

Retirement System Risk Management

Implications of the New Regulatory Order

EDITED BY

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Introduction: Implications of the New Regulatory Order for Retirement System Risk Management

Olivia S. Mitchell, Raimond Maurer, and J. Michael Orszag

Responding to the worst financial crisis since the Great Depression, the US Congress in 2010 passed the Dodd–Frank Wall Street Reform and Consumer Protection Act, thereby altering the playbook for how banks and other financial institutions must manage their risks and report their activities. The European System of Financial Supervision (ESFS) has also worked diligently to build a coherent framework to supervise regulated financial sector institutions including banks, insurers, pension funds, and asset managers. The implosion of the financial sector also prompted calls for change to the accounting system from many seeking to better understand how assets and liabilities are reported.

While initially banks were seen by many as the most important focus for regulatory reform in the wake of the 2008–10 financial meltdown, other institutions are now attracting policymakers' purview and reform efforts. On the one hand, there is logic to this in terms of managing systemic risk and ensuring a level playing field that avoids arbitrage between institutional structures. On the other hand, the nature of pension and insurer liabilities is so different from those of bank liabilities that careful attention is needed in drafting appropriate rules. The new rules are having both direct and spillover effects on retirement systems around the world, including insurers and personal and employer-based occupational pension schemes. The first half of this volume undertakes an assessment of how global responses to the financial crisis are potentially altering how insurers, pension plan sponsors, and policymakers will manage risk in the decades to come. The second half evaluates developments in retirement saving and retirement products, to determine which and how these might help meet shortfalls in retirement provision.

Global Risk Assessment for Pensions and Annuities

Understanding how national, regional, and local regulations are changing post-financial crisis requires an assessment of the supervisory and regulatory

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environment for retirement systems and insurers. In his chapter, Peter Fisher (2016) takes on this task along with an examination of the effects of supervisory changes on market structure, conduct, and performance. In most cases, the supervisory structures overseeing insurance and pensions are complex and relatively untested. For instance, in the US and Canada, supervisors are mainly state-based, augmented by the National Association of Insurance Commissioners (NAIC). Federal actors have also recently entered the field, including the US Federal Reserve, which now supervises insurance companies representing about one-third of US insurance industry assets, the International Association of Insurance Supervisors (IAIS), and the Financial Stability Board (FSB). These regulators influence private-sector activity mainly by establishing requirements to achieve policy objectives including financial stability and enhanced consumer welfare.

Nevertheless, these policies often involve tradeoffs and have unintended effects on other markets and segments of the economy as well. For example, to ensure financial stability, some countries require global insurers to maintain elevated levels of capital, often at the subsidiary level within the country administering the measures. This reduces capital mobility across national borders. The lack of coordination across geographic markets may lead to capital inefficiencies, and higher operating costs can lead to higher product prices and potentially reduced competition as firms withdraw from certain markets. Moreover, while regulators could curtail market risks for investors, this could exacerbate the impact of other factors including longevity risk.

Life insurance companies are also coming under more scrutiny in the wake of the financial crisis, in part because they have traditionally used accounting techniques that smooth changes in values of firm assets and liabilities. By doing so, they transfer surpluses in good years to cover benefit payouts in bad years. On the one hand, some criticize these techniques for making it difficult to assess insurers' true financial status as such approaches most frequently use discretion rather than fixed rules, leaving them open to possible manipulation. Smoothing permits losses to be deferred, but when assets must be sold to pay the benefits—and losses must be realized—large reductions in benefit payments may be triggered and firm solvency may be challenged. On the other hand, opponents of fair market value (FMV) reporting contend that mark-to-market (MTM) reporting is misleading for assets held to maturity, may not be reliable if based on model prices, and could lead to undesirable firm actions. But smoothing also defers gains, and when the gains are realized, benefits can increase due to the larger value of the contingency reserve.

In their chapter on this topic, Raimond Maurer, Olivia S. Mitchell, Ralph Rogalla, and Ivonne Siegelin (2016) show that smoothing can actually add value to both annuitants and insurers. This means that curtailing smoothing might undermine the market for long-term retirement payout products.

The particular product the authors examine is the participating payout life annuity (PLA). To illustrate how payout smoothing works, the authors construct a stylized model of a life insurer selling single premium participating life annuity contracts. These are patterned after the TIAA Traditional Annuity offered by the Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF). This product provides retirees with lifetime guaranteed benefits plus non-guaranteed surplus payments. The authors conclude that accounting smoothing in the PLA context values assets at historical cost rather than at fair market value, and the practice helps to shield insurer balance sheets and income statements against capital market volatility. Surpluses shared with policyholders are conventionally computed using realized gains and losses.

Turning to mark-to-market accounting for corporate defined benefit pensions, the chapter by Joseph Busillo, Thomas Harvey, and Bryan Hoffman (2016) notes that most plan sponsors utilize Generally Accepted Accounting Principles (GAAP) for their pension plan valuation. These shield the plan from market fluctuations, which can be sensible in stable markets. Yet in a crisis such as the 2008–10 event, many plans lost money and ended up with a large pool of unamortized losses that had to be recognized over time. The mark-to-market approach by contrast exposes the balance sheet and income statement to real-world volatility. In practice, many equity analysts and rating agencies ‘unwind’ the pension funds’ status in comparative calculations. In fact, a study examining share price movements over a five-day period surrounding the announcement of an accounting change to MTM indicated that companies experienced no statistically significant changes in share prices as a result. Moreover, companies adopting pension MTM have not tended to alter their pension asset mix in response, for the most part remaining with a traditional mix of 60/40 equities/fixed-income strategies. This is similar to that followed by corporate pension plans utilizing traditional GAAP pension accounting methods.

Risk disclosure in the insurance context is the subject of Karel Van Hulle’s (2016) chapter, where he discusses the evolution of European policy starting with the Solvency I regulatory regime developed during the 1970s. He argues that there was little incentive for insurers to be risk sensitive in those days, whereas Solvency II rules under development will require harmonized insurer information available at the EU-wide level. Nevertheless, occupational pension funds will still not be required to provide information to the public at large about the risks they bear. Hence, though transparency in the insurance sector will be enhanced, he concludes that there is still no level playing field between highly regulated insurers and pension funds subject to less disclosure. What remains to be done is to better align systemic risk management with better reporting and regulation, and to more carefully assess whether pension funds should, and could, be held to the same standards as are insurers.

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One concern voiced by many in the pension field today is that regulators may be throwing the proverbial baby, pensions and insurers, out with the bathwater, namely the poorly performing banks that brought the financial system to near-ruin. In their chapter, Brian Reid and Dan Waters (2016) describe what systemic risk is, how bank-oriented models and rules have influenced thinking about systemic risk, and how this thinking has affected the subsequent regulatory focus on pensions as well as the funds and products in which they invest. They also question current theories of how asset management products could pose risks to the financial system.

As the authors note, the US Financial Stability Oversight Council (FSOC) has been established to identify threats to financial stability and promote market discipline. In Europe, the European Parliament created the European Systemic Risk Board (ESRB) to coordinate and oversee risks within the European Union. Internationally, the Financial Stability Board (FSB) has taken on the role of identifying sources of global systemic risk. Some studies exploring the connections between banks and nonbank financial institutions drew parallels between bank and nonbank intermediated credit, and thus some in the literature began referring to nonbanks as ‘shadow banks’ and their activities as ‘shadow banking.’

Nevertheless, the authors disagree with this view because they argue that capital market financial intermediation is fundamentally different from bank-based financing. Banks normally finance their investments by issuing short and medium-term debt and deposits, which create a fixed set of claims on banks. At the same time, banks hold portfolios of loans and marketable securities, the values of which rise and fall over time. This can create a mismatch driving the need to hold capital to help protect bank depositors and creditors from losses. Banks’ heavy reliance on debt to finance their balance sheets magnifies the effects on their capital when asset prices change. Among the largest US banks, the average balance sheet leverage ratio is 9:1. If asset prices fall and depositors pull money out, banks may have to quickly dispose of their assets, spurring a downward cycle. By comparison, asset managers deliver services through publicly or privately offered funds and do not own the underlying assets nor do they guarantee a set rate of return. Therefore asset managers and the products and services they provide are structurally different from those provided by banks, and they should be regulated differently.

Regulators have expressed concern that some fund structures, namely those that buy back an investor’s shares on a daily basis, could confer a ‘first mover advantage’ on fast-moving investors, potentially posing systemic risk. For instance, if investors redeemed their bond funds during a period of financial market stress, the funds might not be able to sell their assets to meet these orders, or their actions could cause prices in the bond markets to fall sharply. Yet US fund managers are required to mark their funds’

portfolios to market on a daily basis, using forward pricing and fair valuation methods to avoid predictable price movements. Using a bid- or mid-price passes some of the trading costs along to the investor leaving the fund because this pricing method values the shares near to what the fund would receive if it needed to sell assets to accommodate the redemption. Another way that funds manage costs is by imposing redemption fees on investors who leave a fund within a certain window of time after investing in the fund. In addition, most funds also reserve the right to redeem shares in kind if investors with particularly large trades want to quickly redeem their shares, so that rather than receiving cash the investor is paid with a slice of securities. Pooled products such as mutual funds or collective investment funds often have the option to redeem in-kind if the retirement plan sponsor has not given sufficient warning that it is removing the plan from the fund. Yet global regulators seem to be close to designating asset managers and their funds, possibly including large pension funds, as global systemically important financial institutions (SIFIs). If the FSOC were to designate some set of US funds or asset managers as SIFIs, this could cause a small group of funds and their investors, including pension plan participants, to bear significant costs.

Developments in Retirement Saving and Retirement Products

The second portion of this volume turns to an examination of where and how people save for old age, whether they are saving enough, and whether new risk management approaches as well as investment vehicles might enhance retirement saving efforts. The breadth and scope of these topics illustrate the challenges that face regulators and policymakers in the pension arena. To be successful, retirement income programs must be inclusive and involve as many members of society as possible. Yet at the same time, investments need to be appropriate to the timescale of savings, and may include more than the traditional liquid investments such as bonds and equities. Finally, it is important to set appropriate goals in an environment where even widely accepted notions, such as the replacement ratio, have a degree of ambiguity. This section grapples with each of these difficult issues.

The chapter by Asli Demirgüç-Kunt, Leora Klapper, and Georgios A. Panos (2016) discusses global patterns of saving for old age and inclusion using an invaluable new dataset, the World Bank's Global Findex. This includes information from many thousands of individuals interviewed around the world, providing a new set of insights into the individual and country-level factors associated with old-age asset accumulation. One of the useful aspects of this survey is that it asked about 'unbanked' persons, or

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those who save outside the formal banking system. The chapter shows that people report saving mainly for old age, education, or to start a business, and globally, about 25 percent say they are saving for old age. This rate rises to about 40 percent in high-income OECD countries and the Asia Pacific region, though it is lower in poorer economies. There is also some difference in saving propensities by gender, in that men tend to save more, as do the better educated. Financial inclusion is also strongly and usually positively correlated with old-age saving. Finally, the authors find little evidence for public/private ‘crowd-out,’ in that the probability of people saying they save for old age privately is not significantly associated with the existence or generosity of pensions.

The next chapter, by Andrew Biggs (2016), examines new ways to think about old-age retirement system payouts. Financial advisors and policy-makers often use the term ‘replacement rate’ to judge the adequacy of peoples’ retirement savings, where the term refers to a comparison of anticipated retirement income benefits to pre-retirement earnings. As a summary statistic though, the replacement rate notion has a myriad of calculation and interpretational attributes implying it can have profound implications for policy as well as individual outcomes and decisions. This chapter takes up three key questions: (1) should policymakers use replacement rates based on *stylized* workers, or should they use administrative or microsimulation data; (2) should the denominator of the replacement rate calculation—pre-retirement earnings—be adjusted for the growth of prices or the growth of economy-wide wages; and (3) should replacement rates incorporate family-size adjustments to account for how having children affects parents’ need to save for retirement?

The impact of these methodological choices is illustrated using a microsimulation model of Social Security benefits and employer-sponsored pensions. The author concludes that much of the disagreement over whether Americans face a ‘retirement crisis’ stems not from disagreements over how much retirement income American retirees *will have*, but from how much income they will *need*. Biggs argues that a replacement rate of 100 percent is unnecessary, since retirees pay lower taxes and have fewer work-related costs. Moreover, many have paid off their mortgages and completed their retirement saving. The author points out that taking these factors into account greatly reduces measured estimates of those likely to experience shortfalls in retirement.

Managing retirement risk is also taken up by Catherine Donnelly, Montserrat Guillén, and Jens Perch Nielsen (2016) in their chapter analyzing strategies for an investor with a retirement saving plan. Previous research has found that fees paid for managing investment funds and for mitigating longevity risk substantially erode pensioners’ wealth. Moreover it can be difficult to communicate the concept of uncertainty to consumers. Their

chapter, by contrast, offers a retirement investment approach with both an upper target which their wealth should not exceed, and a lower bound below which their wealth must not fall. Establishing upper and lower bounds on retirement wealth can help the returns of pension savers in the sense that managerial fees can be reduced while controlling risk.

In the final chapter by Javier Alonso, Alfonso Arellano, and David Tuesta (2016), the authors explore what shapes pension funds' decisions to invest in infrastructure. Though financial regulators in many countries do allow pension funds to invest in infrastructure, relatively few do so. This is of interest given that pension funds need to consider all possible investment options so as to improve outcomes for members and that infrastructure investment tends to be long-term in nature and hence can be aligned with pension fund objectives. Yet at the same time, infrastructure investment requires a substantial degree of governance and expertise that few pension funds have. While countries differ with regard to financial investment regulations, the degree to which their capital markets allow such investments, and the pension funds' technical capability to access direct or indirect infrastructure financing, the authors conclude that regulatory restrictions on pension funds to invest in infrastructure are less important than the institutional framework in which they operate.

Nevertheless, infrastructure investing is complex, requiring the alignment of many different stakeholder interests including shareholders, financial institutions, regulators, insurance companies, contractors, project operators, raw materials suppliers, and of course the end-users of the output. Moreover, numerous risks characteristic of such huge projects include construction delays/cost overruns/technical failures, operational risks, financial market surprises, market fluctuations, and political challenges (e.g., expropriation, political turmoil, regulation). As infrastructure investment is not marked to market frequently and often involves large projects of political importance, it is also a source of significant governance concerns. In view of these, pension funds must develop deep expertise in these fields and make sure that their governance arrangements are sufficient for the complexity involved. Some countries such as Australia and Canada permit pension funds to invest with enormous flexibility, and there the pensions have apparently successfully invested intensively in infrastructure.

Conclusion

The global financial crisis had immediate and detrimental impacts on pension and insurance company assets intended to finance millions of peoples' retirement. Since that time, regulators and policymakers have turned to increasingly focused efforts to alter how pensions and insurers

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manage and report the risks they take on. In many cases, US and European regulators have been influenced by their views of how the banking system needed to be strengthened. Nevertheless, pension funds, asset managers, and insurers differ in fundamental ways from banks, and this volume illustrates several ways in which retirement risk management should be conceived of differently from bank practice. Finally, the volume discusses a wide range of issues that regulators should consider, making clear that pension regulation requires that those involved have both breadth and depth, so as to complement what will inevitably be complex legislation and regulations to protect member interests.

In sum, our assessment of regulatory responses to the financial crisis shows that the playing field is changing for insurers and pension plan sponsors. We also discuss developments in retirement saving and retirement products, to determine which and how these might help meet shortfalls in retirement provision.

References

- Alonso, J., A. Arellano, and D. Tuesta (2016). 'Pension Fund Investment in Infrastructure and Global Financial Regulation,' in O. S. Mitchell, R. Maurer, and J. M. Orszag, eds, *Retirement System Risk Management: Implications of the New Regulatory Order*. Oxford: Oxford University Press, pp. 186–213.
- Biggs, A. G. (2016). 'Retirement Replacement Rates: What and How,' in O. S. Mitchell, R. Maurer, and J. M. Orszag, eds, *Retirement System Risk Management: Implications of the New Regulatory Order*. Oxford: Oxford University Press, pp. 154–70.
- Busillo, J., T. Harvey, and B. Hoffman (2016). 'Mark-to-Market Accounting for United States Corporate Pensions: Implementation and Impact,' in O. S. Mitchell, R. Maurer, and J. M. Orszag, eds, *Retirement System Risk Management: Implications of the New Regulatory Order*. Oxford: Oxford University Press, pp. 51–67.
- Demirgüç-Kunt, A., L. Klapper, and G. A. Panos (2016). 'Determinants of Saving for Old Age around the World,' in O. S. Mitchell, R. Maurer, and J. M. Orszag, eds, *Retirement System Risk Management: Implications of the New Regulatory Order*. Oxford: Oxford University Press, pp. 121–53.
- Donnelly, C., M. Guillén, and J. P. Nielsen (2016). 'Fundamentals of Cost and Risk that Matter to Pension Savers and Life Annuitants,' in O. S. Mitchell, R. Maurer, and J. M. Orszag, eds, *Retirement System Risk Management: Implications of the New Regulatory Order*. Oxford: Oxford University Press, pp. 171–85.
- Fisher, P. A. (2016). 'The New Insurance Supervisory Landscape: Implications for Insurance and Pensions,' in O. S. Mitchell, R. Maurer, and J. M. Orszag, eds, *Retirement System Risk Management: Implications of the New Regulatory Order*. Oxford: Oxford University Press, pp. 13–39.
- Maurer, R., O. S. Mitchell, R. Rogalla, and I. Siegelin (2016). 'Accounting-Based Asset Return Smoothing in Participating Life Annuities: Implications for Annuitants,

- Insurers, and Policymakers,' in O. S. Mitchell, R. Maurer, and J. M. Orszag, eds, *Retirement System Risk Management: Implications of the New Regulatory Order*. Oxford: Oxford University Press, pp. 40–50.
- Reid, B., and D. Waters (2016). 'Pensions, Risk, and Global Systemically Important Financial Institutions,' in O. S. Mitchell, R. Maurer, and J. M. Orszag, eds, *Retirement System Risk Management: Implications of the New Regulatory Order*. Oxford: Oxford University Press, pp. 95–118.
- Van Hulle, K. (2016). 'Risk Disclosure in the European Insurance Industry: Implications for Occupational Pension Funds,' in O. S. Mitchell, R. Maurer, and J. M. Orszag, eds, *Retirement System Risk Management: Implications of the New Regulatory Order*. Oxford: Oxford University Press, pp. 68–94.