



RETIREMENT RESEARCH REPORTS AND SOFTWARE

The Society of Actuaries (SOA) continually publishes new retirement research reports and software. All material is available at:
[SOA.org/Pension-Research](https://www.soa.org/Pension-Research)

Observations on Input and Output Smoothing: How Do They Affect the Funding of Defined Benefit Plans? presents observations about the general similarities and differences between input and output categories of smoothing methodologies.

Back Testing of Investment Performance by Asset Class explores the impact of market performance on a pension plan's ability to meet its obligations.

Improving Retirement Outcomes: Timing, Phasing and Benefit Claiming Choices evaluates several of the more common retirement timing and claiming strategies using a retirement simulation model that incorporates investment, inflation, health and long-term care risks.

Utilization of MAP-21 Pension Funding Stabilization in 2012 presents a brief summary of data that is readily available from regulatory filings for most defined benefit plans under the MAP-21.

The Rising Tide of Pension Contributions Post-2013: How Much and When? is an updated analysis of funding for the U.S. private sector single-employer DB system.

Challenges and Strategies for Financing an Increasingly Long Life focuses on how longevity impacts household financial needs in retirement and which strategies can best address these needs.

Analysis of Target Benefit Plan Design Options investigates, through stochastic modeling, the way in which different target benefit plan design features and funding strategies impact performance over the short- and long-term.

Tax-Deferred Retirement Saving in Canada examines the effectiveness of tax deferral and other fundamental choices in Canadian employer-sponsored retirement plans.

Discount Rate Sensitivities in Pension Plans examines a simple but accurate means of assessing discount rate sensitivity.

Provisions of Adverse Deviations in Going Concern Actuarial Valuations expands on a 2013 CIA paper by including information on variations in hypothetical wind-up funding levels and examining differences in required PfADs attributable to differences in plan design.

Impact of Mortality Change on U.S. Single Employer Pension Plan Funding looks at the impact on the U.S. single employer pension system as a whole of proposed mortality table changes for funding purposes, including liabilities, contributions and PBGC premiums.

U.S. Pension Plan Discount Rate Comparison 2009-2014 compares the recent historical relationship between pension plan funded status and discount rates used to compute liabilities for funding purposes.

New CPP Enhancements: What Do They Mean for Canadian Workers and Seniors? this report assesses the impact of the Canadian Pension Plan (CPP) enhancements on Canadian workers and retirees.

Retirement Adequacy in the United States: Should We Be Concerned? summarizes current research on retirement adequacy and compares different measures.

Annuities Versus Tontines in the 21st Century investigates the mechanics and practicalities of introducing retirement income tontines (RITs) in today's market place.

Settlement Cost Compared to Going Concern Funding Targets examines differences between going concern and solvency valuations based on Ontario pension plan data.

Modeling and Management of Longevity Risk is an effort by the SOA, Institute and Faculty of Actuaries, and the Canadian Institute of Actuaries, creating research projects and education materials on modeling and management of longevity risk.

The Multiemployer Plan Series consists of longitudinal studies of U.S. Multiemployer pension plans to include Contribution Analysis, PBC and PBCR: Two Stress Metrics, and Employer Withdrawal Activity Overview.

U.S. Public Pension Plan Contribution Analysis looks at contributions of U.S. State and large-city pension plans and whether they are accomplishing what they intend.

Multiemployer Pension Plan Stats is a selection of Pension Plan stats for professional athletes and entertainers.

Pension Investment and Withdrawal: What Concerns are Influencing Participant Preferences? Results from China's Occupational Pension aims to understand pension participants' investment and withdrawal behaviors and provide guidance in pension plan design, using data from China.

Patterns of Going Concern Discount Rates examines funding valuation discount rates based on data from regulatory filings in Ontario, with supplementary information from British Columbia and the United States.

Annuity Market Pricing Approaches compares the CIA pricing method for estimating group annuity closeout pricing to methods used in the U.S.

Liability-Driven Investment: Benchmark Model develops a Liability-Driven Investment (LDI) benchmark framework.

Low-Growth World: Implications for the Insurance Industry and Pension Plans introduces actuaries and risk managers in the insurance and pension industries to current literature discussing growth rates in the past and future expectations.

Background Document: Quantitative Evaluation Framework for Retirement Benefit Systems summarizes work done to date to develop a model for a quantitative evaluation framework for retirement benefit systems.