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Retirement Income Adequacy After PPA and FAS 158: Part One—Plan Sponsors' Reactions

By Jack VanDerhei, Temple University and EBRI Fellow

- ***EBRI/Mercer survey of retirement plan sponsors:*** In the spring of 2007, EBRI and Mercer Human Resource Consulting surveyed defined benefit (pension) sponsors to gauge their recent activity as well as planned modifications with respect to both defined benefit and defined contribution (401(k)-type) plan design and investment behavior within the defined benefit plans. The survey also was able to determine what, if any, increases in employer contributions to defined contribution plans were provided in conjunction with the defined benefit modifications.
- ***Past two years—A third closed or froze their pensions:*** Just over 35 percent of the respondents had made at least one change to their plan in the last two years. The most frequent responses were to close the plan to new hires (25.3 percent) or freeze the defined benefit plan for all members (12.9 percent).
- ***Next two years—Another third looking to close or freeze their pensions:*** Looking forward to planned changes, just over 33 percent of respondents that had not already changed their defined benefit plan in the last two years indicated they were likely to make a change in the next two years. Again, the most common change was to close the plan to new hires (19.0 percent); those planning to freeze the defined benefit plan for all participants rose to 14.2 percent.
- ***Many sponsors that cut pension benefits are increasing defined contribution benefits:*** For those pension plan sponsors that closed their defined benefit plan to new hires in the *last two* years, 78 reported they would increase employer contributions to the defined contribution plan. For those that plan to close their pension in the *next two years*, 80.9 percent reported they would increase employer contributions to their defined contribution plan.
- ***Automatic enrollment tied to pension changes:*** Among defined benefit pension sponsors that have closed their plan to new hires in the last two years or are planning to do so in the next two years, a relatively large percentage have already adopted automatic enrollment in their 401(k) plan, and a considerable percentage of those that have not are currently considering it:
  → Of those sponsors that *have already closed* the pension plan to new hires, 59 percent have adopted automatic enrollment features in the 401(k) plan, as opposed to 42 percent of those that have not.
  → Of those sponsors that *will close* the plan to new hires in the next two years, 61 percent have adopted automatic enrollment features, compared with 39 percent for those that do not plan to close the plan in the next two years.
- ***Benefits strategy, new pension law and accounting rules are affecting pension plans:*** The EBRI/Mercer survey shows that the driving forces behind these retirement plan changes are implementation of an overall business strategy to restructure employee benefits, followed by a new law (the Pension Protection Act of 2006, or PPA) that has increased pension funding costs and/or major new and pending accounting rules by the Financial Accounting Standards Board (FASB).
- ***Retirement income projections must account for PPA/FASB reactions:*** Any analysis of the retirement income adequacy of future retirees must factor in the extraordinary plan changes among defined benefit sponsors in the last few years, as well as their likely reaction to PPA and FASB rules—especially the widespread phenomenon of employers providing new or additional contributions to a defined contribution plan in an attempt to at least partially indemnify workers for the reduction in future pension benefits.

Jack VanDerhei, Temple University, is research director of the EBRI Fellows Program. This *Issue Brief* was written with assistance from the Institute's research and editorial staffs. Special thanks to Barbara Marder, Global Defined Contribution Consulting Leader at Mercer Human Resource Consulting, Sally Armbruster of Mercer Human Resource Consulting, and Craig Copeland, senior research associate at EBRI, for their invaluable help on the survey construction and interpretation of the results. Any views expressed in this report are those of the author and should not be ascribed to the officers, trustees, or other sponsors of EBRI, EBRI-ERF, or their staffs. Neither EBRI nor EBRI-ERF lobbies or takes positions on specific policy proposals. EBRI invites comment on this research.

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Introduction

Retirement income adequacy: What is it? Who is likely to have it? What can those who are not likely to have it do to improve their odds? These questions become increasingly important as the first waves of the 77-million baby boom generation begin to reach the end of their working careers and confront the reality of financing their lives in retirement.

For decades, the answers to these questions have been elusive at best. In recent years, researchers in this field have created several models that have helped to inform public policy in this regard. However, in the last few months there have been several articles in the popular press[1] suggesting that the financial plight of future retirees may be far less drastic than previously suggested.[2]

Regardless of one's assessment of the appropriate models, assumptions, and data thus far, it appears that any careful analysis of the retirement income adequacy of future cohorts of retirees must be modified substantially to factor in the extraordinary plan changes among defined benefit sponsors in the last few years as well as their likely reaction to the Pension Protection Act (PPA)[3] enacted by Congress in 2006 and new pension accounting rules issued by the Financial Accounting Standard board (FASB), the private-sector entity that sets professional standards for financial accounting and reporting[4]—in particular, Financial Accounting Standard (FAS) 158. This *Issue Brief* provides the first of a two-part publication that will update the answers to the three questions above for this historic moment in the defined benefit world.

EBRI and Mercer Human Resource Consulting (MHRC)[5] fielded a survey in the spring of 2007 to defined benefit sponsors attempting to elicit their recent activity as well as planned modifications with respect to both defined benefit (pension) and defined contribution (401(k)-type) plan design, and investment behavior for the defined benefit plan. Moreover, the survey was able to determine what, if any, increases in employer contributions to defined contribution plans (typically a 401(k) plan) were provided in conjunction with the defined benefit modifications.[6]

As the evidence in this *Issue Brief* will show, a staggering percentage of defined benefit sponsors make some type of associated modification in the defined contribution plan, effectively offsetting at least some of the reduced expected pension benefits with higher 401(k) benefits; accordingly, any attempt to model future retirement income adequacy without simulating the interaction between the two types of retirement plans is doomed to overestimate the negative impact of these modifications on future retirement income adequacy. In addition, EBRI used Mercer's expertise to provide the necessary actuarial information required to extrapolate this sample's responses to the population at large.

This *Issue Brief* provides an overview of the major provisions of PPA and the pension accounting changes for single-employer defined benefit plans, as well as an explanation of the expected impact of each on plan sponsors. The results of the recent *EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules* are then summarized with a focus on those results that will be most important for determining retirement income adequacy in the post-PPA/FAS 158 era. In a forthcoming *Issue Brief*, EBRI will use these results to modify its retirement security modeling programs[7] to simulate the impact of PPA and FASB on retirement income adequacy under a number of alternative scenarios. This will allow policymakers, retirement professionals, and the news media the opportunity to analyze these results in a timely fashion before most of the workers affected by these changes reach retirement age.

This would seem extremely important, given the 2007 Retirement Confidence Survey findings with respect to employees who have had their defined benefit plans frozen in recent years. Of the 17 percent of workers thus affected in the last two years, almost 4 in 10 indicate they have done nothing in response to the reduction in benefits (Helman, VanDerhei, and Copeland, 2007).

Pension Protection Act of 2006

Signed into law in August 2006, the Pension Protection Act (PPA) has been heralded by many as the most comprehensive reform of defined benefit pension plans since the enactment of the Employee Retirement Income Security Act of 1974 (ERISA), the major federal law governing employment-based benefits. In addition to completely revamping the minimum funding requirements for single-employer[8] defined benefit plans, it also expands the deduction limits for contributions to these plans and includes reforms that will affect both cash balance pension plans and defined contribution (401(k)-type) plans.

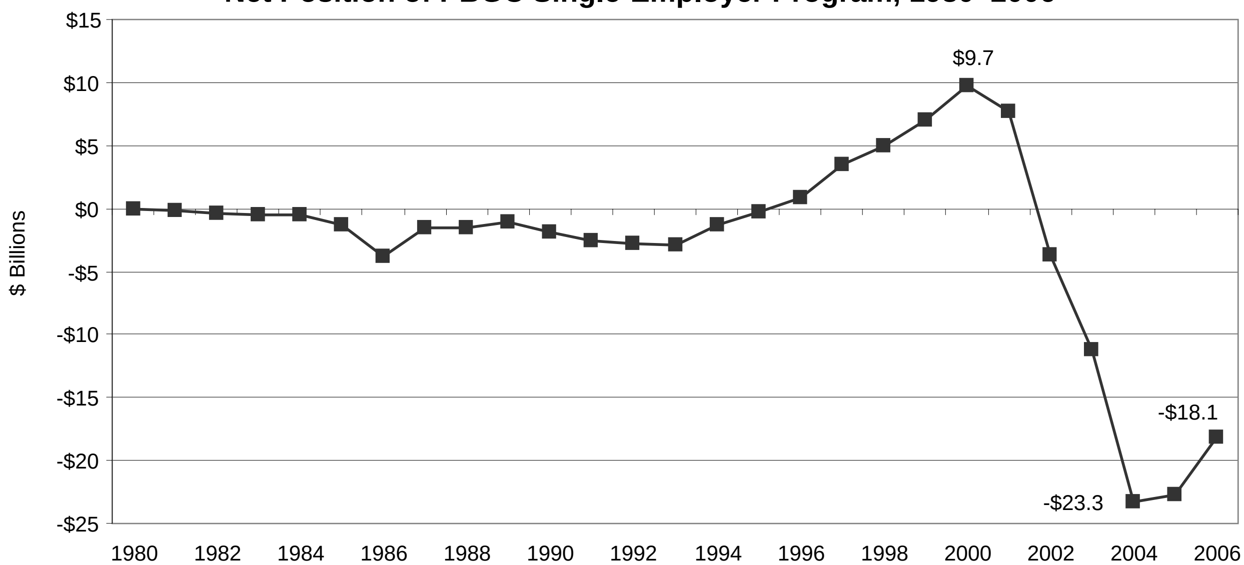
From a public policy perspective, one of the primary reasons for the need to modify the minimum required contributions for defined benefit plans was the financial shape of the single-employer plan termination insurance program administered by the Pension Benefit Guaranty Corporation (PBGC). Enacted as part of ERISA, the PBGC has evolved into a federal government entity providing an insurance-type benefit to indemnify pension plan participants (up to a limit) for certain defined benefit promises made by sponsors who enter bankruptcy with underfunded pension plans.[9]

The premium system for the single-employer plan termination insurance program has been two-tiered since the mid-1980s (VanDerhei, 1988a):

- The first tier is a per-capita premium that is currently equal to $30 per participant per year, but will be indexed to average national wage growth.
- The second tier is a variable premium of $9 per $1,000 of underfunding.

However, several studies had predicted that the level of insurance premia was far below the expected cost for many of the sponsors insured under this program, and that adverse selection and moral hazard would undoubtedly work toward the eventual financial distress of the system (VanDerhei, 1990, and Boyce and Ippolito, 2002). Although the financial position of PBGC had experienced cyclical fluctuations, by the mid-1990s it had entered a surplus position and by 2000 the surplus had grown to $9.7 billion (see Figure 1). However, after several years of falling discount rates[10] and negative rates of return on equity portfolios, by 2004 the surplus had turned into a deficit of $23.3 billion.

Figure 1
Net Position of PBGC Single-Employer Program, 1980–2006



Source: Pension Benefit Guaranty Corporation Annual Reports, 1989, 1998, and 2006.

In February of 2005, the Bush administration released its Single-Employer Defined Benefit Pension Reform Proposal, which attempted to control for several of the perceived limitations of the minimum funding requirements for the single-employer defined benefit pension system:

- Underfunded plans were typically given a funding target of only 90 percent. In essence, plans could be up to 10 percent underfunded without being subject to the special rules enacted to deal with the underfunding problem in 1987 and 1994.

- Discount rates used to value the plan liabilities for underfunded plans were averaged over four years. This means that if discount rates were steadily decreasing (a scenario that, in fact, occurred in the early part of this decade), the average discount rate could be much higher than the value needed to close out a terminated defined benefit plan. Since higher discount rates translate into lower present values of pension liabilities, the targets that sponsors were using in their calculations were at times artificially low.
- Similarly, asset values could be averaged over five years, subject to constraints. When equity values were low or negative for several consecutive years (again, a scenario experienced in this country in the early part of this decade), the *actuarial* value of pension assets could be considerably higher than their *true market* value at a time when the plan might be turned over to the PBGC.
- Finally, amounts paid in by plan sponsors in prior years that exceeded the minimum amounts legally required could be carried over at book value to be used in future years to reduce or eliminate minimum required contributions. These so-called "credit balances" would automatically accrue at the discount rate used in the calculations and could result in a book value substantially larger than the market value in the future.

The final form of the PPA as enacted by Congress varied substantially from the administration's proposal with respect to specific details, but it did attempt to deal with the more problematic situations mentioned above. Much of PPA is generally effective in 2008, but many provisions are to be phased in over several years.

The new minimum funding standards replace the previous two-tier system (a funding standard account for all plans plus the deficit reduction contribution for underfunded plans) with a new system in which all single-employer defined benefit plans will have a new funding target of 100 percent of plan liabilities.[11] In general,[12] the minimum required contribution will now be equal to the target normal cost plus a seven-year amortization[13] of unfunded liability, less any permissible credit balances. The target normal cost is the present value of all benefits that are expected to accrue or to be earned under the plan during the plan year, including prior-year benefit accruals that increase because of compensation increases in the current year.

Two assumptions used in computing pension expense will undoubtedly become more volatile under PPA:

- Instead of mandating a discount rate based on the four-year average of corporate bond rates for current liability calculations (as was the case under prior law), benefits will be grouped into three segments: (1) benefits expected to be payable within five years, (2) benefits expected to be payable after five years but within 20 years, and (3) benefits expected to be payable after 20 years. Each interest rate would then be averaged based on an unweighted 24-month average of these rates.[14]
- Plan asset values will likely also become more volatile under PPA, as the "smoothing period" for interest rate calculations has been reduced from five years to two years and the 20 percent corridor around the market value of assets that served as constraints on the actuarial value of assets has been reduced to 10 percent.

The administration's proposal attempted to deal with the moral hazard and adverse selection problems for the single-employer plan termination insurance program by establishing a proxy for the likelihood that defined benefit sponsors would go bankrupt and thus possibly present a claim to PBGC. The minimum required contribution under this proposal as well as the risk-based premia to PBGC would have been based on targets that vary depending on the financial health of the plan sponsor.[15] Instead of adjusting for the higher expected likelihood of financially troubled defined benefit sponsors becoming an insured claim for PBGC and directly reflecting this as an increased premium under a full-fledged risk-related premium, PPA reflects the increased severity from these plans by creating a separate category for "at-risk" plans and requires them to provide greater contributions to the plan.

At-risk liability is computed assuming that all participants eligible for benefits in the current year and the next 10 years retire at the earliest possible date and choose the most expensive form of benefits from a present value basis. A plan is defined to be at risk if it is both (1) less than 80 percent funded[16] under standard actuarial assumptions and (2) less than 70 percent funded using the at-risk assumptions. For purposes of this determination, plan assets must generally be reduced by the plan's credit balance.

The consequences of being designated as an at-risk plan under PPA is that it increases required contributions by increasing the target normal cost and the funding target. If the plan *also* was at risk in at least two of the prior five years, the target normal cost is further increased by 4 percent and the value of plan liabilities used to calculate funding shortfalls is also increased by 4 percent, plus a loading factor of $700 per participant.[17]

The treatment of credit balances under prior law was retained in many situations, but often at a price. For example, if the value of a plan's assets (reduced by any prefunding balance) is at least 80 percent of the plan's funding target (determined without regard to the at-risk rules) for the preceding plan year, the plan sponsor may elect to credit all or a portion of the funding standard carryover balance or prefunding balance against the minimum required contribution for the current plan year, thus reducing the amount that must be contributed for the current plan year. Moreover, existing credit balances and new prefunding balances[18] must both be subtracted from assets in determining the "adjusted funding target attainment" percentage that is used to determine whether certain benefits can be paid and whether benefit increases are allowed (Purcell, 2006). The problems arising from carrying credit balances at book value under prior law were dealt with by requiring such amounts to be adjusted for investment gains and losses since the date of the original contribution that created the credit balance.

PPA also provides incentives for plan sponsors to attain certain funding thresholds by providing for restrictions on benefit accruals, benefits increases, and utilization of lump-sum distributions (Purcell, 2006).[19] Under the new law, the plan sponsor is required to freeze benefit accruals for current participants in plans funded at less than 60 percent.[20] Plan amendments that increase benefits are prohibited if the plan is funded at less than 80 percent of the full funding level, unless the employer makes additional contributions to fully fund the new benefits. Lump-sum distributions are prohibited if the plan is funded at less than 60 percent of the full funding level or if the plan sponsor is in bankruptcy and the plan is less than 100 percent funded. If the plan is funded at more than 60 percent but less than 80 percent, the plan may distribute as a lump sum no more than half of the participant's accrued benefit.

Expected Impact of PPA on Single-Employer Defined Benefit Plans

Condeluci (n.d.) argues that there may be three reasons to expect PPA to prompt pension plan sponsors to freeze accruals for current employees in their plans:

1. Sponsors may be required to fund their plans to a higher level and over a shorter period of time.
2. The new restriction on benefits.
3. The effect credit balances will have on plan assets.

Under prior law—with basic elements dating all the way back to the passage of ERISA in 1974—the minimum required contributions for defined benefit plans were determined by the plan's funding standard account. In general, this would require the plan to make an annual contribution equal to its normal cost plus amortization of supplemental liability plus (minus) an amortization based on experience losses (gains). This value could then be reduced by credit balances that had been carried over at book value and/or funding waivers. In general, the amortization period for supplemental liability was 30 years, while the amortization period for experienced gains or losses was five years.[21]

Based on 1987 legislation (and amended in 1994), certain underfunded plans were required to pay an additional amount based on the deficit reduction contribution (DRC) if the funded current liability percentage[22] for the plan year is less than 90 percent. The DRC is generally the sum of (1) the "unfunded old liability amount," (2) the "unfunded new liability amount," and (3) the expected increase in current liability due to benefits accruing during the plan year. The "unfunded old liability amount" is the amount needed to amortize certain unfunded liabilities under 1987 and 1994 transition rules.[23] The "unfunded new liability amount" is the applicable percentage of the plan's unfunded new liability. The applicable percentage is generally 30 percent, but decreases by 0.40 of 1 percentage point for each percentage point by which the plan's funded current liability percentage exceeds 60 percent. Based on a 6 percent discount rate, the equivalent amortization period for a plan with a funding ratio of 60 percent or less would be approximately three years.

Therefore, the overall impact of the change to a uniform amortization period is difficult to assess. It would appear in most cases that well-funded plans with substantial supplemental liabilities will now be required to amortize the amount more rapidly; however, underfunded plans, especially those with funding ratios below 60 percent, may find that the amortized amounts may be decreased.[24] Condeluci argues that this increase in funding contributions for well-funded plans may be sufficient to force at least some of them to freeze benefit accruals (which would, in essence, either eliminate or greatly reduce the normal cost component of the minimum required contribution).[25]

The argument put forth by Condeluci with respect to restrictions on benefits suggests that some plans with funding ratios less than 60 percent will take the mandated freeze imposed by PPA and choose to make it permanent. Other sponsors that may be forced to at least partially curtail the availability of lump-sum distributions due to the new PPA-imposed restrictions may find this to be sufficient incentive to freeze the defined benefit plan and offer a defined contribution plan to the employees instead. Moreover, the constraints on collective bargaining negotiations going forward may be reduced if the plan sponsor can reach an agreement with the union and freeze future benefit accruals.

Finally, Condeluci argues that the modification in the utilization of credit balances in the post-PPA period may cause some employers to reconsider their original decision to sponsor a defined benefit pension plan at all. He suggests that this may be especially true if a well-funded defined benefit plan would be considered at risk or subject to benefit restrictions as a result of the credit balance's impact on the plan assets.

Changes in Pension Accounting Standards

For sponsors of defined benefit pension plans, the impact of PPA goes far beyond the annual cash contributions they are required to make to the plans. In addition, plan sponsors filing public accounting statements must also be cognizant of the protocols established by the Financial Accounting Standards Board (FASB)[26] with respect to accounting for these plans. For several years after the passage of ERISA in 1974, the reported expense for a defined benefit plan was often the same as the cash contribution; however, with the introduction of FASB statement no. 87, *Employers' Accounting for Pensions,* income statements for fiscal years beginning after December 15, 1986, were required to follow a new approach to determining pension expense that would limit employers' discretion in choice of assumptions and actuarial cost methods so as to provide a more standardized set of pension expense values. Employers' balance sheet items were similarly affected by this statement, although the effective date was delayed to fiscal years beginning after Dec. 15, 1988.[27]

Under FASB 87, the net periodic pension cost is made up of the following six components: (1) service cost; (2) interest cost; (3) actual return on plan assets, if any; (4) amortization of unrecognized prior service cost, if any; (5) gain or loss to the extent recognized; and (6) amortization of the unrecognized net asset or obligation existing at the date of the initial application of FASB 87.

Service cost is the actuarial present value of benefits attributed by the pension benefit formula to employee service during that period. *Interest cost* is the increase in the projected benefit obligation due to the passage of time. This can be thought of simply as the accrual of interest on a present value or discounted amount. The *actual*[28] *return* on plan assets is based on the fair value of plan assets at the beginning and the end of the period, adjusted for contributions and benefit payments. The *prior service cost* component for accounting purposes is the increase in the projected benefit obligation due to a plan amendment, amortized by assigning, at the date of the amendment, an equal amount for each active employee's future period of service, if he or she is expected to receive benefits under the plan.[29] In certain cases, the *amortization of prior service cost* must be accelerated. A history of regular plan amendments may indicate that the period during which the employer expects to benefit from the plan (through employee goodwill, wage concessions, etc.) for an amendment is shorter than the remaining service period. This is likely to transpire in collective bargaining agreements with flat-dollar plans in which the dollar amount is renegotiated upward every several years to provide improved benefits to active employees and retirees. If participants expect benefits to be liberalized on a periodic basis, it is unlikely that the employer's economic benefits from the amendment will extend beyond one interval.[30]

The fifth component of net periodic pension cost, *gain or loss,* results from changes in either the projected benefit obligation or plan assets. These changes result either from experience different from that assumed, including both realized and unrealized gains and losses, or from changes in assumptions. Asset gains and losses are equal to the difference between the actual return on assets during a period and the expected return on assets for that period. The expected return on plan assets is determined by the expected long-term rate of return on plan assets and the market-related value of plan assets. Amortization of net gains or losses that have not yet been recognized in the costs calculated in prior periods is included as a component of the current net pension cost if, at the beginning of the year, the unrecognized net gains or losses (excluding asset gains and losses not yet reflected in market-related value) exceed a so-called corridor amount. This corridor was designed to minimize the pension cost volatility that would otherwise be experienced under the new accounting standard.[31]

The final component of net periodic pension cost is the *amortization of the unrecognized net asset or obligation* existing at the date of initial application of FASB 87.

Although FASB Statement No. 132, *Employers' Disclosures About Pensions and Other Postretirement Benefits*, recently modified the disclosures required under FAS 87, it did not change the recognition or measurement of defined benefit plans. As the impact of bear and bull markets played out on defined benefit plans in the last 20 years, an increasing number of analysts began to question whether the so-called "smoothing" of gains and losses resulting from differences in expected and realized investment returns was in the best interests of the financial statement users. After the Enron debacle, the outcry for increased transparency in public accounting statements increased and the practice of certain off-balance sheet calculations required by FAS 87 for items such as unamortized prior service cost and unrecognized gains and losses became an increasing target of controversy. Indeed, even the basic definition of how a pension plan liability should be defined (at least for final-average defined benefit plans) was questioned.

Perhaps as a result of this activity, in November 2005 FASB announced it would begin a two-phase approach to revise the basic accounting element for sponsors of defined benefit plans. The first phase was completed in September 2006 with the publication of FASB Statement No. 158, *Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans.* This Statement was designed to improve financial reporting by requiring an employer to recognize the overfunded or underfunded status of a defined benefit postretirement plan as an asset or liability in its statement of financial position and to recognize changes in that funded status in the year in which the changes occur through comprehensive income of a business entity.[32]

The second, broader, phase would comprehensively address remaining issues, including:[33]

- How best to recognize and display in earnings and other comprehensive income the various elements that affect the cost of providing postretirement benefits.
- How best to measure the obligation, in particular the obligations under plans with lump-sum settlement options.
- Whether more or different guidance should be provided regarding measurement assumptions.
- Whether postretirement benefit trusts should be consolidated by the plan sponsor.

Expected Impact of FASB Changes on Single-Employer Defined Benefit Plans

The results of the implementation of FAS 158 on shareholders' equity has been significant for many large defined benefit sponsors;[34] however, many analysts would argue that this is not reflecting any new information that was not already disclosed in the footnotes to the financial information. Theoretically, this information was already embedded in the valuation models used in analyzing stocks, and therefore there should be little FAS 158-specific impact on stock prices.[35]

The expected impact from the second phase of the pension accounting changes will be much more difficult to predict until such time as the final form of the modifications has been disclosed. Several authors[36] have suggested that in an attempt to bring U.S. pension accounting standards into conformity with those evolving for international accounting standards, it is possible that the second phase of the accounting reform will substitute actual investment returns for expected returns in the calculation of the pension expense. Unless a defined benefit sponsor is willing to invest the pension assets in a portfolio designed to replicate the percentage changes that would be realized by the present value of pension liabilities, this change would undoubtedly increase the volatility of the reported pension expense.[37]

The importance of FASB's changes, if any, in the treatment of the volatility of the asset returns (whether in isolation or when offset by the volatility of the present value of liabilities) will depend to a large extent on whether pension income will be bifurcated into operating and nonoperating income components. If FASB were to conclude that the only component of pension expense that is actually an operating cost would be the plan's service cost, then the pension plan-induced volatility on operating income would likely decrease regardless of the treatment of the other components.

EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules

In April of 2007, EBRI and Mercer fielded a survey designed to elicit information from Mercer's retirement business contact list on retirement program changes after the adoption of PPA and the new FASB accounting rules. Employers that sponsored defined benefit pension plans in the United States were asked to complete the survey. Although similar types of surveys had been conducted earlier (Towers Perrin, 2006, and Pyramus, 2007), this survey had the advantages of being distributed at a much later date[38] and the greater likelihood that the plan sponsor would have sufficient information for a detailed cost/benefit analysis of what types of plan modifications and/or investment changes were being considered.

The survey asked questions concerning:

- The current defined benefit plan (before any changes).
- The current defined contribution plan (before any changes).
- Defined benefit plan changes.
- Change drivers for changes made to the retirement program.
- Changes to defined benefit plan investment allocations.
- Defined contribution plan changes.
- The immediate impact of PPA on minimum funding requirements for the current defined benefit plan.
- The impact of PPA on minimum funding requirements over five to 10 years for the current defined benefit plan.
- The size of the employer's domestic work force, its industry, and whether it is a public or private entity.
- Information on the defined benefit plan benefit formulae before and after plan changes.
- Information on the employer contribution to the defined contribution plan (if any) before and after plan changes.

A total of 162 responses were obtained with the following plan size distribution:

Number of Domestic Employees	Percentage of Sample
Fewer than 5,000	54.32%
5,000–10,000	16.67
10,001–24,999	16.67
25,000+	12.35

In addition to the information mentioned above, a variety of defined benefit financial data were collected by the Mercer actuary assigned to the plan. These data will be critical in allowing further simulation modeling as described later in the *Issue Brief*.

Survey Results

The EBRI/Mercer survey provides several useful statistics with respect to the overall type and frequency of defined benefit changes and the association between whether a plan sponsor closes its pension plan to new workers or freezes the accrual of pension benefits for current workers, and several employer and plan-specific characteristics. It also provides information on which "change drivers" were most important to those already closing or freezing a plan, as well as to those planning to do so in the next two years. Although more detailed actuarial information will be available in the second portion of this study (in which the EBRI/ERF Retirement Security Projection Model will be modified to analyze how plan modifications in the wake of PPA and FASB have affected retirement income adequacy), there is sufficient information at this stage to show the associations between the plan sponsors' expected change in minimum funding contributions resulting from PPA and their intention to either close or freeze the plan.

As mentioned in the introduction to this *Issue Brief*, one of the major limitations of previous attempts to analyze the financial impact of pension freezes upon the employee population was the lack of information on what improvements, if any, were likely to simultaneously be made to the employer's defined contribution plan. This section provides additional information on the relationship between the two plans. In addition, it analyzes the likelihood that a plan sponsor that is closing or freezing a defined benefit plan will adopt automatic enrollment in its 401(k) plan (perhaps coupled with automatic escalation provisions).

Finally, this section describes the likely change in sponsors' asset allocation for pension fund investments of defined benefit plans. Although this will not likely result in immediate modifications in plan formulae, it is possible that if the expected return on the portfolio is reduced through increased concentrations in bonds and other fixed-income investments, the resulting increase in the expected cost of funding defined benefit plans, all else equal, will further diminish the relative value of a pension plan in the eyes of some sponsors.

Defined Benefit Plan Changes

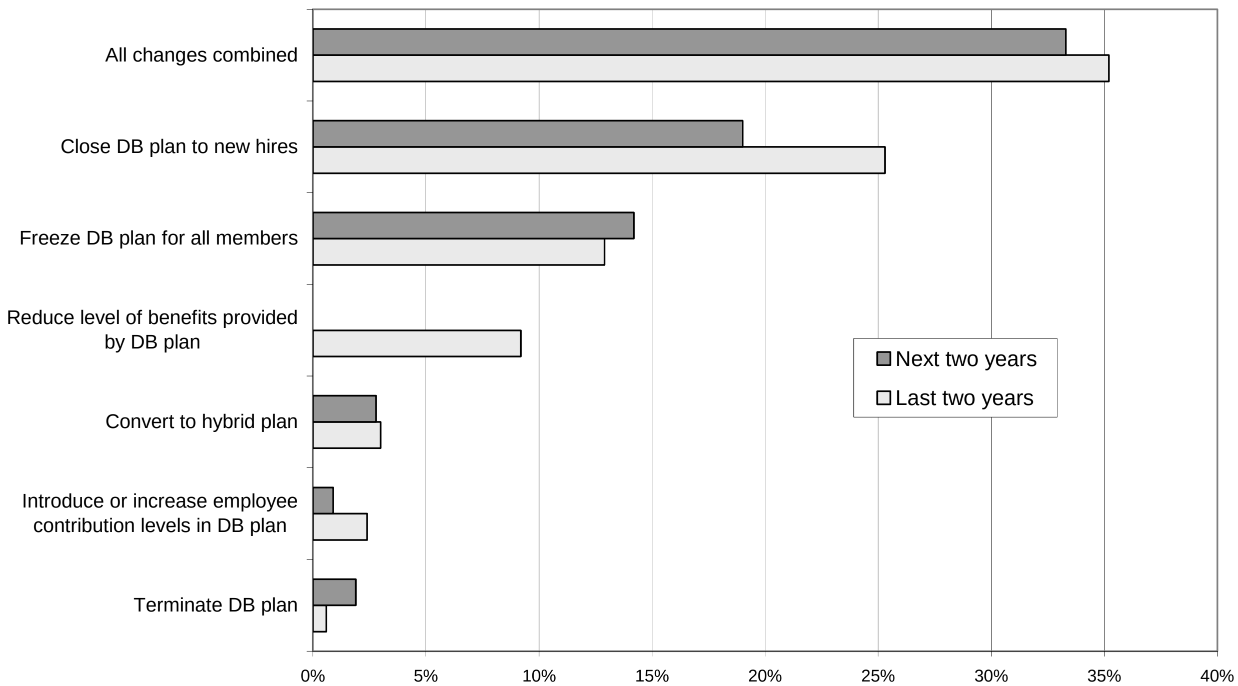
Survey respondents were asked if they had made any of several types of changes to their defined benefit plan in the last two years or intend to make them in the next two years.[39] Figure 2 shows that a total of 35.2 percent of the respondents had made at least one change to their plan *in the last two years.* The most frequent response was to close the plan to new hires (25.3 percent), followed by freezing the defined benefit plan for all members (12.9 percent). Another 9.2 percent of the respondents replied that they had reduced the level of benefits provided by the defined benefit plan in the last two years, presumably by reducing the generosity parameter for future accruals (e.g., reducing the benefit formula from 1.2 percent of final average compensation per year to 1.0 percent). Three percent had converted to a hybrid plan during that period[40] and another 2.4 percent of the respondents mentioned that they had either introduced or increased employee contribution levels in the defined benefit plan. Less than 1 percent (0.6 percent) of the respondents had terminated their defined benefit plan during this time.

Looking forward to planned changes, a total of 33.3 percent of the respondents that had not already made a change to their defined benefit plan in the last two years indicated they were likely to make a change *in the next two years:*

- Again, the most common change was to close the plan to new hires (19.0 percent).
- However, the percentage of those planning to freeze the defined benefit plan for all members rose to 14.2 percent.
- No respondents that had not already made a change in the last two years indicated they were planning to reduce the level of benefits provided by the defined benefit plan in the next two years.
- The percentage of those likely to convert to a hybrid plan was almost identical to the percentage that had performed this transaction in the last two years (2.8 percent).
- Less than 1 percent (0.9 percent) of these sponsors planned to introduce or increase employee contributions to the defined benefit plan, but nearly 2 percent (1.9 percent) of the respondents indicated that they planned to terminate the defined benefit plan in the next two years.[41]

Figure 3 explores the characteristics of those defined benefit sponsors that have already frozen or closed their defined benefit plan in the last two years or plan to do so in the next two years. The top row in the first two columns focuses on the percentage of defined benefit sponsors closing the plan to new hires. As indicated above, overall 25.3 percent of the respondents had already closed the plan in the last two years, while 17.4 percent of those that had not already closed the plan in the last two years indicated that they planned to do so in the next two years.[42] The top row in column three shows that 13.0 percent of the

Figure 2
Percentage of Defined Benefit Sponsors Having Made or Planning to Make a Change to Their Plan*



Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.
* Percentage for next two years is conditional upon the plan sponsor not having made a change in the last two years.

respondents indicate that they either have already frozen their defined benefit plan for all members in the last two years, while the top row in column four indicates that 12.0 percent of those that have not already frozen their plan for all members in the last two years plan to do so in the next two years.

The top row in column five of Figure 3 shows that after controlling for all double counting, more than 2 in 5 defined benefit sponsors (43.8 percent) have either closed or frozen their plan in the last two years or plan to do so in the next two years. The top row in column six shows the percentage of defined benefit sponsors that have already closed or frozen their plan in the last two years (27.7 percent overall), and the top row in column seven isolates the expected new activity in the next two years for those defined benefit sponsors that have not already closed or frozen their plans in the last two years. Overall, approximately 1 in 6 defined benefit sponsors (16.1 percent) are likely to either close or freeze their plan in the next two years.

Subsequent rows of information in Figure 3 show there is significant variation by plan and sponsor characteristics. Column five shows that publicly held sponsors (48.6 percent) are much more likely to have had or plan to have a freeze or to close than their not-for-profit (39.2 percent) and privately held (35.4 percent) counterparts. There also appear to be pronounced industry associations, ranging from a high of 61.5 percent planning to freeze or close for consumer discretionary to a low of 33.3 percent for insurance. The size of the employer as measured in number of domestic employees appears to have a mixed association with this probability, with those in both the smallest and largest size categories having a significantly smaller likelihood of freezing or closing than the two intermediate size groupings. As might be expected, defined benefit plans covering collectively bargained (union) employees have a somewhat lower percentage (42.4 percent) than plans that do not cover collectively bargained employees (53.4 percent).

The type of defined benefit plan also appears to play an important role in freezing and closing activity. Whereas 54.1 percent of career average plans and 55.8 percent of final average pension plans indicate such activity in this four-year period, only 36.1 percent of the hybrid (cash balance) pension plans are in this group. Not surprisingly, the largest single factor on closing/freezing activity appears to be the expected

Figure 3
Percentage of Defined Benefit (DB) Sponsors Closing or Freezing Plans, as a Function of Plan and Employer-Specific Characteristics

	Close DB to New Hires		Freeze DB Plan for All Members		Close or Freeze DB Plan		
	Previous two years	Next two years*	Previous two years	Next two years*	Previous two or next two years	Previous two years	Expected new activity in the next two years
Total	25.3%	17.4%	13.0%	12.0%	43.8%	27.7%	16.1%
Type of Employer							
Not-for-profit	10.7	24.0	3.6	18.5	39.2	10.7	28.5
Other	25.0	33.3	16.7	20.0	50.0	25.0	25.0
Privately held	25.8	0.0	22.5	8.3	35.4	32.2	3.2
Publicly traded	32.4	18.0	13.5	9.3	48.6	33.7	14.9
Industry							
Consumer discretionary	46.1	28.6	15.3	0	61.5	46.1	15.4
Financial/banking	17.7	14.3	17.6	21.4	41.1	23.5	17.6
Health care	20.0	18.8	5.0	21.0	45.0	20.0	25.0
Industrials	30.8	22.2	38.4	0	53.8	46.1	7.7
Insurance	13.3	15.4	13.3	7.6	33.3	20	13.3
Number of Domestic Employees							
Fewer than 5,000	20.5	15.7	11.3	15.3	38.6	22.7	15.9
5,000–10,000	29.6	26.3	22.2	14.2	55.5	33.3	22.2
10,001–24,999	37.0	17.7	11.1	4.1	55.5	40.7	14.8
25,000+	25.0	13.3	10.0	5.5	35.0	25.0	10.0
Collectively Bargained							
No	27.1	18.5	13.5	17.9	53.4	31.0	22.4
Yes	33.3	9.0	15.1	3.5	42.4	33.3	9.1
Type of DB Plan							
Career average	37.5	13.3	20.8	10.5	54.1	45.8	8.3
Cash balance	22.2	7.1	16.6	16.6	36.1	25.0	11.1
Final pay	26.5	34.0	8.8	14.5	55.8	27.9	27.9
Likely Immediate Impact of PPA on Minimum Funding Requirements							
More than 10% increase	18.8	38.5	6.2	33.3	68.7	18.7	50
10% or less increase	31.6	23.1	15.7	18.7	50	31.5	18.5
Don't know	31.1	12.9	15.5	10.5	46.6	35.5	11.1
Other	18.3	12.2	11.6	3.7	31.6	21.6	10.0

Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.
* Conditional upon not having already performed this action in the last two years.

impact of PPA on minimum pension funding requirements. More than 2 out of 3 sponsors (68.7 percent) expecting that their minimum required contribution will increase by more than 10 percent indicate that they either have frozen or closed their plan in the last two years or expect to do so in the next two years (50 percent of the sponsors in this category expect either to freeze or close the plan in the next two years). This number drops to 50 percent for those with a 10 percent or less expected increase in their minimum required contributions as a result of PPA and 46.6 percent for those who do not know yet.

Change Drivers for Sponsors Closing or Freezing a Defined Benefit Plan

Survey respondents that made changes to their retirement programs were asked to rank on a three-point scale (1 = *not important*, 2 = *somewhat important*, and 3 = *very important*) how important they believe each of 10 change drivers were with respect to their decision to modify the programs. Figure 4 shows the average value for defined benefit sponsors that either froze the plan for all members or closed it to new hires in the last two years or expect to do so in the next two years. As can be seen from the top row of Figure 4, the most important factor has nothing to do with either PPA or FASB; instead, defined benefit sponsors involved in or planning to freeze or close were primarily interested in an overall benefit restructuring strategy (average value of 2.72).

The impact of PPA was perceived to be of importance to many defined benefit sponsors freezing or closing their plans, but the *volatility* on contributions (2.51) was more important than the impact on the *level* of contributions to the plan (2.31). Potential constraints imposed by PPA for certain underfunded plans with respect to future benefit increases, payments, or accruals were perceived to be much less important on average (1.95). FASB's perceived impact was approximately the same with respect to the potential impact of the Phase II accounting changes on profit and loss (2.38) and the balance sheet impact (2.36). Other reasons often cited in the past appeared generally to be of lesser importance: competitive pressures (2.36), younger workers' lack of interest in defined benefit pensions (2.13), and legal challenges and uncertainty (1.90).

When these numbers are broken out by various plan and employer characteristics, several interesting results are revealed that may be used to predict likely future activity with respect to defined benefit plan freezing and closing. The PPA impact may be expected to be of more concern to smaller plans as well as those expecting to pay the largest percentage increases in minimum required contributions. This is precisely what is revealed in columns four through six of Figure 4. The average value of column four (PPA impact on the level of contributions to the defined benefit plan) is 2.50 for the smallest size category (fewer than 5,000 domestic employees) and decreases steadily until it reaches a value of only 1.66 for the largest size category (more than 25,000 domestic employees). A similar finding is shown in column five (PPA impact on the defined benefit contribution volatility), with the average value falling from 2.74 to 1.85.

Although less important overall, there is also a large spread in column six (potential PPA constraints on future benefit increases, payments, or accruals), with the average value falling from 2.29 to 1.28.

The values for these three columns are also much higher for those defined benefit sponsors that believe that the immediate impact of PPA will be to increase minimum contributions by more than 10 percent. The average value for these sponsors with respect to the *level* of contributions is 2.72, compared with the overall average of 2.31 for this question. The average value for *volatility* of contributions is 2.81, compared with an overall average of 2.51. The impact of PPA constraints on future benefit increases, payments, or accruals is 2.4 versus an overall average of 1.95.

Similar findings with respect to FASB's impact can be found in columns seven and eight of Figure 4. Both the balance sheet impact (column seven) and the potential impact on profit and loss (column eight) show a distinct size effect, with the average value ranging from 2.50 for the smallest size category to 1.66 for the largest size category for the balance sheet impact and 2.61 to 2.00 for the profit and loss impact. The expected impact of FASB is also correlated with the sponsors' expectation of the impact of PPA on the minimum required contributions. The average value of the balance sheet impact for those expecting more than a 10 percent increase in contributions is 2.87, compared with an overall average of 2.36, while the average value of the profit and loss impact is 2.55 versus an overall average of 2.38.

Another common perception is that it would be more difficult to make a defined benefit plan change for financial reasons with a plan covering collectively bargained employees.[43] Evidence supporting this notion can be seen from all five columns dealing with PPA and FASB influences (columns four through eight). In each case, the average value attached to the change driver is substantially higher for plans that are *not* covering collectively bargained employees.

Another noteworthy finding from Figure 4 deals with competitive pressures (column 2). In this case, the average value assigned by those that are publicly traded is much higher (2.54) than either their privately held (2.30) or not-for-profit (2.10) counterparts.

Unfortunately, the sample size for the survey was not sufficiently large to confine the results for Figure 4 to only those defined benefit sponsors planning to close and/or freeze their plans in the next two years. However, an overall sense of the increasing importance of PPA's and FASB's influence on this decision-making process can be gleaned from Figure 5. In columns one and two, the average impact of the change drivers are reported separately for defined benefit sponsors that have *already closed* their plan to new hires in the last two years and those that *plan to do so* in the next two years. Columns three and four provide a similar bifurcation for defined benefit sponsors freezing their plan for all members.

Comparing columns one and two, it appears that PPA's impact on level of contributions (2.24 for the past two years vs. 2.43 for the next two years) and contribution volatility (2.41 vs. 2.76) will become more important with respect to closing defined benefit plans to new hires, as expected. However, the importance of a mandatory constraint on future benefit increases, payments, or accruals does not change (1.89 for both).

Figure 4

Impact of Change Drivers for Defined Benefit (DB) Sponsors Already Having Closed or Frozen the Plan or Planning to Do So in the Next Two Years

(1 = not important, 3 = very important)

	Overall Benefit Restructuring Strategy	Compet-itive Pressures	Younger Workers' Lack of Interest in DB Pension	PPA Impact on the Level of Contributions to the DB Plan	PPA Impact on the DB Contribution Volatility	Potential PPA Constraints on Future Benefit Increases, Payments, or Accruals	Balance Sheet Impact of the New FAS 158 Accounting Rules	Potential Impact of FASB's Phase II Accounting Changes on P&L	Legal Challenges and Uncertainty
Total	2.72	2.36	2.13	2.31	2.51	1.95	2.36	2.38	1.90
Type of Employer									
Not-for-profit	2.70	2.10	2.30	2.40	2.70	2.00	2.77	2.55	1.70
Privately held	2.80	2.30	2.50	2.20	2.30	2.22	2.20	2.44	1.90
Publicly traded	2.74	2.54	2.20	2.17	2.42	1.75	2.27	2.32	1.90
Industy									
Consumer discretionary	2.87	2.25	2.12	2.28	2.50	1.75	2.00	2.00	1.62
Financial/banking	2.57	2.42	2.14	2.66	2.66	2.16	2.42	2.50	1.85
Health care	2.57	2.28	2.28	2.42	2.57	2.14	2.66	2.66	1.71
Industrials	2.57	2.42	2.00	2.28	2.50	2.16	2.50	2.50	2.28
Insurance	2.80	2.60	2.60	1.80	2.20	1.60	2.60	2.20	2.40
Number of Domestic Employees									
Fewer than 5,000	2.59	2.19	2.06	2.50	2.74	2.29	2.50	2.61	2.00
5,000–10,000	2.92	2.64	2.21	2.46	2.46	1.76	2.41	2.16	1.92
10,001–24,999	2.80	2.60	2.35	2.06	2.40	1.80	2.33	2.27	2.00
25,000+	2.71	2.14	1.85	1.66	1.85	1.28	1.66	2.00	1.85
Collectively Bargained									
No	2.75	2.36	2.05	2.38	2.58	1.97	2.44	2.45	2.00
Yes	2.64	2.35	2.38	2.14	2.35	1.84	2.09	2.18	1.69
Type of Defined Benefit Plan									
Career average	2.79	2.61	2.15	2.53	2.69	2.07	2.80	2.80	2.41
Cash balance	2.61	2.46	2.07	2.08	2.50	2.00	2.41	2.58	1.92
Final pay	2.74	2.25	2.11	2.35	2.52	1.87	2.20	2.21	1.79
Likely Immediate Impact of PPA on Minimum Funding Requirements									
More than 10% increase	2.54	2.09	1.72	2.72	2.81	2.40	2.87	2.55	2.18
10% or less increase	2.89	2.57	2.26	2.15	2.44	1.94	2.11	2.50	1.78
Don't know	2.63	2.21	2.22	2.23	2.50	1.70	2.33	2.28	1.88
Other	2.72	2.44	2.22	2.27	2.38	1.88	2.35	2.23	2.05

Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.

Figure 5
Impact of Change Drivers for Defined Benefit (DB) Sponsors Already Having Closed or Frozen the Plan or Planning to Do So in the Next Two Years, by Type of Freeze
(1 = not important, 3 = very important)

	Close DB Plan to New Hires		Freeze DB Plan for All Members	
	Previous two years	Next two years	Previous two years	Next two years
Overall Benefit Restructuring Strategy	2.72	2.81	2.80	2.68
Competitive Pressures	2.38	2.29	2.50	2.21
Phased Retirement	1.56	1.65	1.65	1.50
Younger Workers Lack of Interest in DB Pension	2.16	2.05	2.40	2.05
PPA Impact on the Level of Contributions to the DB Plan	2.24	2.43	2.16	2.37
PPA Impact on the DB Contribution Volatility	2.41	2.76	2.28	2.63
Potential PPA Constraints on Future Benefit Increases, Payments or Accruals	1.89	1.89	1.95	2.07
Balance Sheet Impact of the New FAS 158 Accounting Rules	2.27	2.40	2.35	2.44
Potential Impact of FASB's Phase II Accounting Changes on Profit/Loss	2.43	2.35	2.35	2.56
Legal Challenges and Uncertainty	2.03	1.81	2.37	1.68

Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.

The balance sheet impact of FAS 158 also increases in importance (2.27 for the last two years vs. 2.40 for the next two), but the impact of the Phase II changes on profit and loss actually decreases (2.43 vs. 2.35).

The increasing importance of PPA and FASB changes on plan freezes going forward can be seen from columns three and four in Figure 5. In this case, all three PPA change drivers increase in importance: the *level of contributions* increases from 2.16 to 2.37; *contribution volatility* increases from 2.28 to 2.63; and the *constraints on benefit increases, payments, or accruals* increase from 1.95 to 2.07. Similarly, both FASB influences also increase: the *balance sheet impact* increases from 2.35 to 2.44 and the Phase II *change on profit and loss* increases from 2.35 to 2.56.

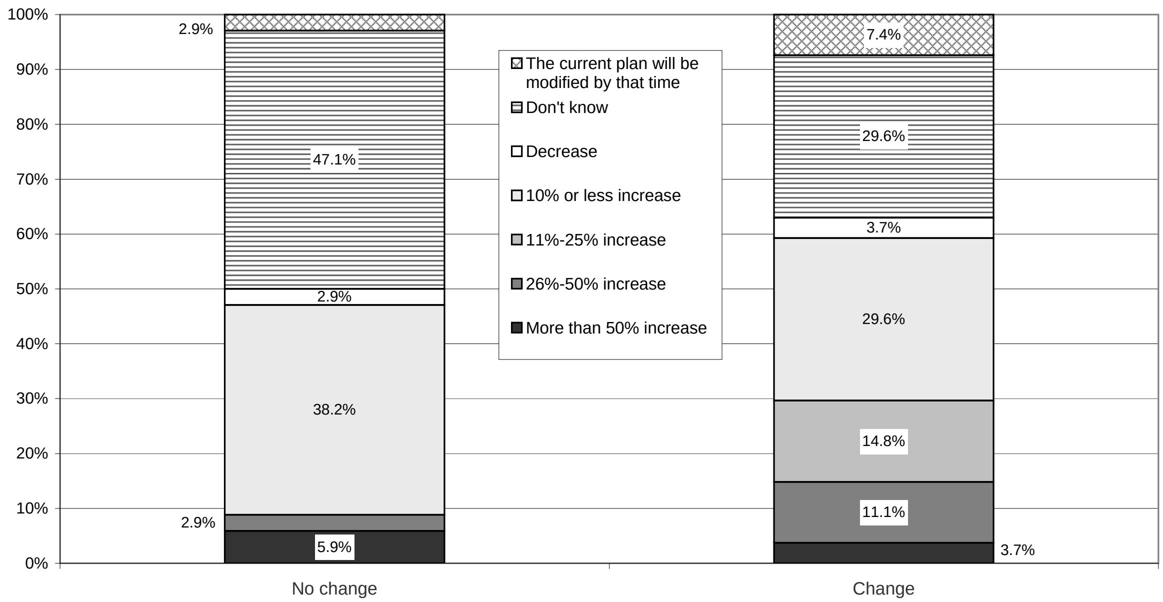
Expected Change in Minimum Funding Contributions and its Association With Closing or Freezing the Plan

Survey respondents were asked to indicate what they believe the likely impact of the PPA changes to the minimum funding requirements for the current defined benefit plan will be for two different time dimensions: immediate impact vs. the impact over five to 10 years. In an attempt to determine the likely impact on plans vulnerable to near-term changes, this section analyzes the responses from those sponsors that have not changed their defined benefit plans in the last two years.

Figure 6 shows the distribution of the expected immediate impact as a function of whether the defined benefit sponsors expect to change the plan in the next two years. Of those *planning to change,* 4 percent expect more than a 50 percent immediate increase in minimum pension funding contributions, 11 percent expect between a 26–50 percent increase, 15 percent expect an increase between 11–25 percent, and 30 percent expect an increase of 10 percent or less. Four percent expect the minimum required contributions to decrease and 30 percent do not know the expected impact yet. Another 7 percent believe the current plan will be modified before the PPA contributions take effect.

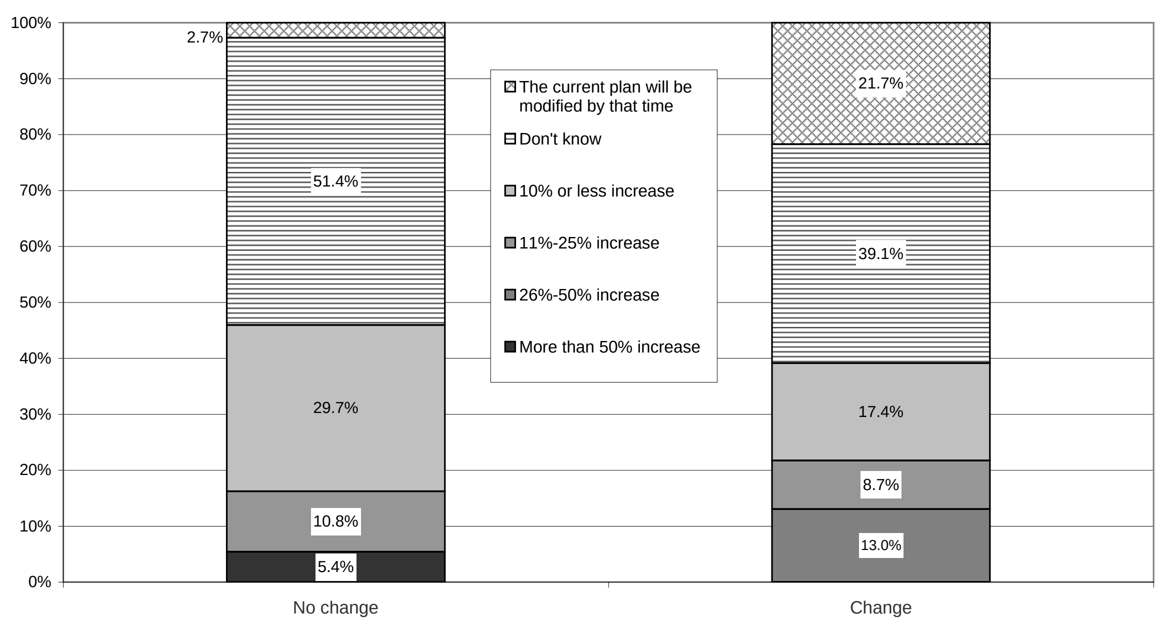
In comparison, for those defined benefit sponsors that are *not planning a change* in the next two years, 6 percent expect more than a 50 percent immediate increase in minimum contributions, 3 percent expect between a 26–50 percent increase, 0 percent expect an increase between 11–25 percent, and 38 percent expect an increase of 10 percent or less. Three percent expect the minimum required contributions to decrease, and 47 percent do not know the expected impact yet. Another 3 percent believe the current plan will be modified before the PPA contributions take effect.

Figure 6
Distribution of Expected *Immediate* Impact of PPA on Minimum Funding Contributions, by Whether Defined Benefit Sponsor Expects to Change Plan in the Next Two Years*



Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.
* Limited to those plans that have not changed their DB plan in the last two years.

Figure 7
Distribution of Expected Impact *Over 5–10 Years* of PPA on Minimum Funding Contributions, by Whether Defined Benefit Sponsor Expects to Change Plan in the Next Two Years*



Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.
* Limited to those plans that have not changed their DB plan in the last two years.

The huge differential in the percentage of those that do not know the expected impact on minimum required contributions suggests that as the uncertainty is resolved, an increasing percentage of these sponsors may decide that some type of fundamental plan change is in order.

The distribution of expected impact of PPA on minimum required contributions over five to 10 years is provided in Figure 7. Of those *planning to change,* 0 percent expect more than a 50 percent immediate increase in minimum contributions, 13 percent expect between a 26–50 percent increase, 9 percent expect an increase between 11–25 percent, 17 percent expect an increase of 10 percent or less, and 39 percent do not know the expected impact yet. Another 22 percent believe the current plan will be modified before the PPA contributions take effect.

In comparison, for those defined benefit sponsors that are *not planning a change* in the next two years, 5 percent expect more than a 50 percent immediate increase in minimum contributions, 0 percent expect between a 26–50 percent increase, 11 percent expect an increase between 11–25 percent, 30 percent expect an increase of 10 percent or less, and 51 percent do not know the expected impact yet. Another 3 percent believe the current plan will be modified before the PPA contributions take effect.

Overall, the shift from the immediate impact to longer-term impact suggests a slight increase in uncertainty but, even more importantly, a huge increase in the percentage of plans that will be modified by that time.

Defined Contribution Plan Changes

Survey respondents were also asked to indicate what changes they have made, or expect to make, to their defined contribution plans. Figure 8 displays the percentage of defined benefit sponsors making specific defined contribution plan changes as a function of various plan and employer characteristics.[44]

From a standpoint of determining the impact of these changes on future retirement income adequacy, it would appear that the change in employer contributions would be the most important. The first two columns of Figure 8 show that 33.3 percent of the defined benefit sponsors expect to make an increase in employer matching contributions, and 20.9 percent expect to make an increase in non-matching employer contributions. As either source of funds would provide the opportunity to at least partially financially indemnify the employee for a modification of the defined benefit plan (e.g., a plan freeze), the third column provides the percentage of defined benefit sponsors which either indicated an increased match and/or an increased non-matched employer contribution. A total of 42.5 percent of the defined benefit sponsors indicated that they would increase employer contributions.

Increases in employer contributions (either the matched or non-matched variety) are more likely to come from publicly traded sponsors (52.7 percent) and those in the consumer discretionary (61.5 percent). There is no clear-cut relationship with the size of the employer, as the rate increases to 70.3 percent for those with 10,000–25,000 employees before it tapers off to 45.0 percent for the largest employers (those with more than 25,000 employees). Whether or not defined benefit pension sponsors cover collectively bargained employees appears to have little impact on whether they are likely to increase employer payments to a defined contribution plan. Employers currently sponsoring final average defined benefit plans are much more likely to increase employer defined contribution payments than those sponsoring career average plans (54.4 percent vs. 37.5 percent), and those that know the likely increase of PPA on their near-term minimum funding requirements are much more likely to increase employer contributions than those that do not know yet (62.5 percent of those expecting more than a 10 percent increase and 55.2 percent of those expecting a 10 percent increase or less versus only 37.7 percent of those that do not know the impact yet).

The most important association tracked for those defined benefit sponsors increasing their employer contributions to a defined contribution plan is whether they recently closed their defined benefit plan to new hires in the last two years (78 percent of these sponsors indicated that they would increase employer contributions to the defined contribution plan) or plan to do so in the next two years (80.9 percent). Similar but slightly smaller percentages were associated with defined benefit sponsors freezing their plans to all members: Of those that had frozen in the last (next) two years, 61.9 percent (76.4 percent) indicated they would increase employer contributions.

Figure 8

Percentage of Defined Benefit (DB) Sponsors Making Specific Defined Contribution (DC) Plan Changes, as a Function of Various Plan and Employer Characteristics

	Increase or Initiate Employer Match	Add or Increase Non-matching Employer Contributions	Additional Employer Match and/or Non-matching Employer Contribution	Add Roth Accounts	Add Participant Investment Advice	Add Managed Accounts
Total	33.3%	20.9%	42.5%	37.6%	30.8%	17.2%
Type of Employer						
Not-for-profit	21.4	7.1	28.5	17.8	25	10.7
Other	16.6	25	33.3	58.3	16.6	8.3
Privately held	25.8	19.3	29	48.3	22.5	12.9
Publicly traded	43.2	24.3	52.7	40.5	41.8	24.3
Industry						
Consumer discretionary	30.7	38.4	61.5	30.7	38.4	23
Financial/banking	47	17.6	47	47	35.2	23.5
Health care	30	15	35	20	25	10
Industrials	30.7	15.3	30.7	46.1	38.4	30.7
Insurance	20	20	40	40	46.6	6.6
Number of Domestic Employees						
Fewer than 5,000	23.8	18.1	32.9	28.4	27.2	19.3
5,000–10,000	37	18.5	44.4	33.3	40.7	0
10,001–24,999	59.2	37	70.3	55.5	33.3	25.9
25,000+	35	15	45	60	30	20
Collectively Bargained						
No	35.9	28.1	49.5	37.8	36.8	16.5
Yes	42.4	15.1	45.4	39.3	21.2	18.1
Type of DB Plan						
Career average	25	25	37.5	25	29.1	16.6
Cash balance	38.8	16.6	44.4	41.6	30.5	19.4
Final pay	39.7	30.8	54.4	38.2	36.7	14.7
Likely Immediate Impact of PPA on Minimum Funding Requirements						
More than 10% increase	43.7	37.5	62.5	37.5	37.5	0
10% or less increase	47.3	18.4	55.2	47.3	26.3	18.4
Don't know	31.1	17.7	37.7	24.4	28.8	24.4
Other	23.3	21.6	33.3	40	35	16.6
Modifications to DB Plan						
Close DB to new hires: previous two years	60.9	43.9	78	34.1	24.3	19.5
Freeze DB plan for all members: previous two years	57.1	23.8	61.9	33.3	28.5	19
Close DB plan to new hires: next two years*	57.1	47.6	80.9	23.8	38.1	18
Freeze DB plan for all members: next two years*	58.8	41.1	76.4	17.6	41.1	11.7

Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.

* Conditional upon not having already performed this action in the last two years.

This finding makes it very clear that any serious attempt to model retirement income adequacy for future cohorts of retirees will need to control for this widespread phenomenon of employers providing new or additional employer contributions to a defined contribution plan in an attempt to at least partially indemnify the employees for the reduction in future benefits accruals they may have expected if the original defined benefit plan were not closed or frozen.

PPA permanently extended a provision first passed in EGTRRA[45] that allows 401(k) or 403(b) plans to add a Roth feature that allows an employee to make after-tax contributions, which, along with earnings, qualify for tax-free distribution if certain conditions are satisfied. Column 4 in Figure 8 shows a total of 37.6 percent of the defined benefit sponsors indicated that they have or expect to add this feature. The likelihood of this change is definitely a function of plan size: sponsors with fewer than 5,000 domestic employees have only a 28.4 percent chance of adding this feature to a defined contribution plan. This percentage increases with plan size until it reaches 60.0 percent for those with 25,000 or more domestic employees. Only 24.4 percent of defined benefit sponsors who have not yet determined the impact of PPA on their minimum funding requirements indicated that they would adopt the Roth feature. Given that this is only two-thirds as high as the overall average, it may suggest that additional sponsors will make the decision to adopt Roth features for their 401(k) or 403(b) plan once they sort out the cash flow consequences to the defined benefit plan.

PPA also creates a new prohibited transaction exemption which will allow plan fiduciaries to be compensated for giving participants investment advice; however, they will be subject to a series of rules specifically designed to limit the possibility of abuse. Previous to this, many employers were legally constrained from providing investment advice to plan participants. Column 5 of Figure 8 indicates that 30.8 percent of the defined benefit sponsors have already made or expect to make a change to their defined contribution plan to add participant investment advice. It would appear to be much more likely for publicly traded employers (41.8 percent) and those in the insurance industry (46.6 percent). Plans covering collectively bargained employees appear to be much less likely to provide investment advice to their defined contribution participants than their non-collectively bargained counterparts (21.2 percent vs. 36.8 percent).

A managed account is a professionally managed account within a defined contribution plan in which an employer-appointed investment manager manages the plan participant's account on a discretionary basis. According to Hewitt Associates (2005), 7.5 percent of large employers in 2005 either currently offered or were planning to introduce a managed account option to their plan participants in the next 12 months. Column 6 in Figure 8 shows that 17.2 percent of all defined benefit sponsors have either added managed accounts to their defined contribution plans by 2007 or plan to do so soon. Among employers with more than 10,000 domestic employees, somewhere between 20.0 percent and 25.9 percent of the respondents indicated their choice of this option.

Automatic Enrollment/Automatic Escalation Features

One of the extremely important plan design decisions a 401(k) plan sponsor must make in the aftermath of PPA is whether to introduce automatic enrollment features. There is extensive literature on the potential benefits of automatic enrollment on participation rates, especially for young employees and those with low incomes (DiCenzo, 2007). However, there is also a recognition that the introduction of these programs has a tendency to anchor participants' contribution rates and asset allocation to the defaults chosen by the sponsor (Choi, et al., 2005 and 2006), and that the overall increase in expected account balances from adopting these plans will be a function of both the employee's relative wage level and the employer's default decisions (Holden and VanDerhei, 2005).

PPA provided a significant incentive for employers that had not already adopted automatic enrollment to reconsider their decisions.[46] Although there have been several surveys of likely adoption rates in the post-PPA environment, it does not appear that any of them have associated this behavior with the sponsor's decision to close or freeze the defined benefit plan. The implications with respect to retirement income adequacy may be extremely significant, given that a shift from defined benefit to defined contribution plans (especially 401(k) plans) will undoubtedly increase the variability of retirement income for future cohorts.[47] In addition to the increased variability resulting from a shift in investment risk from the employer to the employee, defined benefit freezes and closings obviously create a move to a plan type where participation decisions become very relevant to an employee's future retirement income. To the extent that automatic enrollment can increase participation rates, the potential negative impact of these trends on retirement income adequacy may be mitigated, especially among the low-income employees.

Figure 9 suggests that at least among the defined benefit pension sponsors that have closed their plan to new hires in the last two years or are planning to do so in the next two years, a relatively large percentage have already adopted automatic enrollment in their 401(k) plan, and a considerable percentage of those who have not are currently considering it. Of those that have already closed the plan to new hires, 59 percent have already adopted automatic enrollment features in the 401(k) plan as opposed to 42 percent of those that have not. Plan sponsors indicating that they will close the plan to new hires in the next two years have adopted automatic enrollment features 61 percent of the time, in contrast to only 39 percent for those that do not plan to close the plan in the next two years.[48]

The analysis for defined benefit sponsors freezing the plan for all members is not as straightforward. While 57 percent of those that have frozen the plan in the last two years indicated they have already adopted 401(k) automatic enrollment features (Figure 10), compared with 45 percent of those who have not, the phenomenon is reversed for those planning to freeze the plan in the next two years. In that case, only 33 percent of those that plan to freeze their pension have adopted 401(k) automatic enrollment, as opposed to 46 percent of those that do not plan to freeze the plan in the next two years. However, 42 percent of those planning to freeze their pension in the next two years are currently considering 401(k) automatic enrollment features.

Defined Benefit Plan Investments

Given the likely impact of PPA and FASB on defined benefit plan investments described earlier in this *Issue Brief*, one would expect, all else being equal, an increase in fixed income and/or derivatives would be most pronounced for defined benefit sponsors that are publicly traded and/or sponsoring final pay plans. It is also quite likely that those sponsors expecting an increase in minimum required contributions under PPA may have a higher than average propensity to adopt this investment philosophy.

Figure 11 demonstrates that this is indeed what is revealed by the investment expectations of the survey respondents in the next two years. Column one shows that, overall, 14.2 percent of the respondents indicate that they plan to increase allocation to fixed-income investments during the next two years. Publicly traded sponsors have a higher than average percentage (20.2 percent) as do those sponsoring final pay plans (20.5 percent). Plans that expect to have an increase in the minimum required contributions under PPA also have higher than average rates (18.7 percent for those expecting a more than 10 percent increase and 28.9 percent for those expecting an increase of 10 percent or less).

A total of 12.9 percent of the survey respondents indicated that they were planning to increase interest rate hedging via fixed-income investments and/or derivatives in the next two years (column two of Figure 11). Publicly traded sponsors have a higher than average percentage (18.9 percent) as do those sponsoring final pay plans (22.0 percent). Plans that expect to have an increase in the minimum required contributions under PPA also have higher than average rates (25.0 percent of those expecting a more than 10 percent increase and 26.3 percent of those expecting an increase of 10 percent or less).

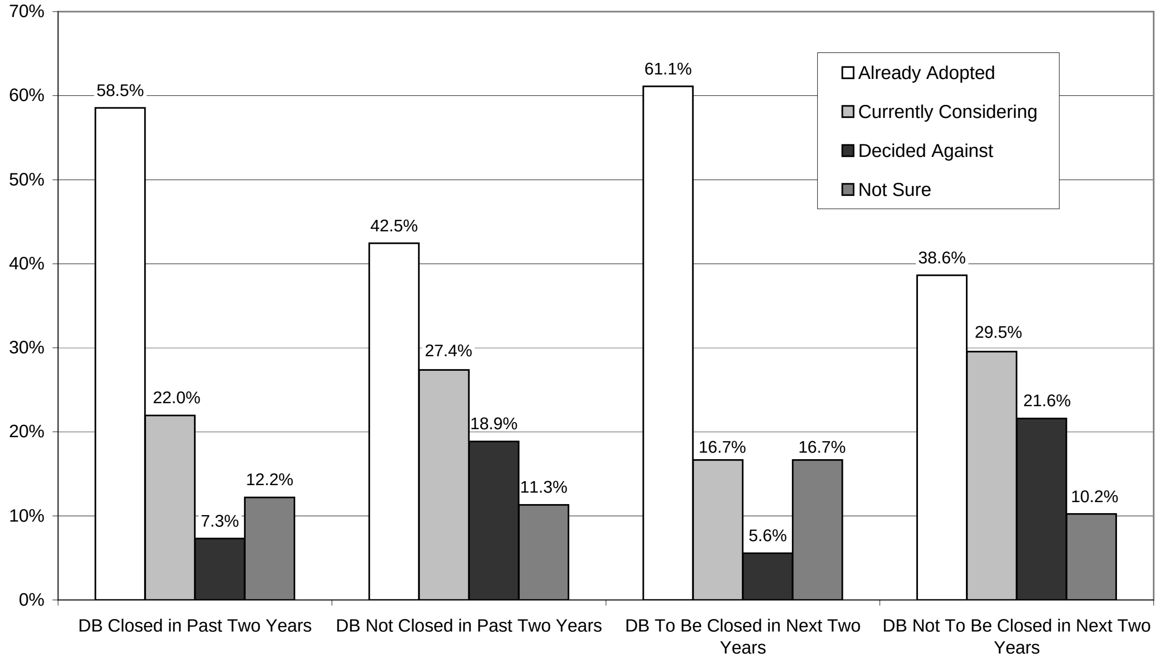
A total of 15.4 percent of the survey respondents indicated that they were planning to increase the duration of the fixed-income portfolio in the next two years (column three of Figure 11). Publicly traded sponsors have a higher than average percentage (17.5 percent) as do those sponsoring final pay plans (23.5 percent). Plans that expect to have an increase in the minimum required contributions under PPA also have higher than average rates (25.0 percent of those expecting a more than 10 percent increase and 28.9 percent of those expecting an increase of 10 percent or less).

Conclusion and Next Steps

As mentioned in the introduction to this *Issue Brief*, the process of projecting which individuals are likely to have adequate retirement income has always been problematic. This has undoubtedly become more difficult in the last two decades, as the private retirement system in the United States has gradually evolved from one that was, for many employees, focused primarily on defined benefit plans to one that is more of a hybrid between defined benefit (pensions) *and* defined contribution (401(k)-type) plans.[49]

Figure 9

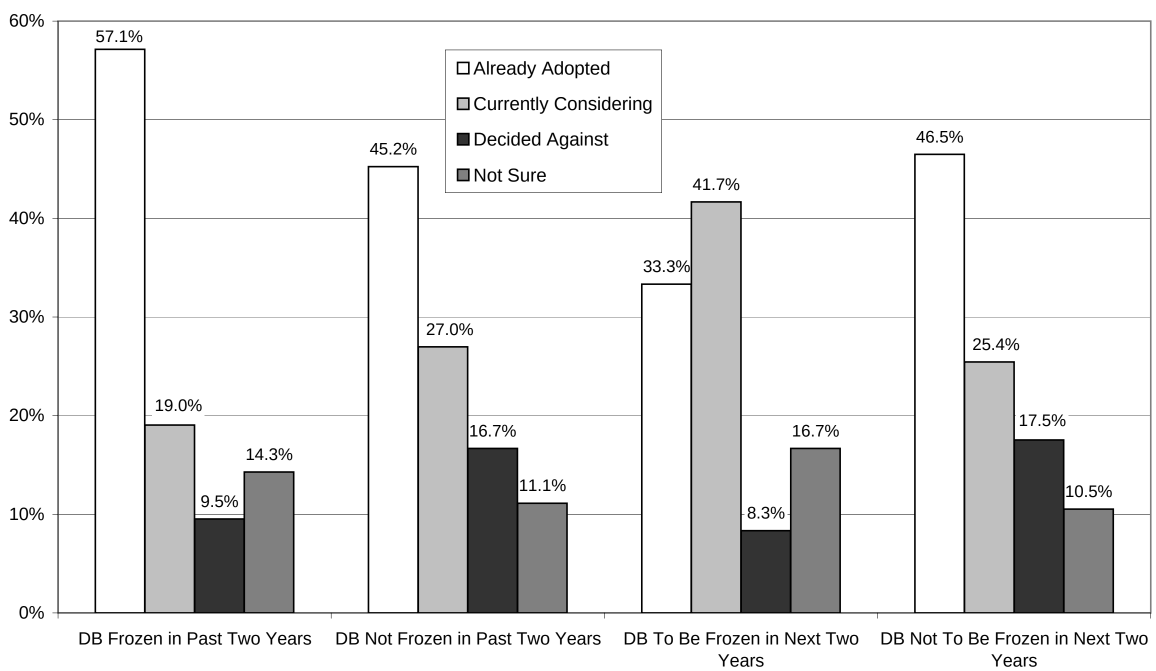
Percentage of 401(k) or 403(b) Sponsors Considering or Having Adopted Automatic Enrollment Features, by Whether the Defined Benefit (DB) Plan is *Closed* to New Hires*



Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.
*Percentage for next two years is conditional upon the plan sponsor not having made a change in the last two years.

Figure 10

Percentage of 401(k) or 403(b) Sponsors Considering or Having Adopted Automatic Enrollment Features, by Whether the Defined Benefit (DB) Plan is *Frozen* for All Members*



Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.
* Percentage for next two years is conditional upon the plan sponsor not having made a change in the last two years.

Figure 11
Percentage of Defined Benefit Sponsors Indicating They Will Make Specific Defined Benefit Plan Investment Changes, as a Function of Various Plan and Employer Characteristics

	Increase Allocation to Fixed-Income Investments in the Next Two Years	Increase Interest Rate Hedging Via Fixed-Income Investments and/or Derivatives in the Next Two Years	Increase Duration of the Fixed-Income Portfolio in the Next Two Years
Total	14.2%	12.9%	15.4%
Type of Employer			
Not-for-profit	3.5	10.7	14.2
Other	16.6	16.6	33.3
Privately held	6.4	0.0	3.2
Publicly traded	20.2	18.9	17.5
Industry			
Consumer discretionary	0.0	0.0	0.0
Financial/banking	5.8	5.8	5.8
Health care	0.0	0.0	10.0
Insurance	20.0	20.0	13.3
Other	18.9	21.6	24.3
Number of Domestic Employees			
Fewer than 5,000	9.0	7.9	13.6
5,000–10,000	18.5	11.1	18.5
10,001–24,999	14.8	22.2	11.1
25,000+	30.0	25.0	25.0
Collectively Bargained			
No	15.5	13.5	18.4
Yes	21.2	21.1	18.1
Type of Defined Benefit plan			
Career average	12.5	8.3	16.6
Cash balance	16.6	8.3	13.8
Final pay	20.5	22.0	23.5
Likely Immediate Impact of PPA on Minimum Funding Requirements			
More than 10% increase	18.7	25.0	25.0
10% or less increase	28.9	26.3	28.9
Don't know	4.4	0.0	2.2
Other	11.6	11.6	13.3

Source: EBRI/Mercer Survey of Retirement Program Changes After PPA and New Accounting Rules, April 2007.

The reason for the increased modeling difficulties stems largely from the introduction of employee choice as a major determinant of the eventual retirement income for a retiree. In a *defined benefit* plan, the employer makes most (if not all) of the decisions, and an employee is either covered or not. Once the likelihood of coverage and the generosity parameters of the plans are modeled, the only major uncertainty is the employee's participation in the labor market, relative wage growth, and job change behavior. *Defined contribution* plans offer several additional modeling challenges, in addition to the need to project future investment income, at least as currently designed. In many defined contribution plans, employees must make the decision to participate, and, if so, how much to contribute and where to invest their own employee contributions and (if offered) often the employer contributions. Job turnover presents another modeling challenge, as the probability of cashing out (as opposed to retaining the amounts in the current employer's plan or rolling them over to the new employer's plans and/or an IRA) must be estimated. Another problem arises at the time of retirement, given the increased probability that employees will need to deal with longevity risk, as opposed to purchasing an immediate annuity or otherwise shifting at least some of this risk to another entity similar to the annuity options inherent in a defined benefit plan.

Estimating retirement income adequacy became even more difficult in recent years as an increasing number of defined benefit sponsors chose to either close their plan to new workers or go the additional step of freezing the accruals to the current employees as well. VanDerhei and Copeland (2004) provided early estimates of how these phenomena would likely affect defined benefit participants if *all* existing defined benefit plans (with certain types of plan designs) were assumed to freeze their plans immediately; however, without some type of modeling with respect to the relative likelihood of this occurrence as a function of sponsor and/or plan characteristics, the impact on future cohorts of retirees could not be estimated.

The pace of these transactions appears to have accelerated in recent years (Munnell et al., 2006), and EBRI estimates were used to demonstrate the extent to which employer contributions to a defined contribution plan would need to be increased to financially indemnify stylized individuals for the reduction in expected retirement income (Walsh, 2006). This analysis was later expanded to simulate the impact on the full gamut of job tenure possibilities (VanDerhei, 2006).

While it is certainly possible to make informed predictions of future closing/freezing behavior based on the recent time series of Form 5500 filings, it would be extremely difficult to accurately extrapolate these results without paying careful attention to the likely impact of PPA on changes in defined benefit coverage for employees each time they change jobs, as well as the potential for accrual freezes for some employees even before they change jobs. Moreover, as has been demonstrated in this *Issue Brief*, the vast majority of defined benefit pension sponsors that have either closed or frozen their plans in the last two years or plan to do so in the next two years will either *increase* the matching or non-matching employer contribution to an existing defined contribution plan, or *establish a new one*. Obviously, the additional retirement wealth generated by these contributions (as well as the additional employee deferrals likely to arise, especially when matching formulae are modified) must be factored into any careful analysis of the retirement income prospects of future retirees.

Finally, any accurate analysis must pay careful attention to the likely structural changes in defined contribution plans by sponsors that modify their defined benefit plans. This *Issue Brief* demonstrates that a much larger percentage of defined benefit sponsors that have either closed or frozen their pension plans in the last two years, or plan to do so in the next two years, will end up with automatic enrollment provisions in their defined contribution (401(k)-type) plans than their counterparts who do *not* adopt these changes to their defined benefit plan pensions. The ability to establish defined benefit-type provisions (such as automatically enrolling employees in the plan and making default contribution and asset allocation decisions for them) in the defined contribution plan has extremely important public policy implications. As shown in Holden and VanDerhei (2005), even with a relatively small default contribution rate (3 percent) and a very conservative asset allocation (money market), the median account balance for 401(k) eligible employees in the lowest income quartile was simulated to increase by 61 percent.

As is typically true in the private retirement universe, plan sponsors' reaction to influences such as PPA and FASB will likely be quite varied. EBRI will use the results published in this *Issue Brief*, in addition to other actuarial information generously made available by Mercer Human Resource Consulting to modify the EBRI/ERF Retirement Security Projection model and publish the likely impact of these changes on overall retirement income adequacy for future retirees in a forthcoming *Issue Brief.*

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Endnotes

[1] See Darlin (2007) and Block (2007) for examples.

[2] See Scholz et al. (2006) for an example.

[3] The Pension Protection Act of 2006 (PL 109-280), signed into law on August 17, 2006, is the most sweeping pension legislation in over 30 years and includes a number of significant tax incentives to enhance and protect retirement savings for millions of Americans. An overview of the law by the Internal Revenue is available online at http://www.irs.gov/retirement/article/0,,id=165131,00.html

[4] The Governmental Accounting Standards Board (GASB), a not-for-profit organization that establishes financial accounting and reporting standards for state and local governments, recently issued Statement No. 50, *Pension Disclosures.* The impact of GASB pronouncements upon the provision of retirement income in the public sector will be dealt with in the forthcoming *Issue Brief* described below.

[5] MHRC, a global provider of a broad range of human resource advice and solutions, is a wholly owned subsidiary of Marsh & McLennan Companies, Inc. Website: http://www.mercer.com/

[6] VanDerhei (2006) simulates the percentage of compensation that would need to be contributed by an employer to financially indemnify an employee for the reduction in expected retirement benefits as a result of a pension freeze.

[7] The EBRI/ERF Retirement Security Projection Model (RSPM) is described in VanDerhei and Copeland (2003).

[8] See Ruschau (2007) for information on how PPA is expected to impact multiemployer plans.

[9] For approximately the first 10 years of the program, the employer merely needed to terminate an underfunded defined benefit plan for the insurance benefit to be effective. The necessity for the sponsor to actually be in bankruptcy was added only after several large underfunded defined benefit plans were terminated in exchange for a portion of the sponsors' net worth (which in many cases was far less than the amount of defined benefit underfunding they were shedding).

[10] The discount rate is the value used to adjust future cash flows to the present by reflecting the "time value of money."

[11] This will be phased in gradually: The target will be 92 percent in 2008, 94 percent in 2009, 96 percent in 2010, before reaching 100 percent in 2011. There is an exception for plans that were already subject to the deficit reduction contribution in 2007: They will have a 100 percent funding target in 2008.

[12] Specific exceptions for at-risk plans are defined below.

[13] When the value of plan assets is at least equal to the value of benefit obligations, there is no funding shortfall and no more shortfall amortization installments are required.

[14] It should be noted for investment purposes that a plan sponsor may make a one-time election to use the full corporate bond yield curve without any averaging, rather than using the three separate segment rates.

[15] The financial health of a plan sponsor would be defined as financially weak for this proposal if the plan sponsor had senior unsecured debt that was rated as not being investment grade by each of the nationally recognized statistical rating organizations that has issued a credit rating for the debt.

[16] This percentage is phased in over four years: 65 percent in 2008, 70 percent in 2009, 75 percent in 2010, and 80 percent in 2011 and thereafter.

[17] Under the law, the full at-risk contribution is not required for the first plan year the plan is at risk. The increase in the contribution is phased in over five years. In the first year a plan is at risk, the minimum contribution is equal to the amount required for a plan that is not at risk, plus 20 percent of the difference between that amount and the amount required by the at-risk calculation.

[18] Credit balances must be separated into two categories: balances carried over from 2007 and balances resulting from contributions in 2008 and later years.

[19] Although annuities are the default form of payment in a defined benefit plan, plan sponsors will often give employees the alternative of taking the actuarial equivalent of the annuity in a single sum known as a lump-sum distribution.

[20] Once a plan is funded above 60 percent, the employer—and the union in a collectively bargained plan—must then decide how to credit past service accruals. This provision does not apply during the first five years of a plan's existence, or if the employer makes an additional contribution prescribed by the statute.

[21] Changes in actuarial assumptions were generally amortized over a 10-year period.

[22] A plan's "funded current liability percentage" is generally the actuarial value of plan assets as a percentage of the plan's current liability. In general, a plan's current liability means all liabilities to employees and their beneficiaries under the plan, determined on a present-value basis.

[23] For more information on the unfunded old liability amounts, see VanDerhei (1994).

[24] This may be mitigated to a significant extent by the additional amounts required for at-risk plans, however.

[25] Stockton (2006) performs a Monte-Carlo simulation on a hypothetical plan to test the impact of many of the new PPA rules and finds that funding ratios increase on average and volatility (as measured by standard deviation of the funding ratio) increases. However, Warshawsky (2007) performs a similar type of simulation for a cash balance plan using proprietary asset/liability software with precise representations of the new and old laws, including transition rules, and finds a reduction in contribution volatility.

[26] FASB is the private-sector entity that sets professional standards for financial accounting and reporting. www.fasb.org

[27] FASB Statement No. 36, *Disclosure of Pension Information,* had already established rules governing the disclosure of plan assets and liabilities on the sponsoring employer's financial statement in the early 1980s. However, this was seen as only a stopgap measure until the more contentious issues raised in response to pension expense determination could be resolved.

[28] While the return was titled "actual" for disclosure purposes, FASB 87 states that the difference between the actual and expected return on plan assets must be accounted for as a part of the gain or loss component of pension expense. The net result of this treatment is that the expected return on plan assets is used to calculate pension cost for the period.

[29] This is conceptually similar to the amortization of supplemental liability required for minimum funding standards under prior law (other than new liabilities for underfunded plans under OBRA); however, the allocation procedure does not result in a level dollar amount assigned to each year in the amortization period.

[30] It is also possible for a plan amendment to decrease the projected benefit obligation. In that case, the reduction must be used to reduce any existing unrecognized prior service cost, and the excess, if any, must be amortized on the same basis as the cost of benefit increases.

[31] The corridor is defined as 10 percent of the greater of the projected benefit obligation or the market-related value of plan assets. The annual amortization will be equal to the amount of unrecognized gain or loss in excess of the corridor divided by the average remaining service period of active employees expected to receive benefits under the plan.

[32] Alternatively, this would be recorded in changes in unrestricted net assets of a not-for-profit organization.

[33] News Release, Nov. 10, 2005, *FASB Adds Comprehensive Project to Reconsider Accounting for Pensions and Other Postretirement Benefits*, http://www.FASB.org/news/nr111005.shtml

[34] General Motors Corp. stockholders' equity was reported to have decreased $16.9 billion after FAS 158 was adopted. For the 297 companies in the S&P 500 stock index that have defined benefit plans, the aggregate change in shareholders' equity was $142.5 billion—$136.8 billion in reductions and $5.7 billion in gains (Burr, 2007).

[35] One possible exception to this arises from the potential problems with debt covenants. For more on how this might influence pension accounting changes, see VanDerhei and Joanette (March 1988).

[36] See Goebel and Kivarkis (2007) and Bowen and Perry (2007) for examples.

[37] Other possible changes would include reduction or outright curtailment of the asset smoothing periods as well as modification of the corridor in which cumulative gains/losses are not recognized and the amortization periods for those amounts falling outside the corridor.

[38] The Pyramis survey was conducted in October 2006 and was based on a representative sample of 214 of the largest defined benefit plans in the United States. The Towers Perrin survey was conducted in August 2006 of corporate

financial executives working for large organizations sponsoring one or more defined benefit pension plans in the United States.

[39] Respondents were asked to check all changes that applied.

[40] It is important to note that it was not possible to bifurcate these into pre- and post-PPA cash balance conversions.

[41] The recent improvement in the asset return/discount rate situation has resulted in an appreciable increase in funding ratios for many underfunded defined benefit plans. Given that defined benefit plans are constrained in their ability to undergo voluntary plan terminations until they are adequately funded, expectations of future improvements increase the perceived ability of plan sponsors to terminate their plans.

[42] This is different from the 19.0 percent in figure 2 as the latter was defined as a conditional percentage based on any defined benefit plan changes.

[43] See VanDerhei (March 1989) for more detail.

[44] Respondents were asked to check all options that apply. In addition to the options included in Figure 8, respondents were asked if they planned to reduce or eliminate the employer match; reduce or eliminate non-matching employer contributions; adopt nondiscrimination safe harbors; or terminate or freeze the defined contribution plan.

[45] The Economic Growth and Tax Relief Reconciliation Act of 2001 (P.L. 107-16).

[46] PPA preempts state laws that might affect plans adopting automatic enrollment provisions and provides additional nondiscrimination safe harbor protections for them.

[47] See Samick and Skinner (2004) for an example.

[48] Sponsors that already closed the plan in the last two years are excluded from the analysis of those in the "next two years" group.

[49] Although the explosion of 401(k) plans following the release of the proposed regulations in November 1981 is often cited as the catalyst of the defined contribution plan expansion, other types of defined contribution plans were already quite prevalent and indeed defined contribution plans already accounted for 69 percent of the total number of private defined retirement plans in 1981 (albeit many of these were small plans and in terms of active participants, defined contribution plans only accounted for 41 percent of the total). See Olsen and VanDerhei (1997) for more detail.

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2121 K Street, NW, Suite 600 Washington, DC 20037-1896
Phone: (202) 659-0670 / Fax: (202) 775-6312 / E-Mail: info@ebri.org

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