RISKY BUSINESS:

THE DECLINE OF DEFINED BENEFIT PENSIONS AND FIRMS' SHIFTING OF RISK

J. Adam Cobb

The Wharton School, University of Pennsylvania

2027 Steinberg Hall-Dietrich Hall

3620 Locust Walk

Philadelphia, PA 19104, USA

adamcobb@wharton.upenn.edu

215.898.0990

Keywords: employment relationship, equity ownership, human resource practices, labor, power, retirement plans, shareholder value

Acknowledgements: I thank Jerry Davis for invaluable guidance on this project as well as Margaret Levenstein, Mark Mizruchi, Kathie Sutcliffe, Flannery Garnett, Maria Farkas, Doug Kruse, and seminar participants at the University of Michigan, the Cornell ILR School, Harvard Business School, MIT, and the Wharton People and Organizations Conference for thoughtful comments on earlier versions of this paper. I would also like to thank Matthew Bidwell, Martine Haas, and J.R. Keller for helpful feedback on multiple versions of this manuscript, as well as Peter Cappelli, Bill Even, Mauro Guillen, Ken-Hou Lin, Olivia Mitchell, and Tyler Wry for their advice and insights. Additionally, I thank Ben Davis and Constantin Gumenita for their assistance collecting the equity ownership data. This research was financed in part by the Louis O. Kelso Fellowship, the Robert Kahn Fellowship for the Scientific Study of Social Issues, and the State Farm Foundation Doctoral Dissertation Award.

Abstract

Since the early 1980s, employment in the United States has undergone significant transformation as the large corporations that once safeguarded employees with stable jobs and rewards for loyalty have replaced these employment relationships with ones based on cost containment and flexibility. One important consequence of these developments is that firms have abdicated their role as a critical risk bearer in society. Though evidence suggests that firms have increasingly shifted market risks onto their workforce, to date, there have been few detailed analyses exploring what factors have driven this phenomenon. This study adds to our understanding of why firms have transferred risk to their employees by examining the decline of a highly institutionalized practice that large US firms used to bear retirement risk – the defined benefit (DB) pension plan. Through a detailed analysis, I show that variance in the presence, power, and interests of shareholders and employees at the firm level differentially affect a firm's willingness to shift the risk of retirement onto their workers. Specifically, I demonstrate empirically that different types of shareholders have differential effects on a firm's retirement practices, suggesting that the changing equity ownership structure of large US firms has played a key role in how risk is allocated between workers and firms. Declines in employee power have also played a role as firm levels of unionization positively affect rates of DB participation for both unionized and nonunionized workers.

One of the most consequential developments in US society over the past 35 years has been the fundamental restructuring of the employment relationship (Kalleberg, 2009). The large firms that once safeguarded employees with stable jobs, pathways to mobility, premium wages, and generous benefits have increasingly replaced them with employment relations based on flexibility and cost containment (Cappelli, 1999; Osterman, 1999). An especially profound result of this transformation is that US corporations have largely abandoned their role as a primary risk bearer (Davis, 2009).

Several scholars have noted that a feature of modern society is the individualization of risk, making employment, and well-being more generally, more precarious (Bourdieu, 1998; Hacker, 2008; Kalleberg, 2011). Much effort has gone into documenting this phenomenon, and while evidence – such as declining job tenure, increased long-term unemployment, and the use of non-standard work arrangements – supports the idea that market uncertainty is increasingly borne by workers, there is a paucity of research on organizations that examines the mechanisms producing these changes (Kalleberg, 2009). Hence, although we know that firms are shifting risks onto their workers and have some possible explanations as to why, we lack detailed analyses that could support or challenge those accounts.

In part, the lack of evidence on the causes of risk shifting may reflect the difficulties of exploring this question. It is likely that a firm's desire to transfer risk onto its workforce reflects changes in the way firms structure their employment practices; yet a lack of longitudinal data on these practices has hindered progress in examining this question. Previous research has, however, offered some clues. For example, the use of non-standard work has garnered considerable attention in recent years. However, this literature has often focused on documenting the incidence of these arrangements and examining the deleterious impact they typically have on workers' wages and access to benefits (e.g., Ashford, George, & Blatt, 2007). Pinning down what motivates firms to use these arrangements remains elusive (Cappelli & Keller, 2013). Others have examined downsizing and layoffs and found some evidence that market pressures motivate firms' decisions to downsize (e.g., Jung, 2014). Though a practice with significant implications for individual welfare, layoffs are no more common since the early 1980s – at least prior to the financial crisis

of 2008 (Farber, 2009). Studying other practices firms used to shoulder employment risks and why these practices are changing can, therefore, greatly enhance our understanding of the risk-shifting phenomenon.

As a way to analyze factors motivating firms to transition employment risk onto their workforce, I examine the transformation of corporate-sponsored retirement plans. This setting is appropriate because it is one of the most obvious examples of how firms have shifted employment risk onto their workforce, yet a phenomenon that has heretofore been unexplored in the management literature. Beginning in earnest in the years immediately following World War II, most employees of large corporations benefited from a guaranteed source of annuitized retirement income – the defined benefit (DB) pension (Zelinsky, 2004). Starting in the early 1980s, US firms steadily decreased their utilization of these plans, forcing workers to interface directly with the market to save for retirement. In comparison with other HR practices, DB plans are unique in that they contain both an explicit agreement of future benefits for work in the present along with an implicit promise of employment stability (Lazear, 1986). Furthermore, in a DB pension, the firm, not the worker, shoulders much of the risk associated with retirement. In so doing, the company bears additional financial uncertainty that can be transferred onto workers if it elects to transition away from using DB pensions. The decreasing utilization of DB pensions, therefore, offers insight into how firms view their role in the provision of employee welfare by shouldering retirement risk.

I develop a simple theoretical framework to understand why firms have abdicated their role as a key bearer of retirement risk. I argue that one possible explanation for why firms have done so is the altering balance of power between shareholders and employees, as accounts have suggested that the combined impact of the increased influence of shareholders and the declining prevalence of unions have driven changes in employment practices (see Bidwell, Briscoe, Fernandez-Mateo, & Sterling, 2013). To apply this insight at the firm level, I utilize the idea that organizations are composed of a set of coalitions with varying and competing interests that vie for resources and attention (Cyert & March, 1963). What issues are attended to by executives and what strategies get enacted, therefore, is determined, in part, by

the power and influence of these actors (Jackall, 1988). Viewing firms through this lens emphasizes that contestations among different stakeholders influence firm decision-making (Pfeffer & Salancik, 1978).

I then explore how the influence of different types of financial investors and the impact of union strength could have affected a firm's willingness to shift retirement risk onto its workforce. I focus my analysis on rates of DB pension utilization on a large sample of the largest US employers from 1982 to 2006, a period that coincides with the introduction of the 401(k) retirement plans, the ongoing decline of organized labor, and the entrenchment of the shareholder value maximization logic as the guiding principal in corporate decision-making (Appelbaum & Batt, 2014; Davis, 2009). Through a detailed analysis, I show that variance in the presence, power, and interests of shareholders and employees at the firm level differentially affect a firm's willingness to shift the risk of retirement onto their workers.

The paper is organized as follows: I first provide an overview of DB pensions, offering background on how they are structured, how they allocate risk, and how they influence incentives for long-term employment. I then introduce my theory, providing arguments for how shareholder influence and the presence of unions affect a firm's rates of DB utilization. I then describe the data and the analytical procedures used and present the results. I end with a discussion of the implications of the study and offer suggestions for future research.

DEFINED BENEFIT PLANS, RETIREMENT RISK, AND THE EMPLOYMENT RELATIONSHIP

DB plans are essentially promises made by firms to pay employees a post-retirement annuity benefit in exchange for foregone wages in the present period (Kruse, 1995). Because pension benefits are paid out far in the future, firms must make certain assumptions about their future liabilities. Take for example a simple benefit formula:

$$X = b * W_f * S$$

where b is the benefit percent (typically between 1 and 2.5%), W_f is the "final wage" based on the last year or the average of the last years of employment, and S is the number of years of service in the firm. While

the calculation is easy to make at the time of retirement, estimating the future liability for a workforce necessitates estimating the number of individuals who will retire *n* years the future, their expected wage rate at that time, and how many years of service they will have accumulated. Furthermore, because they set aside money today to finance those future liabilities, firms must also estimate the expected rate of return on current pension assets for the next *(n + y)* years, where *y* represents the number of years the firm expects to pay the benefits after retirement. Deviations from these assumptions, such as increased life expectancies, higher wages, or worse-than-assumed performance of pension assets, must be compensated for in the form of increased contributions (Orr, 1998).[1]

Though basic tax rules supporting pensions were established in the 1920s, they did not become popular until World War II. Between that time and the early 1980s, the largest US firms typically offered DB plans as their standard retirement practice: Pension coverage grew by 50% between 1945 and 1950 and rose another 70% between 1950 and 1955 (Jacoby, 1997, p. 218). By 1983, approximately 56% of workers, and 85% of all individuals with retirement plans, were covered by these schemes – with a disproportionate number being employed in large firms (Boivie, 2011; U.S. Census Bureau, 1985). In the early 1980s, a trend began whereby many firms supplanted company-funded DB pensions with employee-financed 401(k) and other defined contribution (DC) plans (Kruse, 1995). See Table 1 for a summary of DB and DC characteristics and Figure 1 for trends in participation by plan type.

[--- Insert Table 1 about here ---]

[--- Insert Figure 1 about here ---]

Common explanations for the decline in DB pensions is that they are more costly and necessitate that firms take on greater financial uncertainty. Ghilarducci and Sun (2006) found that a 10% increase in the use of DC in place of DB plans reduces employer pension costs per worker between 1.7 and 3.5%. Anecdotal evidence also supports the notion that firms transition their retirement plans due to cost savings. Companies such as GAF Corp (Rankin, 1983) and Hershey Foods Corp (Levy, 2006) replaced long-

[1] Better-than-assumed performance, which tends to occur when the stock market grows rapidly, allows firms to contribute less to their DB pension funds.

standing DB with DC plans and cited the cost savings as the primary motive in the decision. Recent survey evidence from the Government Accountability Office (2008) suggested also that DB plan changes are primarily a consequence of concerns with the volatility of plan costs.

The cost and risk accounts, however, must be set against the fact that the use of these plans provides benefits for firms and workers and that the plans' decline is tantamount to rewriting an implicit contract between the workers and firms. For example, when AM International and Wells Fargo terminated the use of DB plans, Robert Bradshaw, VP of Grumman Corporation, when asked whether his firm would consider doing the same, stated that the primary reason the firm would not do so is the adverse effect on employee relations. "Many of our employees are getting along in age … You start monkeying around with pensions and employees take notice" (Moskal, 1984). Exploring which organizational actors stand to benefit and which lose from such changes can therefore help explain how executives determine how to allocate retirement risk between workers and firms.

Defined Benefit Pensions and Retirement Risk

A key feature of DB pensions is the manner in which they allocate different kinds of retirement risk. Zelinsky (2004) identified three kinds of risk in retirement planning: 1) *funding* – the risk that the funds necessary to finance retirement benefits will not be contributed, 2) *investment* – the risk that retirement resources will earn an inadequate rate of return, and 3) *longevity* – the risk that a retiree will outlive her resources. In the case of DB plans, the firm bears all three. One of the main rationales for why firms are moving away from DB pensions is an unwillingness to bear this risk and the uncertainty that it brings (Boivie, 2011). For instance, worse-than-assumed performance of pension assets must be made up for in the form of increased contributions, making it difficult to estimate pension expenditures accurately. Absent a DB pension, workers must bear much of these retirement risks themselves.[2] The main retirement risk borne by workers in such an arrangement is early severance, whereby employees would likely lose at least some of their benefits. As a result, pension theory contends that for employees to be willing to forgo

[2]Social security, though not designed to provide sufficient post-retirement income for most individuals, is structured such that these risks are borne by the government.

wages for promised future benefits, DB pensions must be coupled with an implicit promise of continued employment (Lazear, 1986). Many scholars have thus characterized the DB pension as both an economic and social contract (e.g., Orr, 1998; Shleifer & Summers, 1988).

Defined Benefit Pensions and Long-Term Employment

Pension theory suggests that DB plans are structured in a way that encourages long-term employment. From the formula above, how much wealth an individual earns from her pension is commonly calculated as a function of a worker's average or final salary, years of service, and a benefit percent that increases at certain tenure milestones (e.g., 30 years). The wealth that accrues to individuals in a DB plan, therefore, is characterized by occasional sharp spikes, most notably, as the worker reaches her typical retirement date. By structuring the DB plan in a manner that rewards employees at a higher percentage as tenure increases without a subsequent drop in pay to offset the reward indicates that firms are structuring their DB plans as a long-term contract (Kotlikoff & Wise, 1985). Not surprisingly, a number of studies have revealed that these types of plans reduce rates of voluntary turnover (Mitchell, 1982) and lead to higher rates of employee tenure (Friedberg & Owyang, 2004). Surveys have also shown that workers with DB pensions are much less likely to express an intention to leave their firm and consider their retirement benefits a major reason for staying with their employer (MetLife, 2008; Towers Watson, 2010a). Because DB pensions contain explicit and well-documented statements regarding future contingent payment and employment, an examination of these plans can yield important insights into the structure of employment relationships (Gustman, Mitchell, & Steinmeier, 1994, p. 415).

POWER DYNAMICS AND THE CHANGING EMPLOYMENT RELATIONSHIP

Choices about how to allocate retirement risk and structure their employment relationships more generally are a principal strategic decision for firms. An organization’s goals and strategies are set by a negotiation process that occurs among different coalitions (Cyert & March, 1963; March, 1962), which consist of groups of individuals with similar interests seeking to have their preferences met by the organization. Coalitions often have divergent interests, and in most cases, no single group is able to

determine the goals pursued by the organization. Theories of relative bargaining power argue that the outcome from an exchange relationship results from the dependence one party has on another in obtaining a needed resource (Emerson, 1962). Thus, the relative power of different stakeholders, and changes therein, should be reflected in the goals, practices, and strategies used by the company.

In the US in the years following World War II, a set of institutional arrangements were erected whereby firms buffered workers from market forces and encouraged stable long-term employment. Firms' ability to provide such security was, in part, due to the oligopolistic and monopolistic positions these firms maintained in their product markets. Beginning in the early 1980s, this employment system was largely displaced by one stressing flexibility and cost containment. One popular explanation for why the employment relationship has changed is due to pressures from shareholders (Bidwell, et al., 2013). The shareholder value story contends that in response to sagging financial performance and undervalued assets – in part, a consequence of deregulation, technological advancements, and mounting global competition – groups of investors that had amassed considerable stakes in the largest US firms mobilized to pressure management to more closely attend to maximizing shareholder value (Davis & Thompson, 1994; Useem, 1996). As John Brian, CEO of Sara Lee stated, "Wall Street can wipe you out. They are the rule-setters. They do have their fads, but to a large extent there is an evolution in how they judge companies, and they have decided to give premiums to companies that harbor the most profits for the least assets" (Lowenstein, 1997). The rise of the shareholder value maximization logic, therefore, is thought to have turned executive focus more acutely toward financial returns as the ultimate measure of firm performance, giving financial markets outsized influence over firm structure and strategy.

That the employment relationship is beset by conflict is a hallmark of many of the earliest examinations of the organization of work (e.g., Bendix, 1956; Marx, 1978). While there is considerable emphasis on economic and institutional factors for why employment has changed, the conflictual view continues to animate much of our thinking about employment (e.g., Bidwell, 2012; Cobb, 2015). The shareholder value explanation can in many ways be seen as a contemporary instantiation of the view of the

workplace being the site of class conflict. Though often left implicit in these accounts, they typically emphasize the growth in power of investors and their ability to influence firm decision-making.

The narrative accounts that spurred interest in the examination of how shareholder pressures influence labor market outcomes have focused on broader changes in the structure of employment at the societal level. However, these same insights can also help motivate theory seeking to explain employment relationships at the firm level. Though many studies assume that firms have greater power than their workers do (e.g., Phillips, 2001), it is important to operationalize and measure levels of shareholder and employee power, as they are not uniform within companies over time (Dencker, 2009). Power in this context refers to "the capacity of one social actor to restrict the options available to another social actor in such a way that the ultimate action taken is consistent with the dominating institution's interest" (Glasberg & Schwartz, 1983, p. 327). In the following sections, I identify the interests and sources of power of investors and employees – two stakeholders with firm-specific investments and a concern with how retirement risk is allocated between firms and workers. I then examine the impact of these factors on firms' utilization of DB plans between 1982 and 2006.

Share Ownership

Since the writings of Berle and Means (1932), social scientists have been interested in understanding how stock ownership structure influences organizational action as a firm's controlling interest helps shape the political dynamics within a corporation and directly affects its goals and structure (Fiss & Zajac, 2004). In the modern US corporation, shareholders provide financial capital in return for a promise of economic returns from the operations of the firm (Kang & Sørensen, 1999). The power and influence of large-block shareholders is evidenced by their ability to influence firm outcomes by constraining certain decisions (Herman, 1981), thereby altering a firm's ability to respond to changes in its environment (Connelly, Tihanyi, Certo, & Hitt, 2010).

Importantly, however, there are various types of shareholders, such as families, mutual funds, and private equity firms, who may have different investment strategies, time horizons, and capacities for

influencing firms. Even financial institutions – the investors most frequently associated with the maxims of shareholder value maximization – vary in their strategies, interests, and levels of influence (Bushee, 1998). A more thorough examination of how shareholders influence firms' employment practices, therefore, should account for these considerations. First, I discuss two dimensions of share ownership structure – concentration and involvement – and describe categories of financial investors that differ along these dimensions, which should influence their capacity for altering firms' strategies. Second, I examine a conceptually and empirically distinct feature of equity ownership – investor time horizon – as research has found that institutional investors vary in their preference for long- versus short-term value creation. I examine two such types of investors – dedicated and transient – and argue that levels of ownership by each of these types will influence the extent to which a firm utilizes DB pensions.

Concentration and Involvement

Mintzberg (1983) suggested there are two primary dimensions of equity ownership that dictate the extent to which a shareholder has power: concentration and involvement. Concentration refers to the extent to which the shares of a firm's stock are closely held. When share ownership is widely dispersed, shareholder influence is reduced, granting executives greater discretion. As share ownership becomes more concentrated, owner influence increases. Throughout much of the 20th century, executive discretion was high and shareholder influence low, in part because of the widely dispersed share ownership present in most large US corporations (Mizruchi, 2013).

Involvement refers to the extent to which shareholders influence the firm's decisions or actions. Due to their willingness to monitor firms more vigilantly and engage more directly in the management of the firms in which they invest, shareholders are thought to have more influence on corporate decision-making. Following conventions in the literature (e.g., Jensen, 1989), I refer to detached investors as *passive* and involved investors as *active.* I distinguish between passive and active financial investors because, while theory suggests both types, on average, prefer firm strategies that enhance shareholder

value (Useem, 1996), these two types of investors utilize different investment approaches that may affect their preference for certain strategies and their ability to influence firm outcomes.

I consider passive and active financial investors' preferences for DB in relation to firm-years with dispersed stock ownership. I used dispersed stock ownership, whereby no one controls at least 5% of the firm's stock,[3] as my comparison category because the prototypical US firm of the post-World War II era – the period when firms became a key bearer of retirement risk – is characterized by dispersed ownership (Davis, 2009). Using dispersed ownership as the baseline, therefore, allows for a more direct comparison of how a change in equity ownership affects a firm's willingness to bear retirement risk over time.

Passive financial investors. Passive financial investors, which include mutual funds, insurance companies, and investment banks, are the most prevalent shareowner type of US corporations today. Notwithstanding their large corporate holdings, these investors are considered passive because, though they can vary in the extent to which they engage with their investments, they typically do not engage directly in issues related to corporate governance (Davis & Kim, 2007). Despite their reluctance to engage actively in corporate governance, passive investors are able to impact corporate decision-making through several means. First, institutional investors' clients sign over their voting rights, centralizing the share ownership power into a single entity (Bogle, 2005). Firms, therefore, are responsive to passive investor pressures because the liquidation of their shareholdings reduces the value of the company (Parrino, Sias, & Starks, 2003). Second, passive investors' ability to initiate and engage in various forms of activism can affect the types of strategies firms undertake (Filatotchev & Toms, 2006). Finally, anecdotal accounts substantiate that these shareholders often work behind the scenes to pressure the firms in which they invest (Craig, 2013). With their preference for short-term value maximization and their capacity to influence corporate decision-making, I expect there to be a negative impact on DB utilization as these investors become the dominant shareholder in a firm.

[3] In 1977, the Securities and Exchange Commission changed the proxy threshold to 5%, meaning that all shareholders controlling at least 5% of a firm's shares must publicly disclose their holdings. Academic research has indicated that a 5% ownership stake of common stock is sufficient to exercise control over a firm and as such, has become the conventional measure of owner control (e.g., Fiss & Zajac, 2004; Shleifer & Vishny, 1986) .

Hypothesis 1: *In comparison with dispersed share ownership, a firm's largest shareholder being a passive financial investor will be negatively related to the firm's defined benefit plan utilization.*

Active financial investors. In contrast to passive financial investors, other financial investors are more active due to their willingness to engage in the corporate governance of the firms in which they invest. Included in this category are private equity firms, venture capital firms, hedge funds, and other private investors and groups known for taking an active role in management (e.g., Carl Icahn and Frank Lorenzo). I refer to these investors as *active* financial investors because they typically participate in the management and/or corporate governance of their investments.

One of the advantages of private equity arrangements is that they allow the owners to have direct oversight over managers and their performance (Jensen & Murphy, 2009). Private equity firms can influence organizations through two mechanisms: (1) through their large ownership holdings, and (2) by using debt. The weight of debt leverage forces management to focus on short-term profits to meet the firm's interest commitments. Hedge funds, though not considered to be as involved in their investments as are private equity firms, are thought to have an even shorter investment time horizon (Cumming, Siegel, & Wright, 2007). Moreover, large private investors, while not homogenous in their preferences, are also theorized to prefer firm strategies that encourage wealth appropriation from workers and other stakeholders (Shleifer & Summers, 1988). Several scholars argue that active financial investors are disruptive to existing employment relations (e.g., Appelbaum & Batt, 2014); however, studies examining the effects of private equity investments on employee welfare have produced conflicting findings (see Wright, Bacon, & Amess, 2009). Given these mixed results, it is important to investigate further how active financial investors affect employee benefits.

Both empirical and anecdotal evidence suggests that hostile takeovers and LBOs were often accompanied by changes to DB plans. Ippolito and James (1992) found a significant relationship between DB plan terminations and LBOs, and the US Congress expressed concern that corporate takeovers were responsible for a rash of pension terminations in the mid-1980s (*U.S. Senate*, 1987). For example, when

Ronald Perelman took over Revlon Inc. in 1985, he quickly terminated the company's pension plan and extracted more than $100 million in surplus pension assets (Schultz, 2011), a tactic similar to that taken by Carl Icahn at Trans World Airlines Inc. that same year. Private equity and other private investor groups were also responsible for "pension dumping," whereby firms file for bankruptcy in large part to rid themselves of their DB pension liabilities (Hawthorne, 2008). I therefore expect DB utilization rates to be negatively affected when these investors become the dominant owner in firms.

Hypothesis 2a: *In comparison with dispersed share ownership, a firm's largest shareholder being an active financial investor will be negatively related to the firm's defined benefit plan utilization.*

Moreover, because of these investors' greater level of involvement in the firms in which they invest – providing them with even greater influence over organizational decision-making – I expect the impact of active financial ownership to be greater on DB utilization rates than is the impact of passive financial share ownership.

Hypothesis 2b: *Due to their greater levels of involvement, **t**he negative effect of active financial share ownership on defined benefit utilization will be greater than that of passive financial share ownership.*

Investor Time Horizon

Research has indicated that institutional investors vary in the extent to which they prefer long- over short-term returns. Bushee (1998) developed a typology for classifying institutional investors as fitting into one of three categories: dedicated, transient, and quasi-indexers. Dedicated investors desire longer-term dividend income and capital appreciation, thereby providing more stable, longer-term share ownership. These investors acquire concentrated positions in a smaller number of firms, have extended investment horizons, and are characterized by large investments and low stock turnover (Bushee, 2001). Such a strategy encourages these investors to overlook short-term earnings declines as long as the firm maintains its long-run value prospects (Connelly, et al., 2010).

Transient investors, however, are thought to encourage short-term firm strategies (Porter, 1992). Transient investors tend to acquire less-concentrated equity stakes in a large number of firms and have

high portfolio turnover. A preference for short-term earnings, diversified holdings, and high portfolio turnover leads transient investors to devalue long-term firm strategies (Schnatterly, Shaw, & Jenning, 2008), as they are unlikely to reap the benefits from them (Connelly, et al., 2010). As a result, these shareholders are thought to motivate executives to engage in actions that enhance short-term earnings, even at the expense of long-term growth (Bushee, 2001).

A third group, quasi-indexers, also employ a buy-and-hold strategy, but because they are highly diversified investors with a strategy to follow broad indexes, quasi-indexers have largely abdicated any monitoring role and have a limited threat of exit, making them of less interest from a governance perspective (Bushee, 1998). As such, I do not offer a hypothesis about the influence of quasi-indexers.

Dedicated and transient investors' relative preferences for long- versus short-term earnings has important consequences for understanding firm strategy, as executives often make decisions based on shareholder preferences (Dalton, Daily, Certo, & Roengpitya, 2003). Research has shown that executives are more likely to cut R&D expenditures to meet earnings targets if transient investors dominate the firm's equity ownership base (Bushee, 1998) and more (less) likely to engage in strategic versus tactical competitive actions if dedicated (transient) investors dominate (Connelly, et al., 2010). DB pensions are costly and require firms to take on additional risks that create short-term financial uncertainty. Moreover, their benefits to firms are long-term in nature and difficult to quantify. Therefore, due to dedicated and transient investors' different preferences for short-term returns, I expect that DB utilization rates will be greater when a firm's rate of dedicated investor share ownership increases and lower when a firm's rate of transient investor share ownership increases. Because these are continuous, independent measures and each firm can have both dedicated and transient investors, I examine the impact of both types on share ownership as they may have independent affects upon firms' retirement plan strategies.

Hypothesis 3: *A firm's level of dedicated financial share ownership will be positively related to its defined benefit plan utilization.*

Hypothesis 4: *A firm's level of transient financial share ownership will be negatively related to its defined benefit plan utilization.*

Employees

Labor is a critical resource for the proper functioning of the firm as organizations depend on worker skill and effort to transform resources into output. It has been established that workers' ability to secure stable, more remunerative employment relationships depends on their power (Bidwell, 2013; Freeman & Medoff, 1984; Sørensen, 1994). Individually, employees have little power to affect an organization's goals and strategies, but employee power can be enhanced greatly when workers mobilize and act collectively. The primary means by which employees can do so is via unionization, which provides workers an institutionalized apparatus to exert influence on firms by engaging in or threatening strikes and slowdowns and expressing worker demands through collective bargaining. Though unionization rates in the U.S. have declined greatly over the past several decades, there exists considerable variation in the degree of influence unions have over time on firms, which should result in variation in the types of practices firms use to shoulder risks on behalf of their workers (Lewin, 2005).

There are several reasons to expect worker power to be positively associated with DB pension utilization. First, in a collective bargaining setting, the average worker's interests predominate. Because the average worker is likely to be older and have higher exit costs, when workers bargain collectively, they will tend to seek greater security (Goldberg, 1980). In a DB arrangement, firms, rather than workers, bear most of the retirement risk, making these plans more attractive to workers *ceteris paribus* (Zelinsky, 2004). Second, we should expect employees to want to maximize their remuneration. As it pertains to DB plans, evidence indicates that they pay out greater, more stable benefits than do alternative arrangements and are an important source of post-retirement income for many workers (Wolff, 2003). Finally, because the collective bargaining agenda for most of the largest US labor organizations has long included provisions for workers' retirement (Lichtenstein, 1995, chap. 13), worker expectations, vested interests, and other inertial factors may also encourage both workers and their union leaders to continue to demand

DB pensions as a part of their employment contracts. As the influence of unions in a firm increases, I expect this will have a positive impact on DB utilization.

Hypothesis 5: *A firm's level of unionization will be positively related to its defined benefit utilization.*

DATA AND METHODS

The Sample

Because my central interest is the causes of changing DB utilization, I focus my analysis on firms most likely to have DB pension plans between 1982 and 2006. Previous research has suggested that the most likely adopters of DB plans were large firms serving national markets (Ippolito & Thompson, 2000). Though it is also important to understand trends in retirement plan utilization of all firms, I focus on these firms during this period because it was large corporations that were most likely to provide long-term, stable employment (Bidwell, 2013) and that were also most likely to be subject to the changing competitive and ideological landscape that began in the 1980s and continued through the next two decades. Furthermore, 1982 marks the first year that a Fortune 500 firm adopted a 401(k) plan, the legal uncertainty surrounding such plans having been clarified in that year (Whitehouse, 2003). As such, 1982 was the year that both the means and the rationale to replace the DB pension paradigm emerged.

A relevant peer group, therefore, for an analysis of DB utilization and the shifting of risks more generally, is the largest US firms. A common practice among researchers studying large firms is to draw their sample from a single year, which can create survivorship bias. Because the study covers a long period in which fully one-third of the firms composing the Fortune 500 in 1980 did not exist by 1989 (Davis & Stout, 1992), I wanted to capture these dynamics by sampling from multiple points in time. The initial sample included all firms in *either* the 1981 Fortune 500 list of largest industrials, the 1995 Fortune 1,000 list, consisting of the 500 largest industrial and 500 largest service firms, or the Fortune 500 for 2007. All firms – whether publicly traded or privately owned – are included, which generated an unbalanced sample of 1,357 firms. Though the majority (90.8%) of firm-years of my study are of publicly traded companies, many firms in my sample were privately owned then taken public during the period of study, and a number

of others were publicly traded and taken private. An important feature of this data and this sample is that they enabled me to track firms over time as their status as a public or private company changed.

Variables

DB utilization. DB utilization is measured as the log number of DB participants. The number of participants in a DB plan, controlling for the size of the firm, represents the extent to which a company relies on these plans to remunerate its entire workforce. Though during this period some firms abandoned the use of DB pensions, in my sample, this is a much less common event than is decreasing the utilization of DB plans; 9% of firms abandoned their DB plans, whereas the average firm covered nearly 50% more of its employees in DB plans in 1982 than in 2006. Furthermore, among firms that abandoned their DB plans, these firms had significantly lower rates of participation prior to abandonment than did non-abandoning firm and 29% of firms abandoned during a bankruptcy. In sum, while abandoning a DB plan is a consequential event, even more profound is the decline in rates of DB participation over the period. In supplementary analyses I do explore factors leading to DB abandonment.

The measure of DB utilization was constructed by using data from the Form 5500 files. Each year, firms offering retirement plans to their workers must submit a Form 5500 report that details information about the plan, the number of participants, and other plan characteristics. The company identifier in the Form 5500 is the Employer Identification Number (EIN). These numbers can change over time, and companies can have multiple EINs operant in any given year. To ensure no data loss, I manually identified firm EINs for each year. I then verified, at the plan level, each firm's retirement data.

Firms can have multiple plans operating simultaneously in a given year, and in my sample, companies have between 0 and 167 different retirement plans operating at one point in time. In total, there were 120,144 plan level observations. To create firm-level figures, I aggregated across all plans to create an overall participant count for each firm, for each type of plan, and for all years the firm was active between 1982 and 2006. Prior to aggregation, I verified at the plan level of each firm's retirement data. It is common in the pension literature to exclude all multiemployer plans, which are typically collectively

bargained and cover workers from a variety of firms (Even & Macpherson, 2014). These are particularly common in building trades and trucking, which are industries not well represented in my sample. As a result, only 1.2% of total plans were multiemployer plans, and including these had no impact on the results. Further details on how I constructed these data are available in an e-appendix (insert hyperlink).

Passive and active share ownership. Because I am interested in examining categorical distinctions among types of shareholders, I used dummy variables to identify the largest shareholder in each firm annually based on the typology described in Kotz (1978) and Herman (1981). The use of dummy codes is also appropriate because only shareholders who hold 5% or more of a firm's stock must be reported. In the case of dispersed stock ownership firms – that is, those where no entity controls at least 5% – there is no definitive way to discern how many shares the largest shareholder controls. Furthermore, a significant number of firm-years (9.2%) companies are not publically traded, and notably, 22.7% of firm years in which an active financial investor is the largest investor are when the firm is not publically traded, such as in the case of an LBO. The use of dummy codes enables me to include these firm years and examine the influence of different types of shareholders for the full sample of firms.

Share ownership is determined by identifying the largest equity ownership block greater than 5% *Passive finance* investors include mutual funds, insurance companies, and investment banks. *Active finance* investors include private equity, hedge funds, and other private investors or groups. I consider a firm in which no entity owns more than 5% of the stock to be a dispersed stock ownership firm, which serves as the comparison category in the analyses below. Among firms I examine here, in 1982, dispersed stock ownership is the largest category, composing 26.4% of the sample. By 2006, only 5.5% of firms had no shareholder controlling at least 5% of a firm's shares. Therefore, using dispersed stock ownership as the omitted category offers the most direct comparison of how a change in a firm's share ownership structure affects DB utilization. I also include as a variable *other* share ownership, which covers types that do not fall in the categories above, such as firms in which a family or another firm is the largest owner. The data on share ownership were taken from the Corporate Data Exchange Stock Ownership Directory

(1981), Spectrum 5% Stock Holdings (CDA, 1981-1994), Compact Disclosure, online proxy statements available from the SEC, and corporate history data from Hoover's. The data are lagged one year.

Dedicated and transient share ownership. While the aforementioned ownership variables focus on categorical distinctions between the largest investors, I also included a continuous measure of institutional share ownership that distinguishes institutional investors by their investment strategies. Following Porter's (1992) typology, Bushee (1998), using factor and cluster analyses on institutional investor strategies, classifies investors into three types: *dedicated*, *transient,* and quasi-indexer.[4] For each firm in each year, I take the percentage of the total number of shares outstanding for the focal firm that is controlled by institutional investors classified in each of the three types. Because this classification system applies only to firms that are publicly traded, analyses using these measures are conducted only on publicly traded companies. Unlike measures of overall institutional share ownership, this measure has the advantage of assuming that institutional investors' interests vary, and thus their impact on firm strategy and structure varies as well. All institutional investors are classified annually so that any change in investment strategy is reflected in the data. The data come from Bushee (1998) and are lagged one year.

Unionization. I include a measure of employee power, *firm unionization*, which is the log number of DB participants that are covered by collectively bargained pension plans. These data come from the Form 5500 reports, which include a field indicating whether or not a pension plan is part of a collective bargaining agreement.[5] Unions often stipulate that some firm decisions, particularly those directly affecting employees covered by a collective bargaining agreement, require union participation (Freeman & Medoff, 1984). Collectively bargained plans, therefore, limit the ability of firms to unilaterally modify the plan's terms. I expect this constraint to help safeguard the number of participants in firms' DB plans. As a robustness check, I examined the impact of industry unionization on DB utilization, as firms in the same industry can have different rates of unionization but converge around the same types of practices due to

[4] In the results below I do not include a measure of quasi-indexers. Doing so has no material impact on the findings.
[5] The question in the Form 5500 reports relating to a plan being collectively bargained changed in 1988. Prior to that time, one had to infer collective bargaining status from different questions and by examining the plan description. I manually coded some collectively bargained plan data for the years prior to 1988. I ran analyses for the years 1988 and beyond, and the results were largely consistent with those presented here.

coercive pressures and the establishment of industry-wide norms. The industry unionization data are taken from Hirsch and Macpherson (2003). In the analyses presented here, I include only the firm unionization; however, the results are not substantially affected when using the industry measures.

Controls. DB utilization may relate to several factors not included in the discussion of the hypotheses. A firm cannot have more DB participants than it has employees, necessitating that I control for employment size, operationalized as the log of the number of *employees*. I control for *firm age*, as it is likely to be related to the adoption of certain employee governance practices and *revenue*, as it may be related to the ability for firms to finance their DB plans. Though employment and revenues are highly correlated, tests for multi-collinearity reveal no issues with including both measures, and excluding revenues in the analyses has no substantive impact on the hypothesized relationships. To account for performance, I took a 3-year moving average of the company's return on assets (*ROA*). Because the ROA figures measure had a few extreme values, I winsorized the figures at the 1st and 99th percentiles (-25.61 and 21.71%, respectively) prior to averaging. I include a measure of long-term debt to total assets (*LTD/Tot assets*), lagged one year, as a measure of the firm's relative covenant constraints. Because this variable has some extreme values at the upper end, I winsorized this figure at the 99th percentile (84.38%). The employee and financial data come from Compustat and the Corporate Affiliations database.

Anecdotal evidence shows that several corporations went through bankruptcy, in part, to shed themselves of their DB pension liabilities (Hawthorne, 2008). Hence, I created a binary measure for when a firm is in bankruptcy (*bankrupt*): '0' for years not bankrupt and '1' for years the firm is bankrupt. These data were taken from the LoPucki Bankruptcy Research Database (2010) and company history data found in Mergent, Hoover's, and various newspaper sources.

Though I focus on ownership as a measure of shareholder influence, a growing literature has implicated financialization as a critical driver of changes in the employment relationship (e.g., Lin & Tomaskovic-Devey, 2013). Financialization theory suggests the extent that firms maintain or enhance earnings outside of their normal business operations, and managerial priorities are altered such that

maximizing short-term returns supersedes interest in growing market share. Therefore, I include a measure of *financialization*, which is measured as the ratio of financial assets – short-term investments, equity investments and advances, and other investments and advances – to total assets. I use a measure of financial assets because assets measure firm *intent* to generate returns from financial investments, which executives can control unlike financial earnings. The data come from Compustat and are lagged one year.

In personal interviews, senior executives in the retirement practice of multiple benefits consulting firms all implicated the risk of managing a DB plan as the primary impetus for firms' decisions to diminish their use of DB pensions. Large-scale surveys also have suggested that firms' desire to change their retirement plans are primarily in response to concerns with volatility of plan costs (Government Accountability Office, 2008; Hewitt Associates, 2003; Towers Watson, 2010b). In a context where a firm's financial volatility increases, the concern of bearing the additional risk of a DB pension is more manifest, therefore increasing the likelihood that it will engage in actions to shift that risk onto workers.

Following Beckman and colleagues (2004), I measure firm-specific uncertainty (*firm uncertainty)* as the coefficient of variation of the focal firms' annual daily stock closing price in the prior year. The data come from the Center for Research on Security Prices. As a robustness check, I considered an alternative empirical proxy: the volatility of accounting rates of return, calculated as the seasonally differenced quarterly ROA over the subsequent 5 years, where ROA is income before extraordinary items, scaled by average total assets for the quarter (see Bova, Kolev, Thomas, & Zhang, 2014). These data come from Compustat and are lagged one year. I used the stock volatility below; however, the results are not materially affected by the choice of measure. Because financials are not always available for non-publicly traded firms, I restrict the inclusion of financial controls to analyses of publicly traded firms.

Several industry-level controls may be germane to the study of pensions as well. To account for industry-level restructuring, I included a lagged count of mergers and acquisitions (*mergers*) at the 2-digit SIC code level. These data come from the SDC Platinum database. Additionally, I control for the possible effect of the retirement practices of industry peers on a firm's retirement policy by creating the variable

industry DB rate. This figure represents the percentage of employees participating in DB plans among firms in my sample sharing the same 2-digit SIC code.

I include a measure of stock market performance, *SP500,* as the growth or decline of the stock market can differentially alter firm and employee preferences for the two types of retirement plans. Stock market declines make DB pensions more costly to firms, as the firm has to compensate for the shortfall with increased contributions to its DB plans. However, stock market declines make DB pensions more appealing to employees because the firm bears the risk and makes up for the shortfall. I measure stock market performance by taking the 3-year moving average of returns in the S&P 500 index. To control for unobserved effects that may matter for a given year, I control for time using year dummy codes. Descriptive statistics and correlations are presented in Table 2.

[--- Insert Table 2 about here ---]

Analytic Approach

In this study, the unit of analysis is the firm, and the unit of observation is the firm year. My primary dependent variable is DB utilization, which I measure as log value of the counts of participants in DB plans. To examine the relationship between DB utilization and investor and employee power, I used fixed effects, pooled time-series regression analysis. A fixed effects model accounts for firms' unobserved characteristics that do not vary over time that may affect DB utilization. This specification is achieved by subtracting the values of each observation from the firm mean, removing all between-firm differences and leaving only within-firm variation to be explained by the covariates. Specifically, I estimated the effects of the covariates on the log of firm DB participation counts:

$$\boldsymbol{Y_{ij} = \beta_0 + \beta_1 X_{1ij} + \ldots + \beta_p X_{pij} + \alpha_j + \varepsilon_{ij}}$$

where all firm-specific effects are accommodated by α_j and within-firm effects being explained by the covariates. A fixed effects framework strengthens the causal inferences about the effects the covariates have on firm retirement practices by ruling out the possibility that firms that adopted those practices had stable unobserved preferences for their utilization. Furthermore, because fixed effects allow for the

correlation between α_j and all X_{ij}, whereas a random effects does not, under most conditions a fixed effect is considered to be a more convincing estimation method (Wooldridge, 2006). A Hausman test indicated that the fixed effects model was appropriate ($\chi^2 = 62.51$, $p < .001$).

RESULTS

The results of the fixed-effects regressions on DB utilization are in Table 3. Because my sample includes years in which firms were not publicly traded and several covariates are available only for public companies, the first two models in the table analyze the full sample of firms and include no financial variables. In models 3 through 5, I added financial variables, and the sample includes only those years in which firms were publicly traded. Model 1 contains the results for the effect of the nonfinancial controls on DB utilization. In model 2, I added the shareholder category and unionization data, testing the impact of these variables on the full sample of firm-years. Model 3 consists of all control variables, allowing me to examine the impact of revenue, debt, firm performance, financialization, and uncertainty on DB utilization. In model 4, I examined the impact of passive and active financial investors on DB utilization with all control variables included. Model 5 contains the results of the full model.

Across models, several control variables significantly affected DB utilization. The number of participants in DB plans is positively the log number of employees, firm revenues, firm performance, and debt constraints. Firm bankruptcy has a negative effect on DB utilization, though the effect is attenuated in the full model. When a firm's largest equity holder is an entity in the *other* ownership category, which encompasses share ownership of 5% or more by any entity other than a passive and active financial investor, DB utilization is lower than when share ownership is dispersed. Industry rates of DB participation are associated with higher rates of DB utilization as are M&As at the industry level. Models 3–5 indicate that firms' investments in earnings-generating financial assets is negatively related to DB utilization, supporting the claim that financialization is associated with changes to employment practices. The results also show that the level of firm uncertainty is negatively related to DB utilization.

[--- Insert Table 3 about here ---]

The results for the hypotheses related to DB participation are shown in models 2, 4, and 5 in Table 3. Hypothesis 1 predicted that passive financial share ownership would be negatively related to the number of DB participants. The results indicate this investor type has a significant, negative relationship with DB utilization, offering support for the hypothesis. Hypothesis 2a stated that active financial share ownership will be negatively related to DB participation. In Models 2, 4, and 5, active financial share ownership is significantly and negatively related to the number of DB participants, supporting the hypothesis. Hypothesis 2b predicted that because active financial investors have greater influence, their impact on DB utilization will be greater than that of passive financial investors. In model 2, there is a significant difference in DB participation between active and passive financial ownership, $F(1, 17338) = 16.37$; $p = 0.0001$. In model 4, with all control variables included, there remains a significant difference between active and passive financial share ownership, $F(1, 15450) = 7.25$; $p = 0.0071$. In the full model, however, there is no significant difference between the two, $F(1, 14972) = 0.01$; $p = .9041$. This attenuated effect of active financial share ownership is in large part due to stock volatility tending to be higher in these firm years. As such, there is only modest support for hypothesis 2b.

In model 5, I examined the impact of dedicated and transient share ownership on DB utilization. Hypothesis 3 predicted that dedicated institutional share ownership would be positively related to DB utilization, whereas hypothesis 4 predicted a negative relationship between DB utilization and transient share ownership. Supporting 3, the results support the argument that in firms where larger ownership stakes are held by institutional investors that take a buy-and-hold strategy, DB utilization is higher. These results are consistent with those of previous studies that found that higher equity stakes by dedicated investors is positively associated with longer-term corporate strategies. Contrary to expectations from Hypothesis 4, the percentage of transient ownership has no significant relationship with DB utilization. Lowering DB utilization is a way for firms to lower costs and shift risk onto workers; however, those benefits are realized over several years. The high velocity with which they trade in and out of stocks may discourage such investors from looking at DB pension cuts as a way to generate returns in the short term.

Because employees have a vested interest in firms' shouldering retirement risks and maintaining protection of their retirement assets, I predicted that employee power would be positively associated with DB utilization. Supporting hypothesis 5, firm unionization is positively and significantly related to DB plan utilization. In analyses available upon request, I also examined the impact of unionization on DB utilization of nonunionized participants. In these analyses, the dependent variable is the log of DB participants not in collectively bargained plans. To calculate this measure, I took the number of total DB participants and subtracted the total DB participants in collectively bargained plans and took the log value. The results are consistent with those above. Much of the research on unionization in the United States has argued and found that unions have spillover effects that enhance the welfare of nonunionized workers (e.g., Bidwell, 2013; Western & Rosenfeld, 2011). My findings, support these claims and suggest that the presence of unions at the firm level protects the retirement benefits of all workers in the firm.[6]

Supplemental Analyses

Error correction model. In observational studies of this type, establishing causality between the covariates and the dependent variable can present a significant challenge, and I am keenly aware of concerns about endogeneity affecting the associations I document along with any inferences made about causality. Because changes in a firm's pension policy in time *t* may be realized over the course of multiple years, establishing causality between covariates and DB utilization is difficult. I attempt to address this empirically using an autoregressive model: the single-equation error-correction models (ECMs). In these models, I include firm-clustered standard errors to account for firm-level heteroskedasticity.

The single-equation ECMs used in the analysis are specified as:

$$\Delta \boldsymbol{Y_t} = \boldsymbol{\alpha_0} + \boldsymbol{\alpha_{1,j}} + \boldsymbol{Y_{t-1}} + \boldsymbol{\beta_1}\Delta \boldsymbol{X_{t-1}} + \boldsymbol{\beta_2}\Delta \boldsymbol{X_{t-1}} \ldots + \boldsymbol{\varepsilon_t}$$

where ΔY_t denotes the first difference of the dependent variable ($Y_t - Y_{t-1}$); α_0 demotes the grand mean; $\alpha_{1,j}$ denotes firm year deviation; β_1 denotes the contemporaneous coefficient, which absorbs any

[6] Analyses also revealed curvilinear relationships between DB utilization and five covariates: firm age, revenues, performance, financialization, and dedicated share ownership. In a separate analysis, I included the quadratic term for each of these five variables into the full model with all other covariates. None of the hypothesized relationships were affected by including the quadratic terms. In all cases, the point of inflection encompassed a relatively small share of observations. For the sake of parsimony, I did not include the quadratic values.

endogenous relationship between the explanatory covariate and the dependent variable; β_2 denotes the error correction rate of Y; and β_3 denotes the impact of X_{t-1} on ΔY_t. I identify the relationship between the covariates and dependent variable by estimating the effect of the independent variables on future DB utilization, holding past DB utilization and concurrent changes in the covariates constant. Therefore, any concurrent, endogenous association between covariates and the outcome variable – such as the case when a DB policy change is accompanied by a change in share ownership – is accounted for in β_1, which is not used to identify the causal relation between the covariate and DB utilization. The results of the ECM analyses can be found in models 6 and 7 in Table 4 and largely reinforce the OLS results, with a few exceptions. The long-run impact of transient stock ownership, which was not significant in the OLS regressions, is significant and the direction predicted in hypothesis 4. Consistent with the results from the OLS regressions, the long-run impact of the remaining share ownership variables and firm-level unionization are significant predictors of firms' DB utilization. While I cannot completely rule out concerns of endogeneity, because the ECM takes into account the impact of past DB utilization and changes in the covariates, I am more confident that the relationships hypothesized here work in the theorized direction and are not correlational or the result of reverse causality.

[--- Insert Table 4 about here ---]

Dispersed stock ownership and share ownership concentration. In analyzing the descriptive statistics, when the share ownership of a firm is dispersed, I found that the firm has the greatest levels of DB utilization. To gain a better understanding of how different types of ownership affect DB utilization, in supplementary analyses available in the e-appendix (insert hyperlink), I ran separate regressions for each of the ownership variables of interest. In effect, I compared each share ownership type to all years a firm had a different share ownership type. The results showed that when a firm had dispersed stock ownership to all other years in which ownership is another type. Research has found that mangers with greater discretion extract higher pay for themselves and their workers (Bertrand & Mullainathan, 1999) and are more apt to consider the interests of non-shareholding stakeholders (Kacperczyk, 2009). That dispersed

stock ownership is associated with greater levels of DB utilization is consistent with these findings and suggests that the absence of shareholder pressure frees executives to attend to employee interests.

I also examined the influence of share ownership concentration on DB utilization on the publicly traded firms in my sample by including a measure of *percent ownership* – the percentage of the shares owned by the largest shareholder in a given year. The mean values of share ownership percentage for passive financial, active financial, and other owners are 9.9, 29.9, and 16.5, respectively.[7] In Table 4, the categorical variables capture differences in share ownership concentration; thus, the inclusion of percent owned in the model separates the influence of ownership type from the percentage of shares owned. The analyses revealed that when adding the percentage of shares ownership to the model, all other predicted relationships are confirmed. The results also indicated that the percentage of shares owned by the largest shareholder is negatively and significantly related to DB utilization.

Abandoning DB plans. During the period of study, nearly 9% of firms in the sample completely abandoned the use of DB pensions. In analyses available in the online supplement, I examined whether the hypothesized covariates also impact abandonment. The results indicate firm unionization has a negative and significant relationship with firms' abandonment of DB pensions. Active financial share ownership is also significant at the .10 level in the full sample with non-financial variables, but it is not significant in the full model. No other hypothesized covariates have any significant impact on abandonment. Because abandoning the use of DB pensions is a contentious practice, it is a relatively rare event and occurs most often in times of significant financial distress. It stands to reason that many of the financial and equity ownership measures that affect DB utilization would not also affect the incidence of DB abandonment.

Defined contribution utilization. In aggregate, the decline in DB utilization has been met with a corresponding increase in DC utilization by firms. Therefore, any analysis of DB pension utilization can be enhanced by some discussion of the growth of 401(k) and other types of DC plans, as the use of these plans increased considerably during this period. 401(k) plans, the most prominent type of DC plan today,

[7] This does not, however, include the 22.7 % of privately held firms that are controlled by active financial investors, which have a strong majority control over the enterprise. If I were to assume that in such cases the active financial investors had 75% control, ownership concentration of this category would increase to 43.4%.

are structured such that employees voluntarily contribute a portion of their pre-tax income to an account, and employers often match a portion of these deposits.

Though there are a number of challenges associated with comparing DB and DC utilization, in analyses available online (insert hyperlink), I compared the impact of the control variables on DC utilization to DB utilization, firm employment, debt constraints, and financialization all yield similar results. The analyses also revealed that passive financial share ownership and unionization have similar effects on DC as does DB utilization. However, in comparison with firm years of dispersed stock ownership, active financial share ownership has no significant effect on DC utilization. Percentages of both dedicated and transient share ownership are positively related to DC utilization, indicating that investors of both types are supportive of the use of DC plans as a means to remunerate workers.

DISCUSSION

Battles over the purpose of the corporation occur at the societal level in the form of policy, at the sector and industry level in the form of heightened competition, and at the firm level. I focus on the firm level, which is where the impact of financial pressures on employment practices are likely to be most direct and because most large-scale studies on employment are not conducted at the firm level of analysis. As such, this study joins other research attempting to highlight how "shareholder value" was fought inside the firm (e.g., Fiss & Zajac, 2004; Zorn, 2004). This study's aim was to investigate how these contestations over the purpose of the firm were played out in the context of employment relationships. To do so, I examined how power differentials between financial investors and employees influence the extent to which firms bear the additional risk of offering DB pensions.

The findings provide support for most hypotheses, showing that share ownership by large-block, passive and active financial investors is associated with lower rates of DB utilization. As predicted, however, share ownership by dedicated institutional investors, who are characterized by a preference for long-term value accumulation and large stakes in a relatively small number of firms, is positively associated with DB utilization. Supplemental analyses suggested that when a firm has dispersed stock

ownership, that firm has higher rates of DB utilization. These findings support earlier research that concluded that greater managerial discretion encourages managers to act in their own self-interest and/or in the interest of non-shareholding stakeholders (Bertrand & Mullainathan, 1999; Kacperczyk, 2009). And though not hypothesized, the findings revealed that when firms attempt to enhance earnings outside of their normal business operations by holding higher levels of financial assets, DB utilization is lower. The results also support the argument that financial volatility motivates firms to shift retirement risks and costs onto workers. In total, these findings suggest strongly that as executive attention to financial interests is heightened, one response is to shift retirement risks onto their workforce.

The findings also indicate that employee power, as evidenced by firm-levels of unionization, is related to greater levels of DB utilization, suggesting that the presence of unions at the firm level is an important determinant of retirement coverage of all employees – not just those under a collectively bargained agreement. As the prevalence of unions has declined in the United States over the past several decades, no institution has emerged to counterbalance this loss of employee power. That unions are able to secure better benefits for union and nonunion employees in the firms in which they have a presence provides additional evidence that the loss of employee power is an important mechanism in explaining the shifting of retirement risk from firms to workers.

The results have a number of implications for organizational theory. First, one of the challenges in researching the impact of stakeholder influence on firms' HR practices is the difficulty in obtaining firm level data on a large number of firms, over time. While the impacts of labor power and financial markets can manifest at the societal level through changes in laws, regulations, and institutions and at the industry level through pattern bargaining and heightened competition, it is at the level of organizational decision-making where such pressures are translated into actions that affect workers. Inferring organizational processes from societal- or industry-level data risks glossing over the mechanisms that might shed light on why the employment relationship has become more precarious (Kalleberg, 2009; Wry, Cobb, & Aldrich,

2013). Taking a firm-level focus, therefore, allows for more nuanced theorizing on the impact different stakeholders have on how risk is allocated between workers and firms.

There is also little consensus on how best to capture shareholder pressures, as it is alternatively measured as firm performance (Budros, 1997), the prevalence of employees in publicly traded firms at the industry level (Goldstein, 2012), and the prevalence of mergers and acquisitions occurring at the industry level (Fligstein & Shin, 2007). While each of these measures may provide clues regarding the impact of finance on corporate decision-making, this study suggests that one way to think about shareholder pressures is to consider who these investors are, what their interests are in a particular situation, and what the capacity they have to influence the firms in which they invest. In nearly 40% of my sample, the largest shareholder is either a passive or active financial investor. The prevalence of investors during the period of study serves as an indicator of how attuned to shareholder value the firms included in my sample were likely to be. Relatedly, this study finds that financial investors with an interest in the long-term value enhancement of their investments promote the use of DB pensions. While a body of literature finds that owners vary in their preferences and thus in the types of strategies firms employ (e.g., Shin & Seo, 2011), narrower categorizations of shareholder influence have been largely absent in the study of the impact of shareholder value maximization on employment practices. As such, this study offers an important extension to our understanding of the factors leading to the decline in DB plan utilization over the past 30 years and suggests that a proximal factor for why workers bear greater employment risk is the changing equity ownership structure of US corporations.

Current macro-organizational research examining the influence of shareholder pressures on employment tends to focus on a narrow set of outcomes, such as managerial employment (e.g., Goldstein, 2012), layoffs and downsizing (e.g., Fligstein & Shin, 2007), and employee tenure (e.g., Bidwell, 2013). While recognizing the importance of this research, it is worthwhile to examine other practices undergoing transformation that may inform our understanding of changing employment dynamics. DB plans are unique in that they specify a set of future rewards received after one retires for work done in the present,

and they are designed so that firms bear the risk of retirement and to encourage long-term employment (Gustman, et al., 1994). In this way, DB pensions tell us something about firms' willingness to bear risk and firms' *intentions* to create long-term, stable employment relationships – dimensions of the employment relationship not as readily captured in studies of other HR practices and outcomes.

Finally, though not hypothesized, I also considered firm-level uncertainty as a factor likely to direct executive attention to financial performance and to encourage firms to shift risk onto workers. Because firms specialize in particular activities and because firms within and across industries use different technologies and rely on different combinations of human skill (Sattinger, 1993), they vary in the extent of uncertainty they face. Though accounts have suggested that factors such as technological change and globalization have made firm environments more turbulent and unpredictable (e.g., Cappelli, 1999), to date, studies have not examined how firm-level uncertainty influences employment outcomes. The findings suggest that one method that executives use to cope with heightened levels of uncertainty is to shift retirement risk onto their workforce. In so doing, I offer an additional explanation for why firms might be willing to change their employment practices and shift employment risks onto their workers.

Limitations and Future Directions

One of this study's limitations is that it fails to include employee preference as a possible reason for the decline in DB utilization. Employees may sort themselves into firms based upon the retirement benefits offered (Salop & Salop, 1976); however, no evidence of which I am aware suggests that employees pressured firms to replace DBs with DC plans. Certainly different employees will have different preference sets for the type of benefits they receive, but firms, not employees, determine pension design. Moreover, the history of 401(k) plans outlines the difficulties many firms had in encouraging employees to participate in such plans (Benna, 2005; Whitehouse, 2003). Even if employee preference did play a part, that preference was likely actively and heavily influenced by campaigns from firms and mutual fund companies to encourage 401(k) plan participation. While the employee preference rationale for shifts in retirement coverage is problematic, I cannot rule it out.

Second, survey evidence and my discussions with pension consultants implicate risk as being a driving force behind firms' decisions to change their retirement strategies; however, other motives may influence changes to DB pension policy, including lowering costs or attracting workers who may not desire long-tenured employment. The fact that the results show that some of the same covariates affect DC utilization as they do DB utilization – though the two plans differ in the extent to which they necessitate the firm to bear risk – suggests that some of these other considerations may be important. Teasing apart different firm motivations with these data is not possible. There are also a number of other practices firms can utilize to lower labor costs and to shift risk onto individuals, including amending health insurance coverage, implementing performance-based compensation, and using temporary, contingent, and/or part-time workers. Future research can explore the impact of investor pressures, employee power, and uncertainty on these practices or combinations of practices to develop a more complete picture of how executive attention to financial interests and declining employee power affects the risk allocation strategies of US employers. Future work may also examine the implications and effects of firms' reduced utilization of DB pensions and risk-shifting more broadly on other outcomes such as perceptions of trust, employee turnover, and worker and firm performance.

A third and related limitation of this study is that prior research has substantiated that employment levels in large US firms have declined and implicated the role of finance in that development (e.g., Davis & Cobb, 2010). It stands to reason, therefore, that decreased DB utilization can occur in combination with or as a consequence of declining levels of employment. Empirically, the inclusion of employment in the models and the ECM analyses help control for this possibility. However, teasing apart whether DB utilization declines are a consequence of declining employment levels (e.g., firms laying off workers with a DB plan), due to forms of restructuring that do not involve aggregate changes in employment (e.g., firms laying off workers with DB pensions and replacing them with workers without them), or some other factor is not possible, as I cannot track individual plan participants over time. Future single-firm studies with personnel data may be able to isolate these effects.

Fourth, in this study, I examined a relatively narrow set of actors and their sources of power. Investors can obtain power through forms of collective action (Davis & Thompson, 1994) and exercise it more overtly through shareholder resolutions and proxy fights (Gillan & Starks, 2007). There are also other bases of employee power, such as the possession of rare skills and various forms of collective action (Briscoe & Murphy, 2012), and future work may benefit from exploring other sources of influence to determine whether these also influence firms' willingness to bear employment risk. Additionally, the corporate governance literature has long been interested in factors that give executives influence and how this affects firm practices and strategies (e.g., Westphal & Bednar, 2008). Future work may examine dimensions of corporate governance, such as CEO power and board structure, to determine whether these influence how risk is allocated between firms and workers.

Finally, while a common issue in observational studies of this type, the influence of equity ownership and unionization cannot be assessed directly. Though the patterns in the data largely support the theoretical claims made herein, there are limits in to how much information can be inferred from these results. In the future, researchers interested in how firms shift risk onto workers can exploit different methodologies such as interviews, ethnographies, and single-firm studies to better elucidate the mechanisms I hypothesized to be driving these results.

CONCLUSION

In the post-World War II period, large corporations in the United States typically sought to protect their workers from the vagaries of market forces and therefore established enduring relationships with their workers by offering generous welfare benefits such as DB pensions. However, beginning in the early 1980s, the firms' role as a primary bearer of employment risk has largely evaporated. In this study, I examined the factors motivating firms to shift the risks associated with retirement onto their workers, which is part of a larger trend, whereby individuals are increasingly forced to shoulder market uncertainties once born by corporate employers (Hacker, 2008; Kalleberg, 2011). The results of this study reveal that variance in the presence, power, and interests of shareholders and employees at the firm level

influence the extent to which firms are willing to shift the risk of retirement onto their workers, and in so doing, provide some initial evidence of the factors motivating firms to abandon their role of risk bearer.

Shareholder pressures and employee power are not the only factors affecting firms' retirement plan strategies and employment relations. Nevertheless, by considering how firms react to external demands and how forces inside the firm potentially mediate those demands, the research presented here suggests an important role for organizational theory in linking changes in the corporate power structure to practices that directly impact societal welfare.

REFERENCES

Appelbaum, E., & R. Batt. (2014). *Private Equity at Work: When Wall Street Manages Main Street*. New York: Russell Sage Foundation.

Ashford, S. J., E. George, & R. Blatt. (2007). Old Assumptions, New Work: The Opportunities and Challenges of Research on Nonstandard Employment. *Academy of Management Annals, 1*, 65-117.

Beckman, C. M., P. R. Haunschild, & D. J. Phillips. (2004). Friends or strangers? Firm-specific uncertainty, market uncertainty, and network partner selection. *Organization Science, 15*(3), 259-275.

Bendix, R. (1956). *Work and Authority in Industry: Ideologies of Management in the Course of Industrialization*. New York: Wiley.

Benna, T. (2005). 401(k) Plans: From Inception to the Present Day. In Rosenbloom, J. (Ed.), *The Handbook of Employee Benefits* (6th ed., pp. 685-698): The McGraw-Hill Company.

Berle, A., Jr., & G. C. Means. (1932). *The Modern Corporation and Private Property*. New York, NY: Macmillan.

Bertrand, M., & S. Mullainathan. (1999). Is there discretion in wage setting? a test using takeover legislation. *Rand Journal of Economics, 30*(3), 535-U532.

Bidwell, M. J. (2012). Politics and Firm Boundaries: How Organizational Structure, Group Interests and Resources Affect Outsourcing. *Organization Science, 23*, 1622-1642.

Bidwell, M. J. (2013). What Happened to Long-Term Employment? The Role of Worker Power and Environmental Turbulence in Explaining Declines in Worker Tenure. *Organization Science, 24*(4), 1061-1082.

Bidwell, M. J., F. Briscoe, I. Fernandez-Mateo, & A. Sterling. (2013). The Employment Relationship and Inequality: How and Why Changes in Employment Practices are Reshaping Rewards in Organizations. *Academy of Management Annals, 7*(1), 61-121.

Bogle, J. C. (2005). The mutual fund industry 60 years later: For better or worse? *Financial Analysts Journal, 61*(1), 15-24.

Boivie, I. (2011). Who Killed the Private Sector DB Plan? In Security, N. I. o. R. (Ed.), (pp. 1-13).

Bourdieu, P. (1998). La précarité est aujourd'hui partout *Contre-feux* (pp. 95-101). Paris, France: Liber-Raison d'agir.

Bova, F., K. Kolev, J. Thomas, & F. Zhang. (2014). Non-Executive Employee Ownership and Corporate Risk. *The Accounting Review, forthcoming*.

Briscoe, F., & C. Murphy. (2012). Sleight of hand? Practice opacity, third-party responses and the interorganizational diffusion of controversial practices. *Administrative Science Quarterly, 57*(4), 553-584.

Budros, A. (1997). The new capitalism and organizational rationality: The adoption of downsizing programs, 1979-1994. *Social Forces, 76*(1), 229-249.

Bushee, B. J. (1998). The influence of institutional investors on myopic R&D investment behavior. *Accounting Review, 73*(3), 305-333.

Bushee, B. J. (2001). Do institutional investors prefer near-term earnings over long-run value? . *Contemporary Accounting Research, 18*, 207-246.

Cappelli, P. H. (1999). *The New Deal at Work: Managing the Market-Driven Workforce*. Boston, MA: Harvard University Press.

Cappelli, P. H., & J. Keller. (2013). A Study of the Extent and Potential Causes of Alternative Employment Arrangements. *ILR Review, 66*(4), 874-901.

Cobb, J. A. (2015). How firms shape income inequality: Stakeholder power, executive decision-making, and the structuring of employment relationships. *Academy of Management Review, Forthcoming*.

Connelly, B. L., L. Tihanyi, S. T. Certo, & M. A. Hitt. (2010). Marching to the Beat of Different Drummers: The Influence of Institutional Investors on Competitive Actions. *Academy of Management Journal, 53*(4), 723-742.

Craig, S. (2013, May 18). The Giant of Shareholders, Quietly Stirring [Electronic Version], *The New York Times*. Retrieved from http://www.nytimes.com/2013/05/19/business/blackrock-a-shareholding-giant-is-quietly-stirring.html?hpw&_r=2&

Cumming, D., D. S. Siegel, & M. Wright. (2007). Private Equity, Leveraged Buyouts and Governance. *Journal of Corporate Finance, 13*(4), 439-460.

Cyert, R. M., & J. G. March. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.

Dalton, D. R., C. M. Daily, S. T. Certo, & R. Roengpitya. (2003). Meta-analyses of financial performance and equity: Fusion or confusion? *Academy of Management Journal, 46*(1), 13-26.

Davis, G. F. (2009). *Managed by Markets: How Finance Reshaped America*. New York: Oxford University Press USA.

Davis, G. F., & J. A. Cobb. (2010). Corporations and economic inequality around the world: the paradox of hierarchy. In Brief, A. & B. M. Staw (Eds.), *Research in Organizational Behavior* (pp. 35-53). Greenwich, CT: JAI Press.

Davis, G. F., & E. H. Kim. (2007). Business ties and proxy voting by mutual funds. *Journal of Financial Economics, 85*(2), 552-570.

Davis, G. F., & S. K. Stout. (1992). Organization Theory and the Market for Corporate Control: A Dynamic Analysis of the Characteristics of Large Takeover Targets, 1980-1990. *Administrative Science Quarterly, 37*(4), 305-633.

Davis, G. F., & T. A. Thompson. (1994). A social movement perspective on corporate control. *Administrative Science Quarterly, 39*, 141-173.

Dencker, J. C. (2009). Relative Bargaining Power, Corporate Restructuring, and Managerial Incentives. *Administrative Science Quarterly, 54*(3), 453-485.

Emerson, R. M. (1962). Power-Dependence Relations. *American Sociological Review, 27*(1), 31-41.

Even, W. E., & D. A. Macpherson. (2014). What Do Unions Do to Pension Performance? *Economic Inquiry, 52*(3), 1173-1189.

Farber, H. S. (2009). *Job Loss and the Decline in Job Security in the United States*. Princeton University Industrial Relations Section Working Paper #520.

Filatotchev, I., & S. Toms. (2006). Corporate governance and financial constraints on strategic turnarounds. *Journal of Management Studies, 43*(3), 407-433.

Fiss, P. C., & E. J. Zajac. (2004). The diffusion of ideas over contested terrain: The (non)adoption of a shareholder value orientation among German firms. *Administrative Science Quarterly, 49*(4), 501-534.

Fligstein, N., & T. Shin. (2007). Shareholder value and the transformation of the US economy, 1984-2000. *Sociological Forum, 22*(4), 399-424.

Freeman, R. B., & J. L. Medoff. (1984). *What Do Unions Do?* New York: Basic Books.

Friedberg, L., & M. T. Owyang. (2004). Explaining the Evolution of Pension Structure and Job Tenure: National Bureau of Economic Research, Inc.

Ghilarducci, T., & W. Sun. (2006). How defined contribution plans and 401(k)s affect employer pension costs. *Journal of Pension Economics and Finance 5*(2), 175-196.

Gillan, S. L., & L. T. Starks. (2007). The evolution of shareholder activism in the United States. *Journal of Applied Corporate Finance, 19*, 55-73.

Glasberg, D. S., & M. Schwartz. (1983). Ownership and Control of Corporations. *Annual Review of Sociology, 9*, 311-332.

Goldberg, V. P. (1980). Bridges over Contested Terrain - Exploring the Radical Account of the Employment Relationship. *Journal of Economic Behavior & Organization, 1*(3), 249-274.

Goldstein, A. (2012). Revenge of the Managers: Labor Cost-Cutting and the Paradoxical Resurgence of Managerialism in the Shareholder Value Era, 1984 to 2001. *American Sociological Review, 77*(2), 268-294.

Government Accountability Office. (2009). Private Pensions: Alternative Approaches Could Address Retirement Risks Faced by Workers. Washington, DC: U.S.

Gustman, A. L., O. S. Mitchell, & T. L. Steinmeier. (1994). The Role of Pensions in the Labor-Market: A Survey of the Literature. *Industrial & Labor Relations Review, 47*(3), 417-438.

Hacker, J. S. (2008). *The Great Risk Shift: The New Economic Insecurity and the Decline of the American Dream*. New York, NY: Oxford University Press.

Hawthorne, F. (2008). *Pension Dumping: The Reasons, the Wreckage, the Stakes for Wall Street*. New York: Bloomberg Press.

Herman, E. (1981). *Corporate control, corporate power*. New York: Cambridge University Press.

Hirsch, B. T., & D. A. Macpherson. (2003). Union Membership and Coverage Database from the Current Population Survey: Note. *Industrial & Labor Relations Review, 56*(2), 349-354.

Ippolito, R. A., & W. H. James. (1992). LBOs, reversions and implicit contracts. *Journal of Finance, 47*(1), 139-167.

Ippolito, R. A., & J. W. Thompson. (2000). The survival rate of defined-benefit plans, 1987-1995. *Industrial Relations, 39*(2), 228-245.

Jackall, R. (1988). *Moral Mazes: The World of Corporate Managers*. New York: Oxford University Press.

Jacoby, S. M. (1997). *Modern Manors: Welfare Capitalism Since the New Deal*. Princeton, NJ: Princeton University Press.

Jensen, M. C. (1989). Active Investors, LBOS, and the Privatization of Bankruptcy. *Journal of Applied Corporate Finance, 2*(1), 35-44.

Jensen, M. C., & K. J. Murphy. (2009). *CEO Pay and What to Do About It*. Cambridge, MA: Harvard Business School Press.

Jung, J. (2014). Shareholder Value and Workforce Downsizing, 1981-2006. *Social Forces, Forthcoming*, 1-34.

Kacperczyk, A. (2009). With Greater Power Comes Greater Responsibility? Takeover Protection and Corporate Attention to Stakeholders. *Strategic Management Journal, 30*(3), 261-285.

Kalleberg, A. L. (2009). Precarious Work, Insecure Workers: Employment Relations in Transition. *American Sociological Review, 74*(1), 1-22.

Kalleberg, A. L. (2011). *Good Jobs, Bad Jobs: The Rise of Polarized and Precarious Employment Systems in the United States, 1970s to 2000s*. New York: Russell Sage Foundation.

Kang, D. L., & A. B. Sørensen. (1999). Ownership organization and firm performance. *Annual Review of Sociology, 25*, 121-144.

Kotlikoff, L. J., & D. A. Wise. (1985). Labor compensation and the structure of private pension plans: Evidence for contractual vs. spot labor markets In Wise, D. A. (Ed.), *Pensions, labor, and individual choice* (pp. 55-85). Chicago, IL: University of Chicago Press.

Kotz, D. (1978). *Bank control of large corporations in the United States*. Berkeley, CA: University of California Press.

Kruse, D. L. (1995). Pension Substitution in the 1980s: Why the Shift toward Defined Contribution. *Industrial Relations, 34*(2), 218-241.

Lazear, E. P. (1986). Retirement from the Labor Force. In Ashenfelter, O. & R. Layard (Eds.), *Handbook in Economics Series* (pp. 305-355). New York: Elsevier Science Publishers.

Levy, M. (2006, October 10). Hershey scales back pension plans to cut costs [Electronic Version], *Associated Press Financial Wire*, pp. 1-2.

Lewin, D. (2005). Unionism and employment conflict resolution: Rethinking collective voice and its consequences. *Journal of Labor Research, 26*(2), 209-239.

Lichtenstein, N. (1995). *Walter Reuther: The Most Dangerous Man in Detroit*. New York, NY: Basic Books.

Lin, K.-H., & D. Tomaskovic-Devey. (2013). Financialization and US Income Inequality, 1970-2008. *American Journal of Sociology, 118*(5), 1284-1329.

LoPucki, L. M. (2010). Bankruptcy Research Database. Retrieved February 16, 2009, from Lynn LoPucki http://lopucki.law.ucla.edu/index.htm

Lowenstein, R. (1997, October 19). Intrinsic value: Remember when companies made things?, *The Wall Street Journal*.

March, J. G. (1962). The Business Firm as a Political Coalition. *Journal of Politics, 24*(4), 662-678.

Marx, K. (1978). Capital. In Tucker, R. C. (Ed.), *The Marx-Engels Reader* (second ed.). New York: W.W. Norton and Company.

Mintzberg, H. (1983). *Power In and Around Organizations*. Englewood Cliffs, NJ: Prentice-Hall.

Mitchell, O. S. (1982). Fringe Benefits and Labor Mobility. *Journal of Human Resources, 17*(2), 286-298.

Mizruchi, M. S. (2013). *The Fracturing of the American Corporate Elite*. Cambridge, MA: Harvard University Press.

Moskal, B. S. (1984, December 10). Pensions: New cash cows [Electronic Version], *Industry Week*, p. 29.

Orr, D. V. (1998). Strategic bankruptcy and private pension default. *Journal of Economic Issues, 32*(3), 669-687.

Osterman, P. S. (1999). *Securing prosperity: the American labor market: How it has changed and what to do about it*. Princeton, NJ: Princeton University Press.

Parrino, R., R. W. Sias, & L. T. Starks. (2003). Voting with their feet: institutional ownership changes around forced CEO turnover. *Journal of Financial Economics, 68*(1), 3-46.

Pfeffer, J., & G. R. Salancik. (1978). *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper & Row.

Phillips, D. J. (2001). The promotion paradox: Organizational mortality and employee promotion chances in Silicon Valley law firms, 1946-1996. *American Journal of Sociology, 106*(4), 1058-1098.

Porter, M. E. (1992). *Capital choices: Changing the way America invests in industry*. Boston: Harvard Business School.

Rankin, D. (1983, March 20). Personal finance: The fading of the fixed pension plan [Electronic Version], *The New York Times*.

Salop, J., & S. Salop. (1976). Self selection and turnover in the labor market. *Quarterly Journal of Economics, 90*(4), 620-627.

Sattinger, M. (1993). Assignment Models of the Distribution of Earnings. *Journal of Economic Literature, 31*(2), 831-880.

Schnatterly, K., K. W. Shaw, & W. W. Jenning. (2008). Information advantages of large institutional owners. *Strategic Management Journal, 29*(2), 219-227.

Schultz, E. E. (2011). *Retirement heist: How companies plunder and profit from the nest eggs of American workers*. New York: Penguin Group.

Shin, J. Y., & J. Seo. (2011). Less Pay and More Sensitivity? Institutional Investor Heterogeneity and CEO Pay. *Journal of Management, 37*(6), 1719-1746.

Shleifer, A., & L. H. Summers. (1988). Breach of Trust in Hostile Takeovers *NBER Chapters in Corporate Takeovers: Causes and Consequences* (pp. 33-68): National Bureach of Economic Reserch Inc.

Shleifer, A., & R. W. Vishny. (1986). Large Shareholders and Corporate-Control. *Journal of Political Economy, 94*(3), 461-488.

Sørensen, A. B. (1994). Firms, wages, and incentives. In Smelser, N. J. & R. Swedberg (Eds.), *Handbook of Economic Sociology* (pp. 504-528). Princeton, NJ: Princeton University Press.

Tender Offer Disclosure and Fairness Act of 1987, U.S. Congress, Senate, 1 Sess. (1987).

Useem, M. (1996). *Investor Capitalism: How Money Managers are Changing the Face of Corporate America*. New York: Basic Books.

Western, B., & J. Rosenfeld. (2011). Unions, norms, and the rise in U.S. wage inequality. *American Sociological Review, 76*(4), 513-537.

Westphal, J. D., & M. K. Bednar. (2008). The pacification of institutional investors. *Administrative Science Quarterly, 53*(1), 29-72.

Whitehouse, H. (2003). Toward a more complete history: Johnson & Johnson's 401(k) Nursery. *EBRI Notes, 24*(12), 1-4.

Wolff, E. N. (2003). The devolution of the American pension system: Who gained and who lost? *Eastern Economic Journal, 29*(4), 477-495.

Wooldridge, J. M. (2006). *Introductory Econometric Analysis* (Vol. 3). Mason, OH: Thomson.

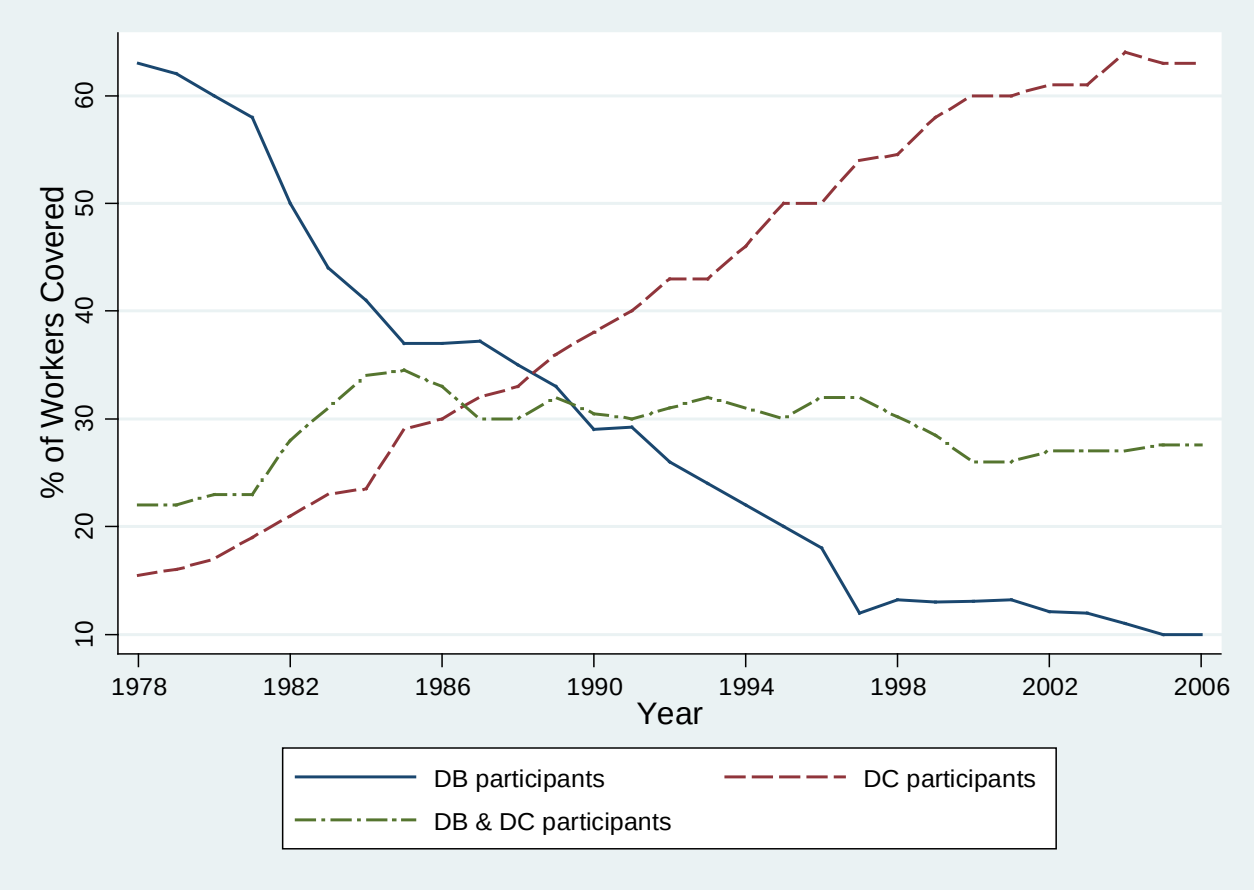
Wright, M., N. Bacon, & K. Amess. (2009). The Impact of Private Equity and Buyouts on Employment, Remuneration and other HRM Practices. *Journal of Industrial Relations, 51*(4), 501-515.

Wry, T., J. A. Cobb, & H. E. Aldrich. (2013). More than a metaphor: Assessing the historical legacy of resource dependence and its contemporary promise as a theory of environmental complexity. *Academy of Management Annals, 7*(1), 441-488.

Zelinsky, E. A. (2004). The defined contribution paradigm. *Yale Law Journal, 114*(3), 451-534.

Zorn, D. M. (2004). Here a chief, there a chief: The rise of the CFO in the American firm. *American Sociological Review, 69*(3), 345-364.

Figure 1. Retirement plan trends: Participation by plan type, 1978-2006 (private-sector, active-workers)



Source: Employee Benefits Research Institute

Table 1. Summary of pension characteristics

Type of pension	Defined benefit (DB)	Defined contribution (DC)
Calculating the cost of benefits	Cost unknown until consumed	Easily determined, based upon contribution
Timing of pension wealth accruals	Most pension wealth accrues late in career	Smooth accrual
Owner of assets	Employer	Employee
Portable	No	Yes
Responsibility for portfolio performance	Employer	Employee
Form of pension benefit	Annuity	Lump sum

Table 2. Descriptive statistics and correlation matrix

Variables		Mean	St. Dev	1	2	3	4	5	6	7	8	9	10	11	12
1	(log) DB Participants	6.71	3.44	1											
2	Passive finance own$_{t-1}$	0.31	0.46	0.04	1										
3	Active finance own$_{t-1}$	0.07	0.26	-0.07	-0.18	1									
4	Other own$_{t-1}$	0.47	0.50	-0.15	-0.62	-0.26	1								
5	Management own$_{t-1}$	0.16	0.36	0.21	-0.29	-0.12	-0.40	1							
6	% Own$_{t-1}$ (%)	18.49	17.04	-0.21	-0.42	0.17	0.40	-0.18	1						
7	Dedicated own$_{t-1}$ (%)	9.61	9.29	0.03	0.22	0.03	-0.08	-0.19	-0.07	1					
8	Transient own$_{t-1}$ (%)	11.69	9.92	-0.08	0.27	-0.02	-0.16	-0.11	-0.16	0.08	1				
9	(log) Firm union$_{t-1}$	1.85	3.31	0.36	0.01	0.01	-0.07	0.08	-0.06	-0.01	-0.04	1			
10	(log) Employees	9.26	1.39	0.40	0.06	-0.07	-0.12	0.13	-0.14	0.07	0.13	0.20	1		
11	Age	66.63	37.73	0.48	0.03	-0.04	-0.12	0.15	-0.14	-0.02	-0.10	0.16	0.19	1	
12	Bankrupt	0.01	0.12	-0.01	-0.01	0.12	-0.04	-0.03	0.02	-0.05	-0.06	0.02	-0.02	0.00	1
13	Mergers$_{t-1}$	27.21	0.00	0.01	0.10	-0.04	-0.09	0.03	-0.05	-0.02	0.11	-0.06	0.04	0.09	-0.04
14	Ind DB rate$_{t-1}$ (%)	45.59	24.54	0.27	-0.03	-0.09	-0.04	0.16	-0.09	-0.06	-0.13	0.14	-0.08	0.19	-0.01
15	S&P 500 return $_{(3\text{-yr avg})}$ (%)	11.35	8.49	0.00	-0.04	0.01	0.03	0.02	0.02	0.01	-0.20	0.01	-0.02	-0.02	-0.03
16	Revenues$_{t-1}$ (B)	5.28	12.41	0.21	-0.02	-0.07	-0.03	0.10	-0.07	0.00	0.02	0.12	0.46	0.13	-0.02
17	ROA $_{(3\text{-yr avg})}$ (%)	3.99	5.43	-0.02	-0.05	-0.19	0.11	0.05	-0.05	-0.05	0.01	0.01	0.11	-0.06	-0.23
18	LTD/Total Assets $_{t-1}$ (%)	22.21	17.28	-0.02	-0.05	0.25	-0.07	-0.03	0.10	0.00	0.04	0.07	-0.06	-0.08	-0.03
19	Firm uncertainty$_{t-1}$	12.63	9.05	-0.01	-0.01	-0.08	0.05	0.00	-0.01	0.01	-0.05	-0.14	-0.10	0.05	-0.03
20	Financialization$_{t-1}$ (%)	10.81	16.95	-0.24	0.04	0.14	0.02	-0.16	0.10	-0.01	0.17	-0.09	-0.11	-0.23	0.23

Variables		13	14	15	16	17	18	19	20
13	Mergers$_{t-1}$	1							
14	Ind DB rate$_{t-1}$ (%)	0.04	1						
15	S&P 500 return $_{(3\text{-yr avg})}$ (%)	0.10	0.03	1					
16	Revenues$_{t-1}$ (B)	0.07	0.00	-0.05	1				
17	ROA $_{(3\text{-yr avg})}$ (%)	-0.03	-0.06	0.06	0.02	1			
18	LTD/Total Assets $_{t-1}$ (%)	-0.08	-0.03	0.00	-0.05	-0.28	1		
19	Firm uncertainty$_{t-1}$	0.10	0.13	0.00	0.03	-0.06	-0.27	1	
20	Financialization$_{t-1}$ (%)	0.04	-0.13	-0.01	-0.06	-0.22	0.09	-0.03	1

Table 3. Time-series, fixed-effects regression on log of participants in DB plans, 1982-2006

Variables	M1	M2	M3	M4	M5
Passive finance own$_{t-1}$	--	-0.1035***	--	-0.0969***	-0.1081***
		(0.0164)		(0.0165)	(0.0166)
Active finance own$_{t-1}$	--	-0.2073***	--	-0.1755***	-0.1118***
		(0.0285)		(0.0322)	(0.0331)
Other own$_{t-1}$	--	-0.0615***	--	-0.0546**	-0.0538**
		(0.0181)		(0.0183)	(0.0184)
Dedicated own$_{t-1}$ (%)	--	--	--	--	0.0027***
					(0.0007)
Transient own$_{t-1}$ (%)	--	--	--	--	-0.0004
					(0.0007)
(log) Firm union$_{t-1}$	--	0.0729***	--	0.0655***	0.0667***
		(0.0031)		(0.0031)	(0.0031)
Employees (log)$_{t-1}$	0.7356***	0.7096***	0.7097***	0.6885***	0.6925***
	(0.0082)	(0.0084)	(0.0092)	(0.0093)	(0.0096)
Firm age	0.0025†	0.0084***	0.0015	0.0041*	0.0021
	(0.0015)	(0.0015)	(0.0016)	(0.0016)	(0.0017)
Bankrupt	-0.2991***	-0.2771***	-0.0952†	-0.1010*	-0.0611
	(0.0418)	(0.0410)	(0.0500)	(0.0493)	(0.0519)
Mergers$_{t-1}$	0.0009**	0.0008**	0.0008**	0.0007*	0.0008**
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Ind DB rate$_{t-1}$ (%)	0.0028***	0.0024***	0.0029***	0.0028***	0.0027***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
S&P 500 return $_{3\text{-yr avg}}$ (%)	0.0011	0.0012	0.0005	0.0005	-0.0004
	(0.0008)	(0.0007)	(0.0008)	(0.0008)	(0.0008)
Revenues$_{t-1}$ (B)	--	--	0.0080***	0.0075***	0.0073***
			(0.0007)	(0.0007)	(0.0007)
ROA $_{3\text{-yr avg}}$ (%)	--	--	0.0047***	0.0048**	0.0053**
			(0.0014)	(0.0014)	(0.0015)
LTD/Total Assets$_{t-1}$ (%)	--	--	0.0014**	0.0012*	0.0013*
			(0.0005)	(0.0005)	(0.0005)
Financialization$_{t-1}$ (%)	--	--	-0.0014*	-0.0013*	-0.0014*
			(0.0006)	(0.0006)	(0.0006)
Firm uncertainty$_{t-1}$	--	--	-0.0052***	-0.0047***	-0.0037***
			(0.0008)	(0.0008)	(0.0007)
Constant	7.8898***	7.6558***	8.0340***	7.7771***	7.915***
	(0.1159)	(0.1157)	(0.1226)	(0.1225)	(0.1281)
Observations	18,489	18,454	16,523	16,520	16,037
Firms	1,085	1,084	1,034	1,034	1,026
ρ	0.83	0.82	0.83	0.83	0.82
R^2	0.49	0.51	0.47	0.51	0.53
Year dummies	Yes	Yes	Yes	Yes	Yes
Omitted ownership category	n/a	Dispersed	n/a	Dispersed	Dispersed

† p < .10; * p < .05; ** p < .01; *** p < .001

Standard errors are in parentheses; tests are two-tailed

Table 4. Error correction regression of long-run effects on log of participants in DB plans, 1982-2006

	M6		M7	
Variables	Coefficient	CSE	Coefficient	CSE
Error correction rate	-0.2465***	(0.0035)	-0.1699***	(0.0032)
Passive finance own_{t-1}	-0.3154***	(0.0129)	-0.4330***	(0.0157)
Active finance own_{t-1}	-0.5072***	(0.0195)	-0.5109***	(0.0280)
Other own_{t-1}	-0.1022***	(0.0121)	-0.1641***	(0.0143)
Dedicated own_{t-1} (%)	--		0.0088***	(0.0007)
Transient own_{t-1} (%)	--		-0.0079***	(0.0007)
(log) Firm $union_{t-1}$	0.0070***	(0.0012)	0.0159***	(0.0014)
Employees $(log)_{t-1}$	0.8536***	(0.0035)	0.4737***	(0.0056)
Firm age	-0.0007***	(0.0001)	-0.0007***	(0.0002)
Bankrupt	-0.6841***	(0.0398)	-0.4841***	(0.06616)
$Mergers_{t-1}$	-0.0001	(0.0002)	0.0004	(0.0002)
Ind DB $rate_{t-1}$ (%)	0.0123***	(0.0002)	0.0107***	(0.0003)
S&P 500 return $_{3\text{-yr avg}}$ (%)	0.0393*	(0.0182)	-0.0020	(0.0045)
$Revenues_{t-1}$ (B)	--		0.0189***	(0.0004)
ROA $_{3\text{-yr avg}}$ (%)	--		0.0192***	(0.0011)
LTD/Total $Assets_{t-1}$ (%)	--		-0.0029***	(0.0004)
$Financialization_{t-1}$ (%)	--		-0.0010**	(0.0003)
Firm $uncertainty_{t-1}$	--		0.0005	(0.0009)
Constant	-0.0515	(0.0994)	3.9520***	(0.5848)
Observations	17,473		15,126	
Adjusted R^2	0.87		0.84	
Year dummies	Yes		Yes	
Omitted ownership category	Dispersed		Dispersed	

† p < .10; * p < .05; ** p < .01; *** p < .001

Error corrected standard errors in parentheses. Tests are two-tailed