

# **The Evolution of Retirement Risk Management**

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## **The Evolution of Retirement Risk Management**

### **Abstract**

Leading academics, public pension sponsors, and their advisors met recently to examine ways to reformulate and restructure retirement risk management at the 2009 Wharton Impact Conference sponsored by the Pension Research Council and the Boettner Center for Pensions and Retirement Research. Here we summarize the proceedings from this event, co-organized by Olivia S. Mitchell and Robert Clark.

## **The Evolution of Retirement Risk Management**

Robert L. Clark and Olivia S. Mitchell

Retirement risk management requires a major overhaul. Recent economic events, including the massive upheaval in global financial markets, have altered the landscape in which pension and endowment funds operate. Plummeting values of retirement assets, combined with employers' and employees' inability to make pension contributions, have contributed to a sharp fall in retirement funding. In many countries, government social security systems are also facing insolvency. These factors, in tandem with an aging population and rising longevity, are clouding the future of retirement in American and around the world.

This volume explores how workers and firms might reassess the risk associated with retirement saving and respond creatively to the new risks and realities. This effort is divided into three areas. First is the key role for financial knowledge, implying a need for greater financial education programs and ways to provide such instruction. Second, employers as plan sponsors and workers must reconsider the design of pension plans to help them better address the new realities. Third, novel financial products will be required, to help retirement plans innovate in the financing arena. The authors of the chapters that follow, experts in their fields, take up all these important aspects of retirement planning, providing new research and policy recommendations, and showing how retirement plans can be reoriented to better meet the retirement needs of workers and firms. In this introductory chapter, we offer a brief orientation and overview of key findings.

## **Revisiting Retirement Saving and Dissaving**

Many experts have noted the shift from defined benefit (DB) retirement plans to defined contribution (DC) plans. This, according to Brett Hammond and David Richardson, requires a new way to conceptualize retirement saving adequacy. In traditional defined benefit pensions, participants are able to calculate future benefits as a percent of salary using the plan formulas; these formulas usually depend on a generosity parameter (for instance 1.5 percent) times years of service times final average salary. Thus an employee with 30 years of service would have a pension replacement rate of 45 percent. The employee must then decide whether a 45 percent replacement rate from the pension plus Social Security benefits would provide the desired retirement income. By contrast, participants in DC plans face a more complex problem, since they may know their asset accruals but not know how to convert these to benefit payouts. To help solve this problem, the authors devise a new measure they call the “Stochastic Asset-Salary Ratio” (ASR), which accounts for future salary growth, rates of return, the discount rate, the number of years expected in retirement, and estate planning needs. The researchers indicate that the most important inputs are contribution rates and the number of years contributed, notwithstanding popular emphasis on asset allocation, fund choice, and consultants.

Using information from TIAA-CREF data files on 3.5 million people, Hammond and Richardson measure how well funded participants are by comparing the value of assets accumulated against likely future spending patterns in retirement. Their analysis indicates that, on average, the participants were more than adequately funded for retirement. The authors conclude that achieving sufficient retirement saving requires early and continuous contributions to retirement accounts, relatively high contribution rates, tilting allocations towards greater use

of equities, and using catch-up contributions to increase account balances. Thus pension plans that encourage early participation and provide strong incentives for increased contributions raise the likelihood that participants will be secure in retirement.

Turning to the question of financial literacy, there is growing evidence that many employees, even older workers, lack basic information about their retirement plans and financial mathematics. The research by Robert Clark, Melinda Sandler Morrill, and Steven Allen examines the effectiveness of employer-provided financial education and pre-retirement planning programs. As individuals begin to make the transition from full-time work into retirement, they must confront several key decisions that will affect their well-being in retirement. Without appropriate knowledge and information, many will make incorrect choices that will adversely affect their retirement. Important retirement-related questions include when to retire from one's career job, whether to take a lump sum distribution from a defined benefit plan, whether to annuitize a 401(k) account, and when to claim Social Security payments. Many of these decisions are irreversible and will have a profound impact on financial well-being throughout retirement.

Recognizing the difficulty of making these decisions, several larger employers have recently sponsored educational programs to help with the decision process. Clark and colleagues examine nine large companies and chart characteristics of the financial education sessions offered; some are conducted in-house, while others are offered by outside financial education groups. The sessions range in length from an hour and a half, to two and a half days. Seminar participants were asked to respond to a short survey on financial planning both before and after the education sessions. The authors show that the sessions did enhance financial knowledge, and

as a result of the programs, employees changed their planned retirement behavior. Plans to annuitize 401(k) accounts and or take lump sum distributions also changed.

In this computer era, many people turn to retirement calculators to help them with retirement planning. In their chapter, Anna M. Rappaport and John A. Turner question the quality of software packages used to project future retirement income based on current holdings and planned contributions. The authors conclude that many of these programs are too simple and provide misleading information about retirement saving. Furthermore, most of the software does not address key retirement risks; instead, the information presented to the workers frequently masks risk that might fundamentally alter expected retirement income. The programs differ in the way they treat economic and personal variables: for instance, some ignore owner-occupied housing as an asset, while others use the annuity value of one's home assuming it is fully liquid. Many fail to address residential market risk, and none handle variable rate mortgages. Most of the programs do a poor job of estimating expected returns on retirement saving accounts, with many overestimating future rates and ignoring investment fees. A related problem is that few of the retirement advice programs properly model Social Security, though the government-provided benefit is the most important component of retirement income for many. They often do a poor job in predicting Social Security benefits; one program uses the same payment regardless of the worker's age or length of work life. Further, the software packages differ dramatically in their assessments of retirement readiness but since most programs take too short a time horizon and underestimate longevity, many who follow the advice given by the programs may ultimately run out of money.

Nevertheless, some positive changes are underway, especially in the software used by professional financial planners. Some have adopted Monte Carlo simulation (this is rarely

included in the free consumer-oriented software available online). And the authors note that using retirement planning software does at least help users begin to think about their long-term financial needs, even if it has some shortcomings. Finally these programs are now easier to use than were the earlier versions of financial planning programs.

More retirement planning advice could be offered by employers, as noted by Lynn Pettus and Hall Kesmodel in their chapter. This is to some extent easier now than before, due to the passage of the Pension Protection Act (PPA) in 2006 to address concerns about whether employers would be in violation of the Employee Retirement Income Security Act (ERISA) by taking on a fiduciary role if they provided services to employees to help them learn about retirement saving and investment. The law's goal was to increase the availability of high quality advice to employees, and in fact some progress has been made: plan provider alliances now cover at least 43 million participants and more than half of those plan sponsors offer advice. The primary delivery model for employer-provided financial education programs is through online computer models and support programs with financial advisors acting as intermediaries.

Nevertheless, online computer models are not always the preferred method of actionable advice; some people would prefer work with an adviser face-to-face. And computer models geared to retirement saving often do not take into account the participant's larger financial situation. For example, a model may endorse the employee's decision to increase 401(k) contributions from three to four percent, yet for a worker carrying credit card debt with high interest rates, it might be more sensible to pay down those obligations. On the other hand the financial advisor sometimes may face conflicts of interest. Some advisors may favor one financial product over another based on commissions, and financial advisors working in an employee education program may appear to have the employer's tacit endorsement. For these

reasons, plan sponsors may wish to consider expanding financial planning education to cover more than just retirement saving and take into account housing, overall debt, and tax considerations as well, and to be alert to possible conflict of interest issues.

### **The Environment for Retirement Plan Redesign**

A key factor in redesigning retirement plans is how the plan manages labor income risk, yet this topic is often overlooked in the literature. The chapter by Raimond Maurer, Ralph Rogalla, and Olivia S. Mitchell provides an interesting assessment of how this form of risk can be mitigated in pension plans. Their work explores the impact of Social Security on defined contribution portfolios and acknowledges the fact that many employees experience substantial uncertainty about their annual earnings and employment. The authors conclude that, for most people, labor income is their single most important asset and, as such, it should have a huge impact on how they manage their saving. The authors argue that those with stable incomes and defined benefit pensions will optimally develop a different asset mix than would an investment banker whose income is highly variable and tied to volatile equity markets.

To examine what this means in practice, the authors construct a simulation model to derive recommended portfolio allocations, taking in account Social Security, labor income certainty, endogenous retirement ages, and differences in individual risk aversion. Their results imply that, for most people, it will be optimal to gradually purchase annuities over the life cycle. That is, people with very low labor income risk and high Social Security benefits should hold high equity positions while working and begin to buy payout annuities around age 55. Those with higher labor income and low Social Security benefits should start to purchase payout annuities earlier, at around age 40. By doing so, people can build up their own individualized

defined benefit plan. The authors also point out that people who have purchased annuities have a steady stream of secondary income to buffer against labor income risk, which then permits them to hold more equity.

To further examine the interaction between pension benefits and pension plan type, Jack VanDerhei and Craig Copeland focus on how pension freezes will influence lifetime retirement incomes. Their specific objective is to quantify the amount of potential retirement income foregone when employers freeze their defined benefit plans, a phenomenon that has become quite prevalent following the 2006 passage of the Pension Protection Act which added new funding requirements. While some employers did simply freeze their DB programs, others enriched their DC contributions in the process. The chapter draws on employer-provided survey data and a retirement projection model to gauge benefit generosity. The researchers report that, when DB plans freeze accruals for new employees, expected nominal replacement rates fall by less than one percent for employees under age 25 and older than 55, and two percent for those age 30 to 34. Next, VanDerhei and Copeland show that 40 percent of DB participants age 20-24 would have better replacement rates with an enhanced defined contribution plan, but the figure falls below 10 percent for people over age 55. The chapter concludes that, as companies move away from 'paternalistic' DB plans, employers will provide automatic enrollment in saving plans to encourage participation.

A different model for plan design is offered by Damon Silvers, who sees voluntary individualized retirement accounts as a failure, in part because people are allowed to extract assets from their DC plans. Instead, he argues that new formats for collective retirement plans are needed, to address the disconnect between short-term market volatility and the long-term needs of pension funds. His proposal is a new plan where a demographically-diverse workforce

could unite to set up a pension that would buy portfolio insurance issued in the form of a derivative that would keep plan assets stable even as the value of the underlying portfolio fluctuated. Yet the financial crisis has suggested that, precisely when this type of risk management solution is needed, it will not be available. This may mean that government plans must be expanded which can address three forms of risk. Investment risk can be handled by a collective professional management of assets with no more than 10 percent of a portfolio in company stock. Longevity risk can be addressed with mandatory annuitization and tougher limits on the ability to withdraw saving. Employer credit risk can be diminished with universal pension portability and a shift away from employer-sponsored plans.

The concept of annuitization is often viewed as a good way to protect retirement income security. A test case is developing now in Singapore, where the nation's government has ordered mandatory annuitization as part of the national retirement saving program under the Singaporean Central Provident Fund (CPF). Benedict Koh, Joelle H.Y. Fong, and Olivia S. Mitchell explore this proposal and discuss the implications of requiring participants to purchase annuities. In their view, mandatory annuitization will help avoid adverse selection. How important this is, is an empirical question. After evaluating the private annuity market in Singapore, the authors conclude that private insurance offers good value for the money and the relatively low proportion of participants purchasing voluntary annuities is mainly due to inertia and financial illiteracy. Therefore the new program may crowd out private offerings, though retirees may benefit due to limitations on withdrawals and mandatory annuitization.

## **Innovations in Retirement Risk Financing**

As noted at the outset, novel financial products will also be required to help retirement plans confront and manage risks innovatively. In his chapter, Igor Balevich discusses longevity risk and explores how pension plans might outsource longevity protection. While expected life spans have risen steadily in the last century, there is still much current debate about whether the pace of increase will continue as a result of rising obesity and other potential health risks.

Balevich outlines three main approaches to the problem: plan design, risk transfer to insurers, and hedging. The shift from DB to DC plans has already moved longevity risk – and many other uncertainties – from the employer to the employee, particularly when retirees take lump sums instead of annuitizing with their employers. Risk transfer to an insurer permits a pension plan to eliminate its exposure to longevity by purchasing annuities; in the UK, several companies have already moved into this business, challenging traditional insurance companies. In the US, the US Treasury Department and Internal Revenue Service essentially banned non-insurance based risk transfers in the United States as of mid-2008. Another way to cope with longevity risk, rather than attempting to eliminate it entirely, is to hedge the risk through derivative products such as longevity swaps. A longevity swap allows a plan to make fixed payments based on mortality expectations and receive floating payments tied to the mortality experience of the underlying population. The contract would be for a shorter period of time than the full term of the pension payout, but multiple contracts could be staggered with varying maturity dates. Since this hedge is not perfect, firms could be left with basis risk associated with the difference in mortality in their own population versus the national population.

In addition to building retirement assets, a major concern of retirement planning is how to best utilize assets in retirement. The mutual fund industry has been working actively to offer

products that compete with the insurers, and John Ameriks, Michael Hess, and Liqian Ren assess several currently available on the market. The global financial crisis has introduced many new uncertainties into retirement planning, particularly with guaranteed products facing difficult times. The researchers discuss payout funds which are mutual fund products that involve a mechanism to provide periodic drawdowns. There are two main types: the “endowment” style that seeks to provide payouts in perpetuity, and the “time-horizon” style where payments are scheduled over a set period. Neither type of plan offers guaranteed payments or returns; instead, they offer targeted or formula-driven distributions of assets along with a professionally managed investment portfolio. One criticism of these plans is that investors could construct similar evaluations themselves, raising the question of whether bundling by fund managers is worth 50 or 60 basis points. To understand how payout funds and other retirement income vehicles perform over time, the authors simulate a 30-year time horizon fund with an initial target payout rate of five percent. They compare this plan to other schemes including systematic distribution from a balanced mutual fund, a fixed lifetime income annuity, a variable immediate annuity, a variable annuity with a guarantee, a required minimum distribution plan, and combination strategies. They present a range of outcomes including income volatility, the probability of exhausting funds, the residual portfolio value, and internal rate of return. Their analysis shows that all strategies produce a wide variety of outcomes, including payouts and the wealth remaining to be bequeathed.

Another innovation in retirement finance is risk budgeting. The Canada Pension Plan (CPP) portfolio is managed according to this principle, as described by Tracy Livingstone and Sterling Gunn. The authors point to three key points concerning risk budgeting. First, it is not an ‘off-the-shelf’ solution, but must be tailored to each fund. Second, risk budgeting is also a way to

reinforce investment decisions with total portfolio objectives. Third, risk budgeting challenges an organization to quantify its risk and accept that number. CPP is a three-tiered plan made up of a basic old-age supplement, a contributory pension, and voluntary savings. The scheme underwent major reforms in 1997 to enhance retirement savings adequacy, including setting contribution rates at the current rate of 9.9 percent. Interestingly, when the CPP Investment Board (CPIB) was created in 1999, its establishment was coupled with limitations on federal government intervention; in exchange, the government made it clear to pension officials that contribution rates could not be raised again. As a result of this compromise, risk budgets have become part of the annual business planning process and require set expectations for the amount of risk needed to achieve return targets; the Board must annually approve an active risk limit, explaining exactly how much discretion management has to deviate from the reference portfolio. In practice, this has been particularly challenging in evaluating real estate and infrastructure investments.

Another interesting way to manage retirement risk is the Voluntary Employees' Beneficiary Association (VEBA), a scheme that seeks to preserve workers' healthcare benefits even as companies offering them are restructuring. Aaron Bernstein explores the benefits and risks of these plans in his chapter, which notes that the VEBA is a 100-year-old concept. VEBAs are essentially trust funds -- originally set up to help pre-fund retiree health obligations. Today there are about 12,000 of these flexible, tax-advantaged funds which, until now, were considered to be 'humdrum' internal funding schemes. They became nationally prominent in 2007, however, when the United Auto Workers (UAW) negotiated with Detroit automakers and succeeded in placing the retiree health obligations in VEBAs. Since VEBA is an independent trust fund responsible for retiree healthcare for a specified number of people, if it runs short of

money, there will be insufficient funds to cover the health care of the participants. And the employer is absolved of responsibility for providing additional monies to cover shortfalls. While Bernstein believes these funds have some shortcomings, given the plight of the automakers, VEBAs may have helped save jobs because they allowed employers to shift pension obligations off their books, laying the groundwork for deeper restructuring. Today VEBAs are mainly found in the heavily unionized sectors, because union-directed funds are not subject to limits imposed by Congress in 1984 designed to prevent employers from using VEBAs as tax shelters.

Following the global economic slump and sharp downturns in sales triggering bankruptcy filings by General Motors and Chrysler, VEBAs have now given employees a seat at the table during their employers' restructurings. For instance, financed in part by company stock at Chrysler, VEBAs gave employees an important position in bankruptcy proceedings; the union has gained 55 percent of the company as a result of its VEBA obligations, and union employees are now placed ahead of bondholders and creditors in court proceedings.

## **Conclusion**

The global financial crisis, with its unpredictable capital markets, widespread unemployment, poor corporate earnings, and weak global economies, threatens the future of retirement security for older workers and retirees in many countries. Yet the crisis also affords an opportunity to revisit and reexamine the institutions and programs on which we have relied in the past for retirement saving. It is important to reconsider the opportunities these plans provide for workers to accumulate sufficient monies to finance retirement. Equally important is to examine the methods of payouts and the patterns of decumulation embedded in these programs. Given the new realities of financial markets and the greater recognition of risk and uncertainty, it is

important to develop a new structure to enhance future retirement security. This volume informs the debate by exploring how workers and firms can reassess the risk associated with retirement saving and respond creatively to the new risks and realities.

The studies included in this volume highlight several key points central to enhancing retirement risk management, in order to reduce some of the uncertainty surrounding the retirement saving process, the accumulation of sufficient assets for retirement, funding of retirement plans, and managing assets in retirement. Most salient is the urgent need for greater financial education, financial literacy, and support for financial planning. Individuals who have inadequate or incorrect information about their retirement plans and general financial mathematics will make retirement decisions that reduce their economic well-being. An important policy concern is whether older workers can, in fact, boost their financial literacy to make better retirement choices. Plan sponsors also have a key role to play, as do financial advisors, in their role of finding innovative solutions to the uncertainties of aging. And last, but certainly not least, new financial products including longevity risk financing will be invaluable in making retirement more secure for millions of today's workers.