

WHY ARE HEALTHY EMPLOYERS FREEZING THEIR PENSIONS?

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Introduction

The shift in pension coverage from defined benefit plans to 401(k)s has been underway since 1981. This shift is the result of three developments; 1) the addition of 401(k) provisions to existing thrift and profit sharing plans; 2) a surge of new 401(k) plan formation in the 1980s; and 3) the virtual halt in the formation of new defined benefit plans. A conversion from a defined benefit plan to a 401(k) plan was an extremely rare event, particularly among large plans. Historically, the only companies closing their defined benefit pension plans were facing bankruptcy or struggling to stay alive. Now the pension landscape has changed. Today, large healthy companies are either closing their defined benefit plan to new entrants or ending pension accruals for current as well as future employees.¹ Why are healthy employers taking this action? And why now?

This *brief* reviews the major pension freezes during the last two years and explores the impact on employees at different stages in their careers. It then offers four possible explanations why employers are shutting down their plans. The first is that some U.S. companies are cutting pensions to reduce workers' total compensation in the face of intense global competition. The second explanation is that employers have been forced to cut back on pensions in the face of growing health benefits to maintain existing compensation levels. The third explanation, by contrast, points to the finances of the plans themselves —

specifically, their market risk, longevity risk, and regulatory risk that make defined benefit pensions unattractive to employers. The final explanation is that with the enormous growth in CEO compensation, traditional qualified pensions have become irrelevant to upper management who now receive virtually all their retirement benefits through non-qualified plans. Each of these explanations contains a kernel of truth, and they all help explain the current trend.

What is a Pension Freeze?

A pension freeze means stopping future accruals. When a plan is frozen for new entrants, everyone currently in the plan can continue to earn benefits as before, but new employees are not covered by the defined benefit plan. Instead, they are offered an alternative arrangement such as a 401(k) plan. Sometimes the freeze applies to existing as well as new employees. In this case, the assets remain in the plan to be paid out when the workers retire or leave the company, but benefits do not increase with additional years on the job or wage increases.

An example illustrates how a freeze affects those who are currently participating in a defined benefit pension. If the plan provided 1.5 percent of final salary for each year of service and the worker had been at the company for 10 years, he would be entitled

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to 15 percent of salary and nothing more under the plan. In addition, that 15 percent would be applied to his salary at the time the plan was frozen rather than at retirement. So a 50-year-old employee earning \$48,000 would be entitled to \$7,200 (15 percent of \$48,000) a year at age 62. If the plan had remained in place and the employee had continued in his job, his current tenure would have entitled him to 15 percent of his \$58,000 salary at age 62 and he would have received \$8,700 (15 percent of \$58,000) for life instead of \$7,200.

Legally, companies are free to freeze their pensions at any time to prevent any future pension accruals. The exception is plans for workers covered by collective bargaining agreements where employers

must negotiate any proposed change with the union. In all cases, employers can only make changes prospectively; they cannot take away pension benefits already earned.

Freezing a plan is different than terminating a plan. When an employer terminates a plan it must pay out all benefits immediately, either as a lump sum or by buying employees an annuity. Generally, only companies operating under bankruptcy protection can transfer their liabilities to the Pension Benefit Guaranty Corporation (PBGC), the government agency that insures defined benefit pensions.²

In the last few years, 17 large financially healthy companies have frozen their plans (see Table 1). The freezes have taken three forms: plan closed to new

TABLE 1. HEALTHY COMPANIES FREEZING DEFINED BENEFIT PENSIONS, 2004-2006

Company	U.S. employees	Participants affected	Type of freeze	Funding status ^a
2006				
Coca-Cola Bottling Co. ^b	6,100	4,500	Total	89.1 %
Nissan NA, Inc.	15,200		New employees	85.2
IBM Corp.	125,000	117,000	Total	104.6
ALCOA	48,000		New employees	85.0
2005				
Verizon Communications	240,000	50,000	Partial	104.6
Sprint Nextel Corp.	82,900	39,000	Partial	82.2
Sears Holdings Corp.	238,200	113,100	Total	92.2
Milliken and Co.	10,200	9,300	Total	97.8
Lockheed Martin Corp.	118,800		New employees	70.3
Hewlett-Packard Co.	71,000	32,200	Partial	90.6
Ferro Corp.	2,500	1,000	Total	67.2
Russell Corp.	8,800	5,700	Total	66.5
2004				
Circuit City Stores, Inc.	42,400	19,000	Total	102.6
Motorola, Inc.	30,600		New employees	74.5
Hospira, Inc.	9,800	8,250 ^c	Total	87.7
NCR Corp.	11,400	9,200	Partial	93.8
Aon Corp.	21,000		New employees	89.6

Sources: Information for each company is derived from press releases and newspaper and magazine articles.³ The specific sources can be found on each company's full-page description of its freeze shown on the Center's website, <http://www.bc.edu/crr>.

*Note: In Q3 of 2004, a subsidiary of Berkshire Hathaway announced the freezing of its pension plan, effective January 1, 2006. A gain in income of \$70 million was recorded after the announcement.

a. Funding status is defined as assets divided by the projected benefit obligations (PBO) of the plan. Due to lack of data, the accumulated benefit obligation (ABO), rather than the PBO, is used in the denominator for the following companies: Coca-Cola Bottling Co.; Circuit City Stores, Inc.; Nissan NA, Inc.; Sears Holdings Corp.; Aon Corp.; and Milliken and Co. The PBO takes into account projected salary increases whereas the ABO measures the liability accrued based on salaries on the valuation date.

b. This is different from the Coca-Cola Company.

c. 8,000-8,500 participants affected.

employees (“new employees”); plan closed to both new employees and some existing workers (“Partial”); and plan closed to new employees and all existing employees (“Total”). More than 400,000 current employees have been affected by the freezes, and well in excess of a million workers will henceforth have a 401(k) plan rather than a defined benefit pension. The table does not include freezes at companies facing financial pressures, such as General Motors, which in February 2006 announced a freeze for its salaried pension plan, or Northwest Airlines, which froze its pilots’ pension in January 2006.

In each case, the company freezing its pension either introduced a 401(k) plan or enhanced its existing 401(k) plan — often with special provisions for those nearing retirement. The next section explores how the shift from a defined benefit plan to a 401(k) affects employees at different stages of their careers.

Impact of Pension Freezes on Employee Benefits

In most cases, companies that have frozen their defined benefit pensions have introduced a 401(k) plan as a replacement. In some cases, these 401(k) plans have provided large employer contributions for employees in transition. The following tables can be used to determine the net impact of a pension freeze and introduction of a new plan for employees at various ages.

Table 2 shows replacement rates — defined as benefits as a percent of earnings at age 62 — under a typical defined benefit plan, where the accrual rate per year of service is 1.5 percent, and under a typical 401(k) plan, where the typical contribution is 6 percent by the employee and a 3-percent match by the employer.⁴ Note that the two plans are roughly equivalent in that the employee entering either plan at 35, who contributed the required amount and did not change jobs, would end up with about 45 percent of pre-retirement earnings at 62 (43 percent for the defined benefit plan and 44 percent for the 401(k) plan).

The two panels of Table 2 can show the impact of a freeze on workers at different stages in their career (see endnote 4 for details of the calculations). Suppose an employee joins the company’s defined benefit plan at 35; by 62 that employee would be entitled to a benefit equal to 43 percent of final earnings. Now suppose that the company freezes the pension when the employee is 50 and offers a 401(k) to the employee. At age 62 the employee would be entitled to 13 percent of final pay (enters the plan at age 35, exits

TABLE 2. REPLACEMENT RATES FOR TYPICAL DEFINED BENEFIT AND 401(k) PLANS BY AGE OF ENTRY AND EXIT

Panel 1. Replacement Rate for a Traditional Defined Benefit Plan

Exits plan at age	Enters plan at age				
	35	40	45	50	55
35	0%	0%	0%	0%	0%
40	3	0	0	0	0
45	7	4	0	0	0
50	13	9	5	0	0
55	20	16	11	6	0
62	43	35	27	20	12

Panel 2. Replacement Rate for a 401(k) Plan

Exits plan at age	Enters plan at age				
	35	40	45	50	55
35	1%	0%	0%	0%	0%
40	5	1	0	0	0
45	11	5	1	0	0
50	18	12	6	1	0
55	27	19	12	6	1
62	44	33	23	15	8

Source: Authors’ calculations. See endnote 4 for more details.

plan at age 50) from the defined benefit plan and 15 percent from the 401(k) plan (enters plan at age 50, exits plan at age 62). The total replacement rate after the freeze is 28 percent, compared to 43 percent if the defined benefit plan had not been frozen. Alternatively, consider an employee who joins the company’s defined benefit plan at age 35, who sees his defined benefit plan frozen at age 40. In this case, the employee is entitled to 3 percent of final pay from the defined benefit plan (enters plan at age 35, exits plan at age 40) and 33 percent from the 401(k) plan (enters plan at age 40, exits plan at age 62), for a total of 36 percent.

These examples show that mid-career employees have far more to lose from a pension freeze than their younger counterparts.⁵ The relationship with age is not monotonic, however, because those who are about to reach age 62 have spent virtually all their lives under the defined benefit plan and are little affected by the freeze (see Table 3).

TABLE 3. TOTAL REPLACEMENT RATE AT 62 FOR WORKER WHO ENTERED AT 35, BY AGE AT WHICH 401(k) REPLACES FROZEN DEFINED BENEFIT PLAN

Source	Age at which 401(k) replaces frozen defined benefit plan					
	35	40	45	50	55	62
Defined benefit plan	0%	3%	7%	13%	20%	43%
401(k) plan	44	33	23	15	8	0
Total	44	36	30	28	28	43

Source: Authors' calculations. See endnote 4 for more details.

As noted above, many of the companies that froze their defined benefit pension enhanced the contributions to their new 401(k) plans, particularly for older employees. Table 4 displays the impact of these higher contributions. The 9 percent row reflects the assumption underlying the numbers reported above: 6 percent from the employee with a 3 percent employer match. The other numbers involve a more generous employer contribution. Even with enhanced rates, employees 50 and over lose from the freeze. Consider the employee who started at 35 and was 50 when the freeze occurred, as in the example discussed above. This employee receives 13 percent from the frozen defined benefit pension and would receive 23 percent from the enhanced 401(k) assuming a 14 percent contribution and 26 percent assuming a 16 percent contribution, for a maximum combined replacement rate of 39 percent — below the 43 percent if the defined benefit plan had remained in place. Thus, enhanced 401(k) contributions mitigate the impact of freezes for older workers, but even the most generous cannot fully compensate those 50 and over. Note also that these tables assume stable returns on 401(k) plan accumulations. In fact, returns fluctuate and employees face the risk that they may experience a series of bad years with little chance for recovery.

Why Are Healthy Companies Freezing Their Plans?

At least four developments could explain the recent surge in plan freezes: a desire to cut compensation in order to meet competition; a need to restructure current levels of compensation because of accelerating health care costs; concern about the costs and

risks associated with defined benefit plans; and the emergence of a two-tier pension system.⁶ The following discussion explores each of these explanations in more detail.

A Desire to Cut Compensation

The simplest reason for freezing pensions is the desire to cut total compensation. Shifting from a defined benefit plan to a 401(k) plan will reduce required employer contributions from 7 to 8 percent of payrolls to the 3-percent employer match.⁷ According to economists' basic model, workers' total compensation is determined by the simple demand and supply for their labor. Once employers determine how much total compensation they must pay their workers, they divide that total between cash wages and fringe benefits. Employer contributions to a pension thus imply lower cash wages or less in the way of other fringe benefits and vice versa. In the announced freezes, however, the savings from shifting from a defined benefit plan to a 401(k) plan are not being offset by higher cash wages, so total compensation is reduced, at least in the short run. The logic must be that cutting pensions will cause less commotion than cutting cash wages.

The usual rationale for cutting compensation is to become more competitive in the global marketplace. Both Hewlett Packard and IBM offer a domestic as well as international explanation. They state that they need to reduce pension costs not only to compete with foreign companies where the government provides the bulk of pension benefits but also to compete with newer domestic companies that never made defined benefit pension promises or with other companies that have frozen their plans.

TABLE 4. REPLACEMENT RATE AT 62 FROM A "GENEROUS" 401(k) PLAN, BY AGE AT WHICH 401(k) REPLACES FROZEN DEFINED BENEFIT PLAN

Contribution rate	Age at which 401(k) replaces frozen defined benefit plan					
	35	40	45	50	55	62
9%	44%	33%	23%	15%	8%	0%
11%	53	40	28	18	10	0
14%	68	51	36	23	12	0
16%	78	58	41	26	14	0

Source: Authors' calculations. See endnote 4 for more details.

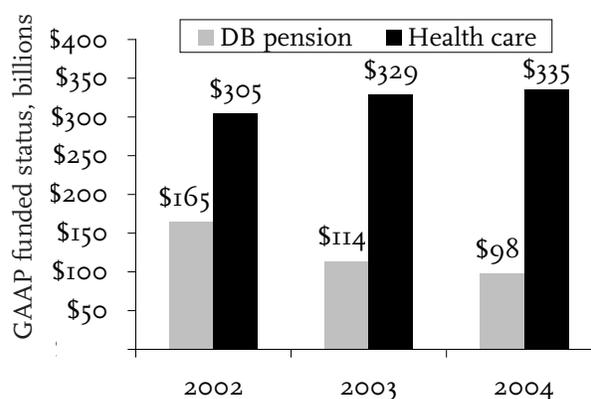
While freezing pensions is likely to hurt employees caught mid career with significant years of service (as discussed above), younger workers may not see anything negative about a shift from a defined benefit plan to a 401(k). Many young workers do not expect to spend a lifetime with one employer and relish the portability of the 401(k) plan that companies introduce to replace their frozen defined benefit pension. Thus, in all likelihood, freezing pensions has little adverse impact on the company's ability to retain and hire younger workers. In theory, young mobile workers could come out ahead with a 401(k) plan, although actual 401(k) accumulations often fall short of projected.

A Response to Growing Health Care Costs

Another explanation for the freezing of defined benefit plans assumes that the goal is *not* to cut total compensation but rather to restructure compensation in response to the enormous increase in health care costs. That is, the rapid acceleration in health care costs is driving out pension benefits. The pressure from health care costs arises in terms of providing both health insurance for current employees and post-retirement health care benefits for retirees.

The impact of rising health care costs on the wage bill is evident in Table 5. Whereas in 1970, employer spending on health care benefits as a percent of total compensation was only about one-third that on retirement, today health and retirement comprise almost an equal proportion of total compensation. More importantly, focusing on only the voluntary compo-

FIGURE 1. S&P 500 RETIREE HEALTH CARE AND DEFINED BENEFIT PENSION FUNDING SHORTFALL, 2002-2004, U.S. PLANS ONLY



Source: Goldman Sachs (2005).

nent of retirement and health spending by employers, spending on health plans is more than twice that on private pensions. This rapidly growing component of compensation is clearly putting pressure on wages and salaries and retirement benefits, possibly explaining why healthy firms are cutting back on pensions.

The burden of providing health care for retirees has also increased significantly. While the unfunded liabilities of defined benefit pension plans have dominated the news in recent years, unfunded retiree health care commitments are a much bigger issue. As Figure 1 shows, the funding shortfall in retiree health care benefits has increased from two times to three times the shortfall in defined benefit pension plans for companies that comprise the Standard &

TABLE 5. PRIVATE SECTOR RETIREMENT AND HEALTH CARE BENEFITS AS A PERCENT OF TOTAL COMPENSATION, 1970-2004

Item	1970	1980	1990	2000	2004
Total compensation	100.0%	100.0%	100.0%	100.0%	100.0%
Wages and salaries	89.4	83.4	82.5	83.5	80.6
Retirement benefits	6.5	9.7	8.8	7.9	9.1
Social Security	2.6	3.4	4.1	4.0	4.0
Private employer pensions	2.1	3.3	1.9	2.0	3.0
Public employer pensions	1.7	3.0	2.8	2.0	2.2
Health benefits	2.4	4.4	6.3	6.9	8.4
Medicare	0.4	0.7	1.0	1.2	1.2
Group health	2.0	3.7	5.3	5.7	7.2
Other benefits	1.8	2.5	2.4	1.6	1.9

Source: Authors' calculations from U.S. Department of Commerce (2006).

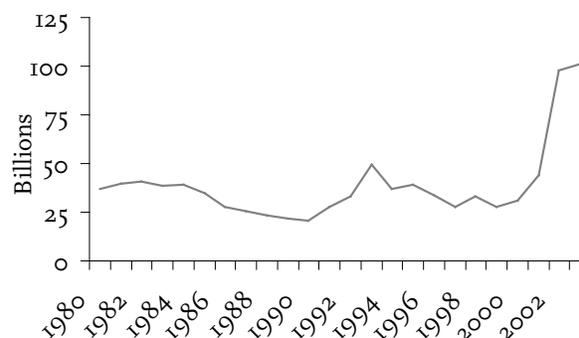
Poor's 500. Moreover, the two unfunded liabilities are moving in opposite directions. Unfunded pension liabilities have declined in recent years as a result of a significant increase in employer contributions (see discussion below) and an improved stock market. In the case of retiree health benefits, the absence of a funding requirement and rapidly rising costs have led to increasing unfunded liabilities. This increase has occurred despite actions taken by firms to contain costs.⁸ In any event, the enormous liabilities that companies face on the health care side may have forced them to cut back on pension commitments.

Concern about Financial Implications of Defined Benefit Plans

Sponsors of defined benefit plans bear significant costs and risks.⁹ The employer is responsible for setting aside contributions on a regular basis to fund the employee's future benefits; the employer bears the investment risk as it invests accumulated contributions over the employee's working life; the employer bears the risk that interest rates will be very low — and therefore the price of liabilities very high; and the employer bears the risk that the retiree will live longer than projected, thereby significantly increasing the cost of lifelong benefits.¹⁰ In addition to these economic and demographic risks, the employer bears the risk that accounting or legislative changes may make sponsoring a defined benefit plan more difficult.

Economic Risk: The main risk faced by sponsors of defined benefit plans is that the gap between assets on hand and promised benefits will increase dramatically requiring a significant increase in contributions. During the late 1980s and 1990s, a combination of growing asset values and regulatory constraints allowed defined benefit plan sponsors to make little or no cash contributions to their pension funds. In fact, many companies were able to take "contribution holidays" as capital gains on their equity holdings helped fund their pensions. After 2000, the decline of the stock market and the rapid drop in interest rates dubbed by analysts as "the perfect storm" brought an end to these contribution holidays.¹¹ As assets in the pension funds plummeted and projected liabilities increased, funding rules required many plan sponsors to inject a significant amount of cash into their pension funds. Figure 2 shows the sudden increase

FIGURE 2. CONTRIBUTIONS TO DEFINED BENEFIT PLANS,^a 1980-2003



Source: Buessing and Soto (2006).

a. Plans with 100 or more participants.

in contributions after 2000, from an average annual amount of about \$30 billion per year between 1980 and 2000 to \$45 billion in 2001, and to about \$100 billion in 2002 and 2003. Thus, market volatility can suddenly make defined benefit plans considerably more expensive with major implications for cash flow and financial condition.

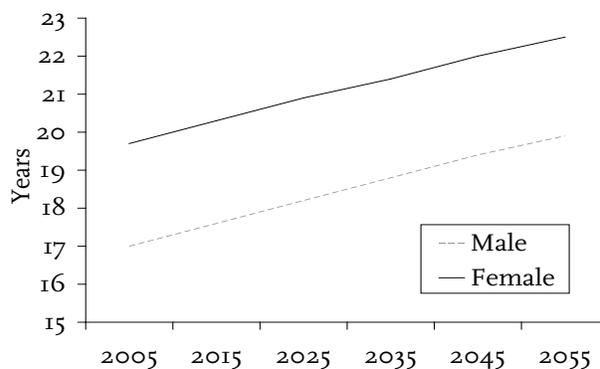
Demographic Risk: An integral component of a defined benefit pension is the commitment to pay benefits for life. As shown in Figure 3, life is getting longer and longer.

In 2005, the average man at age 65 was expected to live another 17.0 years; for women expected life was 19.7 years. By 2055, men at 65 are projected to live another 19.9 years and women another 22.5 years. Life expectancy is strongly related to socio-economic status, so those with pensions, who tend to be higher earners, should be expected to live even longer. Rising longevity translates directly into higher employer costs.¹² The real concern, however, is that the life tables turn out to be too pessimistic. That is, people live considerably longer than anticipated. Indeed, a number of prominent demographers suggest that this may be the case.¹³ If the beneficiaries of defined benefit plans end up living considerably longer than expected, plan sponsors will suffer a serious financial loss.

Legislative Risk: In addition to economic and demographic risks, sponsors of defined benefit plans face the risk that the rules governing these plans could change in a way that makes them more expensive.¹⁴ In particular, the growing deficit at the PBGC sparked Administration proposals in early 2005 to improve the agency's finances by raising employer premiums and tightening funding requirements. At this writing, both the House and Senate have a version of pension reform based on the Administration's proposals, which — while differing in important ways — contain a number of common themes.¹⁵ They would dramatically shorten the period over which plan sponsors must eliminate "ongoing" funding shortfalls from 30 years to 7 years. They would both raise the premiums for PBGC insurance from the current \$19 to \$30. (This provision was pulled out of the individual bills and included in the Deficit Reduction Act of 2005 that was signed into law on February 8, 2006.) They would impose more of a "mark-to-market" framework than the current set of rules, which would make the timing of contributions less predictable. All these changes would improve the financial future of the PBGC but make defined benefit plans more expensive to the sponsor and earnings more volatile.

Accounting Standards Risk: Employers also face the risk that changes likely to emerge from the Financial Accounting Standards Board's (FASB) proposed review of accounting standards for pensions and other post-retirement benefits will make the numbers reported on their income statements and balance sheets more volatile.¹⁶ The first phase of FASB's proposed review will aim at improving transparency by requiring that the unfunded liabilities for pension and health benefits appear on the firm's balance sheet. The unfunded liabilities would be measured using the current market value of plan assets rather than some smoothed average. Phase two is likely to try to bring the U.S. accounting framework in line with international standards, which impose more of a "mark-to-market" approach than the current U.S. accounting standard for private sector defined benefit pensions (FAS 87).¹⁷ This phase will involve addressing a broad range of issues including the measurement of plan obligations, selection of actuarial assumptions, and the display of benefit costs on the company's income statement. Thus, an attempt by the FASB to provide a more realistic assessment of pension plan finances is likely to introduce substantially more volatility in the reported financial results of the sponsoring companies, discouraging sponsorship of defined benefit pensions.¹⁸

FIGURE 3. LIFE EXPECTANCY AT 65, 2005-2055



Source: U.S. Social Security Administration (2005).

*Note: The reported numbers are "cohort" life expectancies, which are calculated by taking age-specific mortality rates that allow for known or forecasted changes in mortality in later years.

The Evolution of a Two-Tier Pension System

The final explanation for the freezing of pensions by healthy companies is the evolution of a two-tiered pension system. The approach of federal pension policy as far back as the 1940s has been to provide tax incentives that will encourage the highly paid employees to support the establishment of employer-sponsored plans that provide retirement benefits to the rank and file. The notion was that both the higher paid and lower paid employee would have a stake in the same system. Today, however, it appears that two separate systems have emerged — a tax qualified system relevant for the rank and file and a non-qualified system for the higher paid.

Two developments could have driven this bifurcation of the pension system. The first is legislative limits placed on benefits payable under qualified defined benefit plans. The argument here is that the government, by restricting the amount that participants could receive on a tax favored basis from a qualified pension plan, made these plans less relevant for the higher paid. Indeed, the Employee Retirement Income Security Act of 1974 (ERISA) set benefit limits under defined benefit plans at \$75,000

indexed to prices, or about seven times the wages of the average full-time worker (see Figure 4). Rapid inflation in the late 1970s and early 1980s increased the limit to \$136,425 in 1982. Legislation passed in 1982 reduced the limit in 1983 to \$90,000 and placed a three-year freeze on the cost-of-living adjustment; 1984 legislation extended the freeze through 1987. These changes reduced the ratio of the maximum defined benefit pension to the average wages per full-time equivalent employee from seven to four, where it remains today.¹⁹

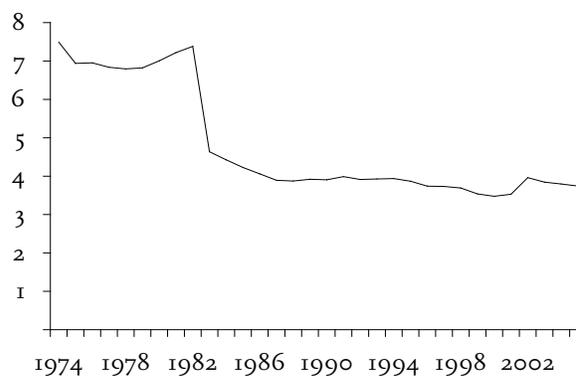
The structure of compensation within the corporation also has changed dramatically in the post-ERISA era. The compensation of the CEO has increased from 40 times the wages per full-time worker to almost 400 times that amount (Table 6). Over the same period, the compensation of the next two highest corporate officers relative to the average worker has increased more than five fold. When those in the upper echelons of a corporation earn such a high multiple of the average wage, pensions capped at four times the average wage become all but irrelevant. For this reason, firms provide pensions to executives through “nonqualified” supplemental executive retirement plans (SERPS). These SERPS are totally separate from the firm’s “qualified” pension plans and do not enjoy the tax subsidy accorded qualified plans.²⁰ Nevertheless, they have become an extremely important component of CEO compensation. A recent study estimates that the median value of the nonqualified pension compared to the executive’s total non-pension compensation over his tenure was 34 percent.²¹

TABLE 6. TOTAL COMPENSATION RELATIVE TO AVERAGE WAGES, 1936-2003

Period	CEO	Next 2 officers
1936-1939	82	56
1940-1945	66	44
1946-1949	49	37
1950-1959	47	34
1960-1969	39	30
1970-1979	40	31
1980-1989	69	45
1990-1999	187	95
2000-2003	367	164

Source: Frydman and Saks (2005).

FIGURE 4. DEFINED BENEFIT LIMIT AS A MULTIPLE OF WAGES PER FULL-TIME EQUIVALENT EMPLOYEE, 1974-2005



Sources: Internal Revenue Service (2005); Internal Revenue Service (2006); and U.S. Department of Commerce (2006).

The hypothesis here is that the enormous divergence in pay and the emergence of non-qualified plans as the main form of pensions for upper management have reduced the firm’s interest in the pension plan that benefits the rank and file. From the perspective of upper management, the separateness of the two systems makes it less worthwhile for the firm to absorb the costs and risks associated with providing a defined benefit plan for its employees. Interestingly, the nonqualified plans almost always take the form of a defined benefit plan based on final salary and years of service, while the rank and file have increasingly been transferred into defined contribution arrangements.

Why Now?

It is most likely that the confluence of the four factors described above: global competition, soaring health care costs, rising and volatile financial costs, and the emergence of a two-tier system — has sparked the onset of defined benefit plan freezes. If one had to choose, the financial cost may be the driving force because plan sponsors in the United Kingdom and Canada are also freezing their defined benefit plans and they do not face the same health care burdens or bifurcation of their pension system. They do face global competition, which may also be an important factor worldwide.

The accounting treatment of gains from freezing a plan also makes today's interest rate environment — low long-term rates combined with rising short term rates — a particularly propitious time.²² Under accounting rules, a company must calculate how much it will have to pay in future pensions, discount those payments to the present, and report that liability on its books. When a company freezes its pension, it reduces the amount of future benefits that it will have to pay. The reduction in liability for future benefits generates an accounting gain that can be counted as income. When long-term interest rates are low, future pension liabilities — the present discounted value of promised benefits — are high and the amount the company can write off is large.

A final factor affecting the timing of the freezes is that a slew of well-publicized pension shutdowns at steel companies and the airlines have made the demise of pensions seem commonplace. These sudden collapses, have left many workers wondering about the security of their defined benefit plans. Now that healthy companies have followed in the wake of the troubled ones, the shock value associated with future freezes has been eliminated.

Conclusion

Financially healthy companies are freezing their defined benefit pension plans and replacing them with a 401(k). This change has an immediate adverse effect on mid-career workers, and, even though younger workers do not recognize it, the shift will probably mean that many young workers will end up with an inadequate retirement income. For, while 401(k) plans are fine in theory and could even be superior for the mobile employee, they transfer too much of the responsibility to the individuals and individuals make mistakes at every step along the way. Median 401(k)/IRA balances in 2004 were only \$35,000 in 2004 according the Federal Reserve Board's most recent *Survey of Consumer Finances*.

There are more than enough explanations for the new trend. A desire to control compensation costs, the pressures of rising health care outlays, the confluence of economic, demographic, and regulatory risks, and the emergence of a two-tier pension system all make the sponsorship of defined benefit pension plans relatively unattractive. Moreover, the genie is out of the bottle. Given that the employer-sponsored pension system is a voluntary arrangement, nothing is likely to stop other healthy companies from following suit and closing down their defined benefit plans.

Endnotes

1 Kruse (1995) finds that little growth of defined contribution participants came from firms that terminated defined benefit plans; Papke (1999) finds that only about 20 percent of ongoing sponsors dropped defined benefit plans in favor of defined contribution plans. More recently, Watson Wyatt (2005) finds that although freezing or terminating plans is more common in less profitable firms, some healthy firms have closed their traditional defined benefit plan to new employees.

2 The PBGC can also initiate a plan termination under special circumstances.

3 Data on pension freezes is at best limited. Starting in 2002, the Form 5500 requires sponsors to report only total freezes; partial freezes and closing plans to new employees are not reported in the Form 5500. See PBGC (2005).

4 Defined-benefit plan amounts are based on 1.5 percent of the average of the last five salaries for each year of service, with a 5 percent discount for each year of benefit receipt before age 62. Calculations are based on a pattern of wage growth over a worker's career that is a composite of two factors. The first is the growth of nominal wages across the economy due to inflation and real wage growth. We use the projections of the Office of the Actuary of the Social Security Administration of 4.1 percent nominal wage growth, with inflation at 3 percent and thus real wage growth of 1.1 percent. The second factor is the rise and fall of earnings across a worker's career. We use an age-earnings profile based on career earnings profiles for males and females born between 1926 and 1965. In this profile, relative earnings reach a peak at age 47. After adding the economy-wide factors, real wages peak at age 51 and nominal wages at age 61. To facilitate comparisons with data collected in the 2004 Survey of Consumer Finances (SCF), our simulation sets the salary at age 50 to \$48,000. This results in a salary of \$18,500 at age 30 and an ending salary of \$58,000 at age 62 — the median earnings for individuals age 62 who are covered by a 401(k), according to the SCF. The contribution rate for the 401(k) is 9 percent a year, with a 7.6 percent nominal rate of return on assets. We use inflation-adjusted values for pension wealth at age 55 to facilitate comparisons with pension wealth at age 62. For more details on the calculations and assumptions, see Munnell and Sundén (2004).

5 These results are consistent with the findings of VanDerhei (2006) in which longer-tenure workers are more affected by pension freezes than younger workers.

6 Three recent studies find that reducing costs and limiting contribution volatility were the driving forces behind plan freezes. See Aon Consulting (2003), Hewitt Associates (2006), and Mercer Human Resource Consulting (2006).

7 Munnell and Soto (2004) estimate an average contribution rate to defined benefit plans of 7 percent of wages and salaries from 1950 to 2001; according to Munnell and Sundén (2004), the median employer match to a 401(k) plan in 2000 was about 3 percent of earnings.

8 Many companies have shifted more of the cost to retirees by increasing their premiums or co-payments. Others have capped the amount of retiree health care expense that they will absorb, essentially immunizing themselves from future cost increases. And some companies have completely eliminated retiree health care benefits for future retirees.

9 As noted in the recent *Economic Report of the President*, the employee bears the risk that the employer underfunds the plan (funding risk); invests in a reckless manner (portfolio risk); or encounters financial distress (bankruptcy risk). Even though benefits are insured by the PBGC, employees may well suffer a loss because of the cap on PBGC payments (\$47,659 at age 65, \$30,978 at age 60 in 2006).

10 Even if the plan purchases an annuity from an insurance company, unexpected increases in life expectancy will increase the cost of the annuity relative to the anticipated cost at the time when funds were initially set aside.

11 See Munnell and Soto (2004) for details on the circumstances that created a contribution holiday for defined benefit plans. They predict increases in contributions similar to the ones observed for the 2001-2003 period.

12 The vast majority of defined benefit sponsors today who are providing annuities do so through their own trusts, so they would be exposed directly to the increased costs. Some small plans are still administered through insurance arrangements, in which case the insurance company would be at risk.

13 For example see Oeppen and Vaupel (2002) and U.S. Social Security Advisory Board Technical Panel on Assumptions and Methods (2003).

21 Bebchuk and Jackson (2005).

14 401(k) plans are not exempt from legislative risk which can also be costly to sponsors. For example, increased regulation on the use of company stock could raise the cost of providing a 401(k) plan.

22 Schultz, et al. (2006).

15 The Senate bill is S. 1783 and the House bill is H.R. 2830.

16 On November 10, 2005, FASB approved a comprehensive review of accounting standards for private sector pensions and other post-retirement benefits.

17 It is likely that the United States would move toward something like IAS 19, the international pension accounting standard. IAS19 was amended in 2005 to resemble FRS 17, the U.K. pension accounting standard.

18 Mercer Human Resource Consulting (2006) estimates that the FASB proposal could reduce equity by more than 2 percent on the corporate balance sheet of all S&P 500 plan sponsors.

19 Thereafter, the limit grew in line with prices until the Economic Growth and Tax Relief Reconciliation Act of 2001, when it was raised to \$160,000 with annual increments of \$5,000 after 2003. In 2005, the average wage of a full-time equivalent worker was about \$45,430 and the maximum benefit participants could receive on their defined benefit plan was \$170,000, producing a ratio of four to one.

20 In the case of a qualified plan, the firm gets a deduction when it makes a contribution, but the employee does not have to pay tax on that contribution or the earnings on accumulated contributions until the monies are paid out as benefits in retirement. That is, the employee receives the benefit of deferring taxes on this portion of his compensation without increasing the tax liability of the company. In the case of nonqualified plans, the executive receives a promise of future pension benefits from the corporation and defers taxes until the benefits are paid in retirement, but the firm also has to wait until the money is paid before taking a deduction. Thus, the executive enjoys the advantage of deferring, but by being required to postpone the deduction the firm pays more tax than if compensation were paid in cash wages.

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