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LONGEVITY RISK AND INSURANCE SOLUTIONS

for U.S. corporate pension plans

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Introduction

Rapidly changing demographics and increases in life expectancy pose a serious challenge to the health of corporations, potentially impacting their ability to compete. For American corporations, the impact of aging can be seen most clearly through the lens of their employer-sponsored retirement plans.

In this report we focus on the U.S. corporate pensions market, where there is broad consensus that the risk position of corporate pension plans is not sustainable. Yet, despite this recognition, U.S. plan sponsors lack awareness of the impact of improved life expectancy on their pension liabilities, and focus almost exclusively on investment risk. It is our position that a true understanding of longevity risk is the needed catalyst for U.S. corporate pension plans to more actively adopt de-risking strategies.

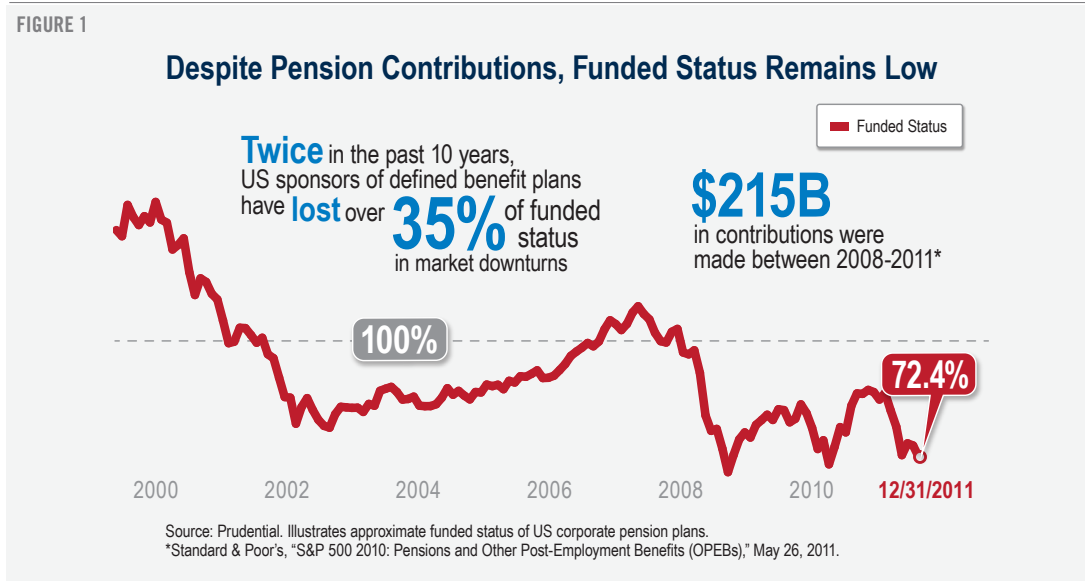
Defined benefit pension plans have grown to enormous proportions, with some dwarfing the size of their sponsoring organizations. Unprecedented pension deficits are front-and-center and the cash required to close them is straining free cash flow. Having endured significant market downturns over the past several years, sponsors are now keenly aware of how volatile that cash call can be. Transferring pension risk through an insurance solution offers a sponsor the opportunity to remove these risks from their balance sheet and focus on their core business.

The challenges are not limited to corporations that sponsor defined benefit plans. As members of the baby boom generation approach retirement, their ability to retire with security is also becoming the focus of corporations that sponsor defined contribution plans as the main source of retirement benefits. When uncertainty about the ability to make account balances last throughout retirement causes these older employees to postpone retiring, the normal course of promotion and hiring that keeps a corporate culture vibrant and motivated is disrupted. Lifetime income solutions can provide needed security to this generation of workers and support workforce management strategies.

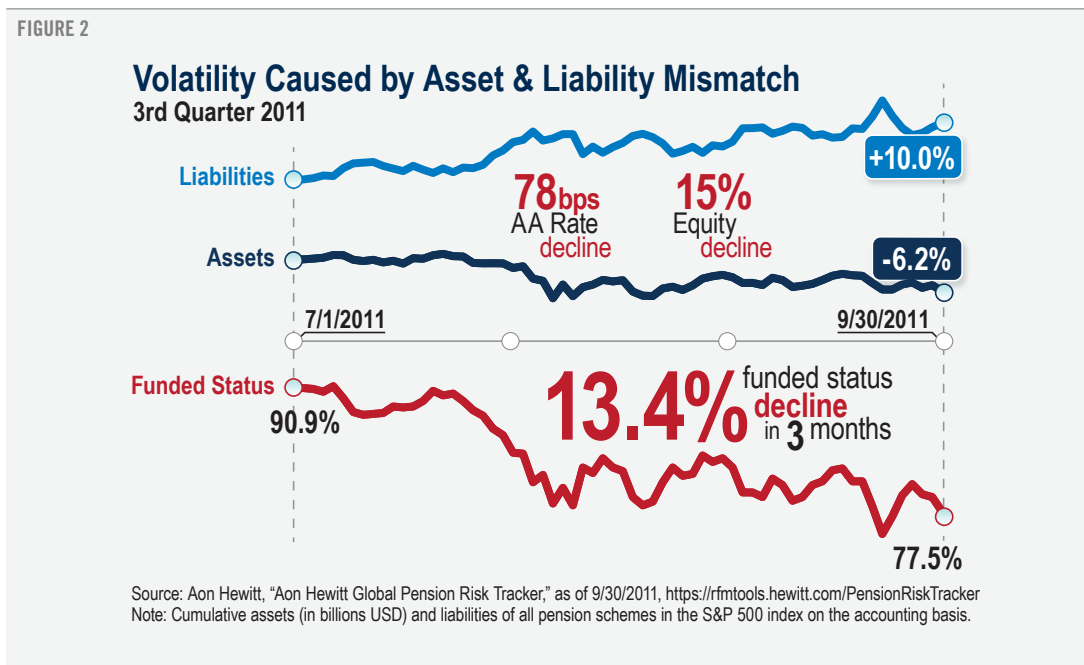
Employers face unprecedented defined benefit pension liabilities and volatility

Pension plan liabilities have increased dramatically over the past few decades, due to both an aging workforce and increased longevity of retirees. The recent market crisis diverted employers from these risks as they struggled to address the challenges to their core business. Now the focus is squarely on pension plans, as many corporations have pension liabilities that exceed 25% of their market capitalization, with some businesses owing more than their net worth (CNBC, 2012). The investment community is keenly focused on pension plan financials as a major driver of free cash flow and earnings.

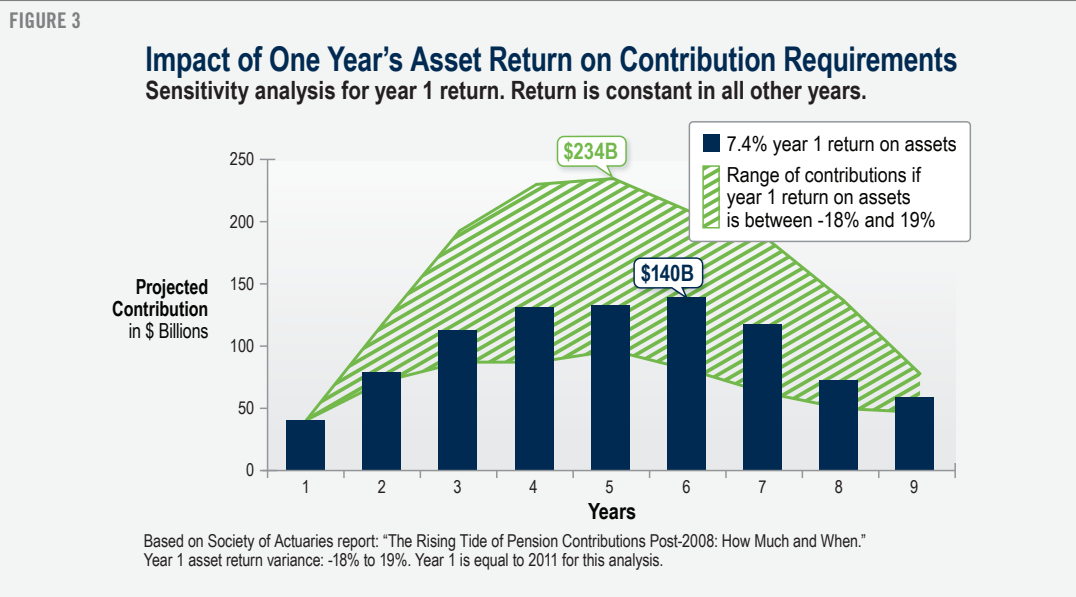
As of year-end 2011, the average ratio of plan assets to liabilities for the 100 largest U.S. pension plans stood at 73%, meaning that U.S. sponsors will face onerous funding requirements over the next several years as they fund a deficit of approximately \$0.5 trillion (Milliman, 2011). Even more troublesome to employers than the current poor-funded status is the volatility of that funded status. A recent poll of plan sponsors indicates that their highest priority for 2012 is “controlling funded status volatility” (Mercer, 2011). The graph below shows that despite hundreds of billions in pension contributions, the funded status of most plans has not significantly improved since the depths of the recent economic crisis. What’s more, twice in the last 10 years plan sponsors have lost over 35% of their funded status. It is imperative for plan sponsors to find relief from this volatility.



Pension liabilities, once calculated under long-term investment return assumptions, are now calculated at discount rates based on high-quality corporate debt, while the majority of pension fund assets are still invested in equities and other risk assets. The result is a poor correlation of asset and liability returns. An example of this divergence can be seen in the third quarter of 2011, when discount rates dropped 78 basis points, increasing liabilities by 10%. Simultaneously, investments in the average pension fund lost more than 6%, due in large part to a 15% drop in equities. The result was a 13.4% drop in funded status in just one quarter (Aon Hewitt, 2011). To a plan sponsor with funding requirements and a pension earnings charge that is based on a snapshot of funded status on one day each year, this volatility is untenable.

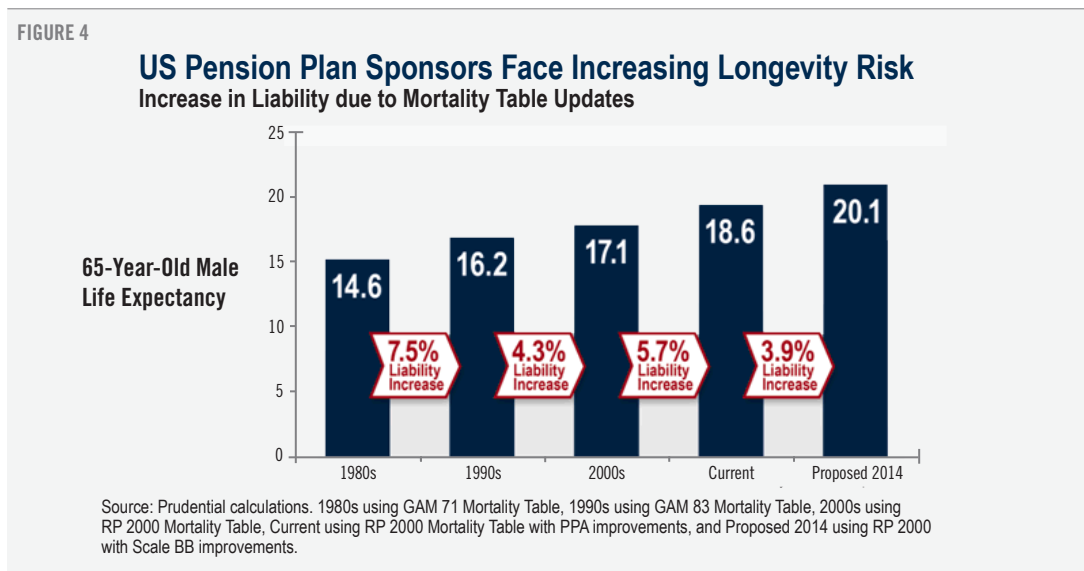


Funding rules under the Pension Protection Act (PPA) of 2006 resulted in a more direct correlation between pension plan funded status and cash flow requirements. The combination of the current poor funded status of most plans and the new PPA funding rules will dramatically increase funding requirements of corporate U.S. pension plans over the next several years. In stark contrast to the 10 years ending in 2009 when minimum contribution requirements fluctuated between \$9 billion and \$22 billion, projections for the period between 2010 and 2019 average \$90 billion per year, with a peak amount of \$140 billion needed in 2016 (Society of Actuaries, 2011a). While these amounts are staggering, consider how dramatically the picture changes if plans experience one year of poor asset returns. A scenario in which the first year asset return is assumed to be -18% increases the peak year contribution to \$234 billion, a 67% increase over the baseline scenario (Society of Actuaries, 2011a).



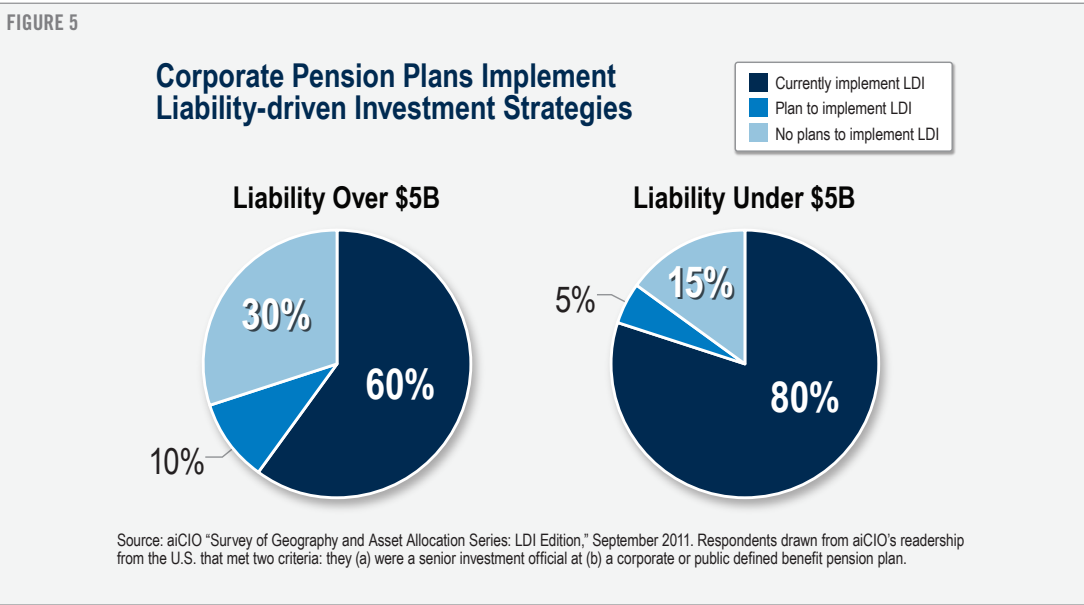
Plan sponsors rethinking risk

With corporate cash and earnings at risk, many plan sponsors have chosen to close their plans to new entrants or even freeze benefit accruals to curtail the growth of plan liabilities. According to a recent Mercer study, more than two-thirds of U.S. corporations participating in the survey have either closed or frozen their defined benefit plans (Mercer, 2011). However, while freezing or closing a plan signals an employer's intent to shed pension risk, this has only a minimal impact on funded status and the related cash flow and earnings volatility in the short term. Plan sponsors need effective longer-term solutions. Corporations sponsoring defined benefit pension plans assume the real risk of participants living longer than anticipated by valuation mortality tables. For those with large plans, it could be said that these employers are running a substantial life insurance operation alongside their stated business. Population data shows that the retired lifetime—that is, the period from retirement to death—for the average U.S. male has increased 27%, or four years, in the past three decades.¹ As shown below in Figure 4, pension valuation tables have typically lagged actual experience, resulting in a significant increase in pension liability in every recent decade as these tables were updated. While most plan sponsors have become attuned to the investment risk that is inherent in their pension plans, longevity risk is a significant yet often ignored risk which cannot be addressed through investment strategy alone. It is not a risk most plan sponsors would choose to hold but one that can be very efficiently managed through insurance products.



¹Prudential Analysis based on published mortality tables, GAM 71, GAM 83, and RP 2000.

Asset management strategies such as liability-driven investing (LDI) techniques, which seek to match the cash flow needs of the pension plan with those of the pension portfolio, can offer plan sponsors meaningful relief from volatility. As the chart below indicates, the majority of corporate plan sponsors say they have adopted an LDI approach for at least a portion of their plan. However, the recent funded status volatility described above indicates that most still have large allocations to risky assets. It is evident that, in the face of substantial underfunding, many sponsors are still hoping to close the gap between assets and liabilities with returns from riskier assets. However, along with this aspiration comes significant volatility, which can result in a level of cash requirement that is unacceptable to shareholders.



Insurance solutions for the pension market

Buy-outs and buy-ins

The insurance industry is well-suited to offer solutions to defined benefit plan sponsors who want to eliminate longevity and/or investment risk. Multi-line insurers have broadly diversified risks reflecting diverse sources of business risks and earnings across products, markets and geographies. Managing the risk of longevity through retirement annuities is a desirable complement to mortality risk, providing a valuable source of diversification. Additionally, the insurance industry has a long history of managing assets on the basis of matching liabilities and is therefore well-equipped to manage pension risk (Haefeli and Liedtke, 2012).

A pension buy-out is a transaction which has been used for decades to transfer liabilities and associated assets for a specified set of pension participants to an insurance company under a group annuity contract. It is designed to shrink the size of the pension plan on the corporation's balance sheet and to relieve the sponsor permanently of the risks associated with the settled participants. A buy-out is often seen in plan termination scenarios, in which annuities are purchased for all participants. For plans that are less than 100% funded, a buy-out can also be used for certain groups of participants, such as retirees. It is the only solution for plan sponsors who want to completely relieve their balance sheet from some or all of their pension burden.

Unless the plan is fully funded, a buy-out will result in a deterioration of funded status, because the plan must pay more to effect the transaction than is held on the company's balance sheet as a liability. This has been a particular concern for plan sponsors under PPA regulations due to the administrative and funding requirements associated with falling below certain funded percentage levels. Plan sponsors who have the cash available may contribute additional funds in order to maintain funded status. A transaction for only a portion of the plan would be another way to mitigate the funded status impact. The retiree population, which is already in receipt of monthly pension payments, typically is the population identified for a partial transaction such as this. Plan sponsors who want to minimize the transaction further, or who want to dollar-cost-average the transaction in various interest rate environments, may consider a series of transactions over a period of several years.

A buy-out, unless it is de minimis in size, will also trigger settlement accounting under Accounting Standards Codification 715, which requires the immediate recognition in earnings of a proportional share of Unrecognized Net Losses. As the current Unrecognized Net Loss for the average plan sponsor in the Dow 30 is approximately 38% of liability, this is a significant factor for sponsors concerned about the earnings impact of a buy-out. However, many pension-heavy plan sponsors are less concerned about this particular event, as they believe that the investment community will reward them for completing the transaction and that recognition will outweigh the one-time earnings hit.

FIGURE 6

Insurance Solution Comparison		
Buy-in		Buy-out
Remain in Plan	Assets & Liabilities	Transferred to Insurer
De-risk Plan	Sponsor Goal	Decrease Plan Size or Exit
No	Settlement Accounting	Yes
No Impact	Impact on Funded Status	Declines
None	Contribution Impact	Accelerates, If Underfunded

Although popular in the U.K. for some time, buy-in transactions are new to the U.S. market, with Prudential completing the first U.S. buy-in transaction in May 2011. The transaction is similar to the buy-out, except the liability and associated assets for the transaction group remain in the plan. A buy-in is designed to provide the same risk protection offered by a buy-out without deteriorating funded status or triggering settlement accounting. The buy-in is revocable and provides for a transfer to a buy-out at any time. In short, it combines a near perfect liability-driven investment strategy with longevity protection.

Longevity insurance: an emerging solution

For plan sponsors who want to shed longevity risk without a transfer of investment risk to an insurance company, longevity insurance is an option. This solution has emerged in the U.K. where pension plans offer a Cost of Living Adjustment (COLA) that magnifies the impact of improved longevity. As such, longevity insurance has been embraced by several large plan sponsors in the U.K. The transaction exchanges a series of actual benefit payments for a series of fixed benefit payments. This longevity protection is typically used alongside a LDI asset strategy to offer a plan sponsor additional risk mitigation. Although longevity risk is less apparent in the U.S., the risk is real. Longevity insurance will be an attractive alternative for risk-conscious plan sponsors who realize that despite having effective investment strategies, they have no solution for longevity risk.

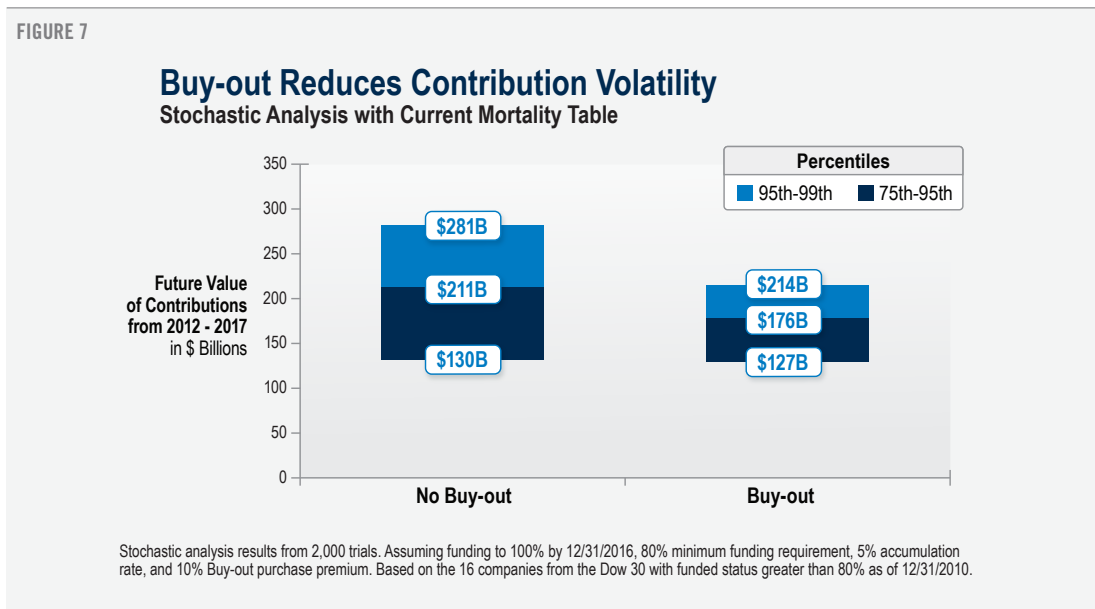
Buy-outs and buy-ins: diminishing tail risks—illustrative scenario

To demonstrate the benefits of buy-outs and buy-ins and their impact on de-risking, we consider a subset of the plans sponsored by corporations that form the Dow 30. Twenty-five of these corporations sponsor defined benefit plans, for a total of \$0.5 trillion in assets, or approximately 25% of the U.S. corporate pension market. These plans mirror the larger U.S. market in several ways: on average their funded status is below 80% and retirees account for about half of the liabilities.

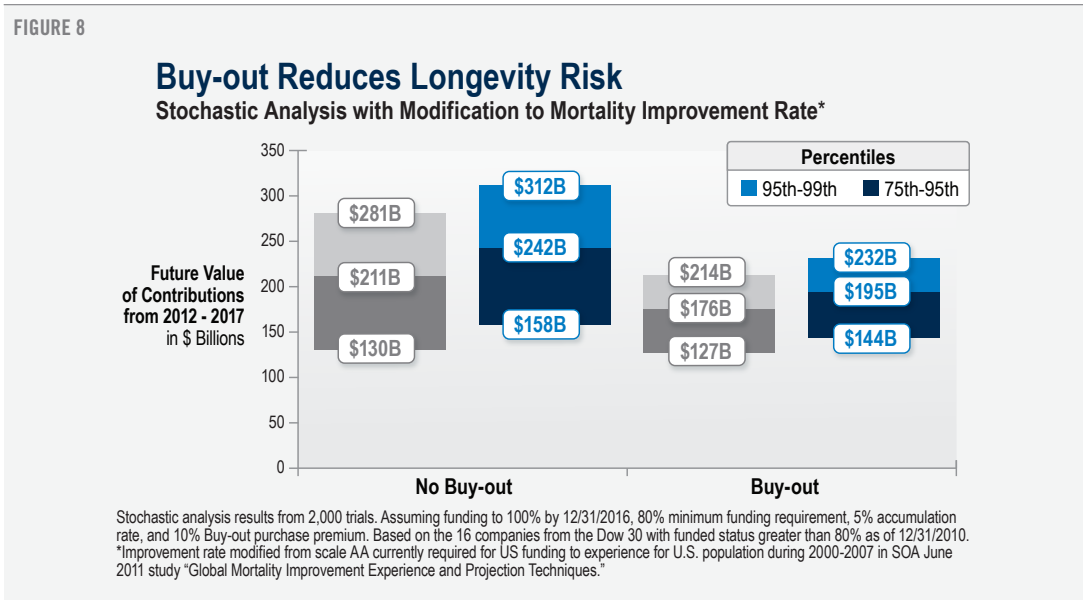
We modeled the assets and liabilities for each of the 16 plans in the Dow 30 that are at least 80% funded in order to provide an analysis that best relates to the average corporate plan sponsor considering a risk transfer solution. We have assumed that the sponsor will contribute enough to reach 100% funded status at the end of five years. We used a stochastic analysis with 2,000 trials to consider the impact that a pension risk transfer for the retired population would have on plan-funded status and required cash flow.

Impact of a pension buy-out

Most sponsors considering risk transfer are primarily interested in mitigating tail risk, or the probability of highly negative results. In this analysis, that would likely be those scenarios with the very lowest investment returns and/or lowest corporate bond rates since these together result in the highest cash contribution requirements. The graph below shows the impact that a buy-out for the retired population would have on funding requirements for the 16 companies over the next five years, with a focus on the results for the 25% of scenarios which produce the highest contribution requirements. Those 25% of trials are illustrated below, with the lighter blue band representing the range associated with the worst 5% of results, and the darker blue representing the next 20% of the highest contribution outcomes. The results show that, for the 5% of the trials that result in the highest contribution requirements, contributions would be reduced by between \$35 billion and \$67 billion. For the next 20% of trials, a buy-out would reduce the present value of contributions by \$3 billion to \$35 billion. Already facing sharply increased funding requirements, plan sponsors are rightly concerned about the possibility of the enormous contributions associated with tail events, and this concern is what leads them to consider insurance solutions.



The analysis above does not incorporate any improvements in life expectancy beyond what is anticipated in currently prescribed mortality tables. If these tables were updated to reflect a continuation of the longevity improvement indicated by the Society of Actuaries (2011b) study, the need for additional protection becomes even more apparent. Figure 8 compares the results in Figure 7, shaded in gray, with those that include these improvements. Under this new scenario, the contribution requirements over the five-year period associated with the 5% of trials with the worst results is reduced between \$47 billion and \$80 billion, with a reduction of \$14 billion to \$47 billion for the next 20% of trials. For sponsors who have been ignoring longevity risk, it is time to recognize the magnitude of this risk they bear and to consider whether it is a risk they are rewarded for holding or whether it is a risk that should be transferred to an insurer.

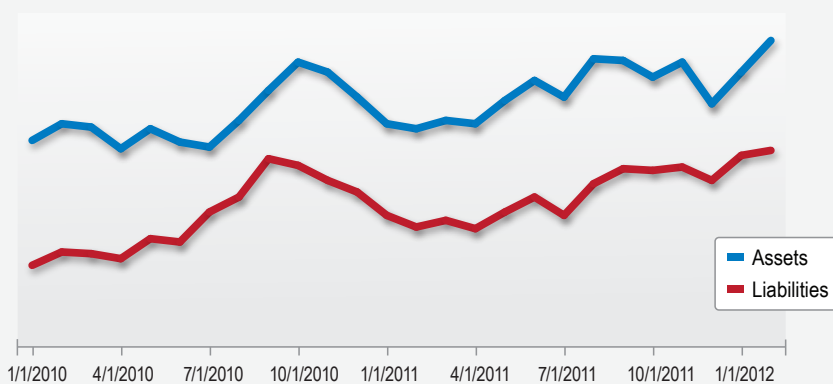


Impact of a pension buy-in

Plan sponsors considering a buy-in transaction are similarly interested in reducing tail risk. However, because the assets and liabilities remain in the plan, they are also interested in making sure the funded status at the time of the buy-in transaction is protected over time. To demonstrate this benefit of the buy-in, we have tracked the funded status of a hypothetical buy-in, transacted on Jan. 1, 2010. As of the transaction date, the covered population was 110% funded; that is, the assets allocated to the buy-in were 110% of GAAP liability. We have tracked the market value of the buy-in asset and accounting liabilities for two years. As Figure 9 indicates, in spite of market turbulence during 2010 and 2011, there is only a slight variation in funded status for the transacted group. For plan sponsors looking for nearly perfect protection from funded status volatility, the buy-in is the solution.

FIGURE 9

Buy-in Assets Highly Correlated to Liability Preserves Funded Status for Transacted Group



Assets determined using PBGC fair value methodology. Liabilities determined using Citigroup pension liability index.

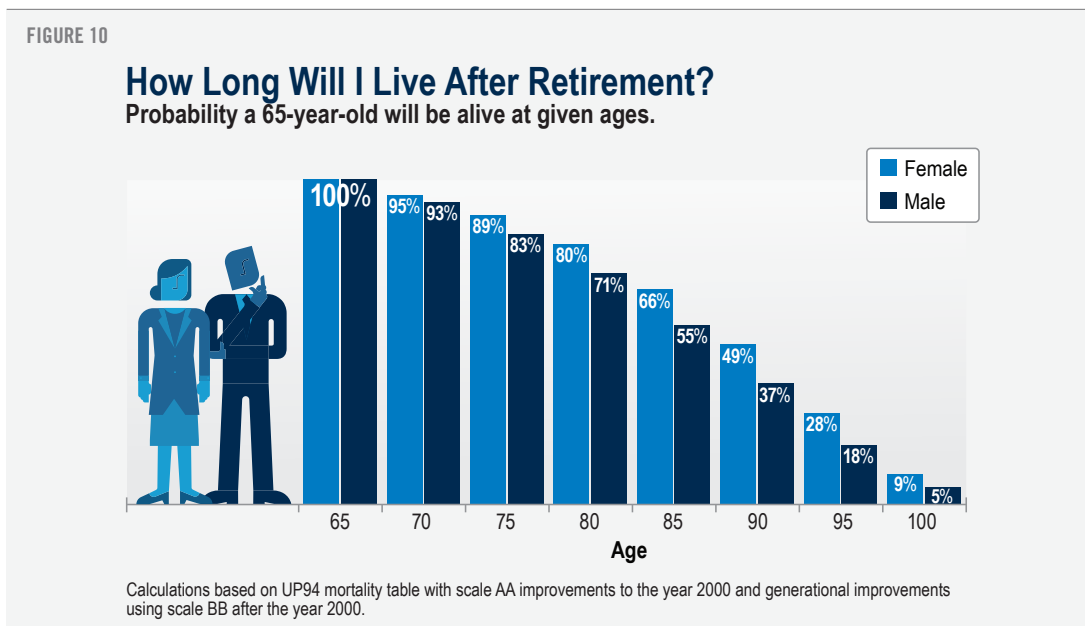
Defined benefit regulatory reform

The current regulatory environment in the U.S. does not encourage plan sponsors to de-risk their defined benefit pension plans with insurance products. Regulators must reevaluate established regulations and systems to help plan sponsors meet their challenges. Consider the following:

- For plan sponsors seeking to de-risk their plan through a buy-in, Department of Labor regulations present a roadblock because they are designed to ensure that the sponsor selects an annuity provider among the safest available at the time of a buy-out transaction. Because of these rules, buy-in transactions must have a revocability provision, so that the plan sponsor has recourse if the insurer chosen for the buy-in is no longer considered a safest available provider at the time of conversion to buy-out. Allowing plan sponsors to perform the required due diligence at the time of the buy-in would provide both transaction certainty and more favorable pricing.
- As regulations stand now, full flat-rate Pension Benefit Guaranty Corporation (PBGC) premiums must be paid on behalf of participants who are part of a buy-in, even though the risk for that cohort has been substantially eliminated. A reduction in this premium would incent plan sponsors to de-risk without posing any additional risk burden on the PBGC.

Shifting investment and longevity risks to employees

Many plan sponsors have shifted the focus of their retirement program from defined benefit to defined contribution plans. This shift transfers both investment and longevity risks from employer to employee. Individuals under defined contribution plans face the risk of outliving their retirement savings if they fail to accumulate the necessary funds in their plans or if they live beyond their life expectancy. While significant progress has been made with respect to offering a broad range of investment options to enable diversification of investment risk, there has been relatively little focus on longevity risk or the need for lifetime income protection.



Facing this risk, coupled with the recent financial crisis, many employees have elected to postpone their retirement. A 2012 study conducted by the Employee Benefits Research Institute (EBRI) found that the age at which workers expect to retire continues a slow upward trend. In particular, the percentage of workers who expect to retire after age 65 has increased, from 11% in 1991, to 17% in 1997, 18% in 2002, 24% in 2007, and 37% in 2012 (EBRI, 2011). The effects of delayed retirement extend beyond the individuals to employers. Many workers choose to work beyond 65, and their maturity and experience can be a positive factor for the workplace. However, it can become problematic for an employer if a large number of retirement-age employees remain on the job because they simply cannot afford to retire. There is a tipping point where employers may be concerned about higher medical costs, decreased opportunity for younger workers or limited availability to acquire new talent. It is in the interest of employers to provide risk-mitigating tools that help those ready to retire to do so with greater security.

Guaranteed income: an insured solution

Lifetime income products are solutions that provide a certainty of retirement income which can help employees retire with confidence. These products help participants accumulate assets and convert those assets into guaranteed income at retirement. Additionally these products are cost-effective as they are designed to pool mortality risk through insurance wrappers, thereby allowing providers to price the products at institutional rates as opposed to higher individual rates. Finally, unlike traditional annuities, newer lifetime income products typically provide a death benefit, flexibility and control—all of which are attractive features to participants who have spent decades accumulating their retirement wealth.

Defined contribution regulatory reform

To encourage employers to offer lifetime products to their employees, a fiduciary safe harbor regulation for employers is recommended. This would allow employers to offer a lifetime income option that satisfies the necessary requirements without fiduciary concern.

Regulations allowing plan sponsors to use lifetime income products as the qualified default investment option for their plans (the automatic investment choice for those who do not elect otherwise), would also encourage greater product adoption.

Lastly, providing a tax advantage to employees who elect a minimum percentage of their account balance to be paid as a lifetime benefit would spur an increase in election rates for this product feature.

Longevity, aging and the pension market

The aging of the U.S. population requires new tools to manage retirement plans. The size and volatility of defined benefit pension obligations have become visible and unwieldy for a number of reasons; chief among these is the impact of longevity risk. Plan sponsors must de-risk in order to preserve their corporation's ability to compete and prosper.

Momentum is building in the U.S. for insurance solutions. A CFO Magazine survey conducted in 2011 found that among the financial executives surveyed, 45% were considering defined benefit risk transfer or have initiated discussions regarding defined benefit risk transfer solutions with their board of directors (CFO Publishing LLC (c), 2012).

Defined contribution plans have now become the dominant retirement vehicle for most U.S. companies, shifting the investment and longevity risks to employees. Employers need to take steps to ensure that these plans provide the retirement security that workers need to retire with confidence.

Insurance solutions, incorporating the vast investment and life contingency capabilities of the insurance industry, are ideally suited to help employers meet these challenges. Having the necessary experience in managing longevity and investment risk, along with a regulatory framework that requires maintenance of adequate capital reserves to meet long-term obligations, insurance companies are uniquely suited to provide pension de-risking solutions. Buy-outs and buy-ins for defined benefit plans and lifetime income products for defined contribution plans offer the certainty of outcomes that the market needs. The industry should continue to work with regulators to promote these solutions because they offer the promise of retirement security to American workers.



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