-0.501***	-0.519***		
			(0.086)	(0.087)		
RURAL FAMILY_FIRM					-0.330***	-0.350***
					(0.094)	(0.094)
NONRURAL FAMILY_FIRM					-0.404***	-0.422***
					(0.072)	(0.072)
IO_TOT	0.350***		0.356***		0.351***	
	(0.114)		(0.114)		(0.114)	
IO_LONG		1.498***		1.511***		1.497***
		(0.321)		(0.322)		(0.321)
IO_TRA		-0.524*		-0.517*		-0.523*
		(0.277)		(0.276)		(0.277)
SIZE	0.027	0.026	0.022	0.021	0.028	0.027
	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)
EMP	0.072*	0.061	0.072*	0.061	0.072*	0.061
	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)
AGE	0.282**	0.237**	0.407***	0.362***	0.283**	0.237**
	(0.116)	(0.116)	(0.130)	(0.130)	(0.116)	(0.116)
ΔSALE	-0.107	-0.097	-0.105	-0.095	-0.106	-0.096
	(0.096)	(0.090)	(0.094)	(0.089)	(0.096)	(0.090)
ROA	-3.816***	-3.793***	-3.824***	-3.801***	-3.827***	-3.804***
	(0.356)	(0.357)	(0.356)	(0.357)	(0.356)	(0.357)
RET_12	-0.695***	-0.713***	-0.695***	-0.713***	-0.695***	-0.712***
	(0.093)	(0.093)	(0.092)	(0.093)	(0.093)	(0.093)
LEV	0.359**	0.370**	0.343**	0.355**	0.357**	0.369**
	(0.160)	(0.160)	(0.160)	(0.160)	(0.160)	(0.160)
M/B	-0.307***	-0.301***	-0.307***	-0.301***	-0.307***	-0.301***
	(0.046)	(0.045)	(0.046)	(0.045)	(0.046)	(0.045)
LABOR PRODUCTIVITY	-0.00018*	-0.00018*	-0.00018*	-0.00017*	-0.00018*	-0.00017*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.00004	-0.00004	-0.00004	-0.00004	-0.00004	-0.00004
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HIGH_UNION	-0.062	-0.071	-0.062	-0.071	-0.062	-0.071

	(0.078)	(0.078)	(0.078)	(0.078)	(0.078)	(0.078)
RTW	0.031	0.037	0.030	0.036	0.022	0.028
	(0.063)	(0.063)	(0.063)	(0.063)	(0.065)	(0.065)
Constant	-0.725	-0.661	-0.820	-0.755	-0.725	-0.661
	(0.554)	(0.549)	(0.562)	(0.556)	(0.553)	(0.548)
INDUSTRY-TIME FIXED EFFECTS	YES	YES	YES	YES	YES	YES
Observations	9,560	9,560	9,560	9,560	9,560	9,560
Pseudo R-squared	0.140	0.141	0.140	0.142	0.140	0.141

Table 7: Logistic regression of likelihood of layoff on firm characteristics

This table presents the results of logistic regression of the likelihood that a firm announces employee layoffs in full sample. Dependent Variable (EMP_7) is equal to 1 if a firm reduces 7% or more of employees comparing to previous year. FAMILY_FIRM is equal to 1 if a firm is classified as family firms based on Anderson, Duru, Reeb (2009). RET_12 is the one-year stockholding returns over the fiscal year before the layoff announcement. SIZE is the natural log of total assets. EMP is logarithm of the number of employee of firms from COMPUSTAT. AGE is logarithm of the number of year the firm has been present in the COMPUSTAT database. Sales growth ΔSALE is (Net sales (sale) –Lagged Net sales) / Lagged Net sales and Producer Price Index as deflator. ROA is return on assets which is defined as earnings before interest and tax over total asset. LEV is leverage that is defined as the ratio of total liabilities to total assets. M/B is market to book ratio which is defined as market value of equity scaled by book value of equity. LABOR_PRODUCTIVITY is natural logarithm of ration of total sales over total number of employees. CAPITAL_LABOR is ratio of Property, plant and equipment (PPE) scaled by total number of employees (emp). HIGH_UNION is equal to 1 if industry average unionization rate is greater than median. RTW is equal to 1 when a firm is located in Right-To-Work states. ***, **, and * denote statistical significance at 1%, 5% and 10% levels using robust standard errors and standard errors are in parentheses below the coefficients.

VARIABLES	(1) EMP_7	(2) EMP_7	(3) EMP_7
RECESSION	0.803***		
	(0.088)		
RECESSION x FAMILY_FIRM	0.108		
	(0.142)		
DISTRESS		0.187**	
		(0.095)	
DISTRESS x FAMILY_FIRM		0.073	
		(0.144)	
RET_12 x FAMILY_FIRM			0.202
			(0.188)
FAMILY_FIRM	-0.446***	-0.448***	-0.422***
	(0.066)	(0.066)	(0.060)
SIZE	0.050	0.057	0.056
	(0.043)	(0.043)	(0.042)
EMP	0.063	0.047	0.049
	(0.043)	(0.043)	(0.043)
AGE	0.267**	0.414***	0.392***
	(0.113)	(0.111)	(0.111)
ΔSALE	-0.079	-0.062	-0.066
	(0.080)	(0.065)	(0.069)
ROA	-3.708***	-3.163***	-3.249***
	(0.354)	(0.356)	(0.356)
RET_12	-0.806***	-1.043***	-1.137***
	(0.091)	(0.094)	(0.106)
LEV	0.366**	0.392**	0.405***
	(0.158)	(0.157)	(0.157)
M/B	-0.304***	-0.337***	-0.335***
	(0.046)	(0.046)	(0.047)
LABOR PRODUCTIVITY	-0.000*	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
CAPITAL_LABOR	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
HIGH_UNION	-0.023	-0.086	-0.058
	(0.076)	(0.076)	(0.075)
RTW	0.023	0.025	0.024
	(0.063)	(0.062)	(0.062)
Constant	-1.319**	-1.398***	-1.334**
	(0.529)	(0.538)	(0.538)
INDUSTRY-TIME FIXED EFFECTS	YES	YES	YES
Observations	9,560	9,560	9,560
Pseudo R-squared	0.128	0.116	0.115

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