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The tenth issue of *The Journal of Retirement* features a special section on the state of retirement finances in the United States, or the preparedness of older Americans for retirement. Choosing the title for the section posed a difficulty: Some prominent researchers and writers on retirement security believe that the current situation amounts to a crisis; others express skepticism as to its severity. We have included articles that try to gauge how financially prepared Americans are for retirement, both those nearing retirement and those with some years to go, as well as articles that emphasize what can be done for those Americans, however many they are, who are at risk for serious financial difficulties in retirement.

The special section begins with “U.S. Retirement Policy Considerations for the 21st Century,” by Sylvester Schieber. This wide-ranging article begins with a brief review of three studies that conclude that a large share of Americans may be facing bleak financial prospects in retirement. (Two of the studies are earlier versions of the articles by Alicia Munnell and her colleagues and Jack VanDerhei that are featured in this section.) Schieber takes issue with the most pessimistic of the studies but notes that there is general agreement that U.S. households with modest incomes are vulnerable, particularly if workers do not contribute to retirement plans. Rather than try to gauge the number of Americans at risk for a financially strained retirement, his article analyzes policies that might improve their lot.

Some policies that have been proposed to shore up security in retirement are problematic. A program to encourage extra saving will do little for those nearing the end of their careers. Requiring low-income workers to save, particularly those near or below the poverty line, could have the perverse effect of depressing already low incomes while raising income in retirement above that of the individual’s working lifetime. A transfer that boosts income in retirement without requiring sacrifices during the working lifetime might make more sense. For higher earners, a universal saving program would not be necessary. An increase in Social Security benefits raises the question of how the increase will be financed.

Long-term care (LTC) costs are thought by many to play a role in the financial difficulties of older Americans. (LTC’s impact is analyzed in Jack VanDerhei’s article in this issue.) Schieber summarizes various studies on LTC and finds that large expenses are incurred by relatively few individuals. This pattern makes a policy of self-insuring very difficult. How much should one save to hedge against

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a one-in-twenty chance of expenditures on nursing home or home care costs of, say, \$200,000? Schieber concludes that the problem of LTC costs is an insurance problem and not a retirement saving problem.

Schieber also analyzes a policy of auto-enrollment in employer pension plans. Although the policy would not have a major impact, it does bring the plan close to 100% participation of workers with higher incomes. He also proposes various ways in which the low plan participation of low-income workers could be increased. Finally, he makes the important point that across-the-board reductions in Social Security benefits would be particularly hard on the poor.

The article “National Retirement Risk Index (NRRI) Update Shows Half of Working-Age Americans Still Falling Short” by Alicia Munnell, Wenliang Hou, and Anthony Webb presents the results of a recent update and simulation of the model developed over the years by the Retirement Research Center at Boston College. The NRRI estimates the number of households at risk for an insecure retirement. It does this by projecting the replacement rate (roughly, the ratio of income in retirement to income during working life) for working-age households and compares the rates thus estimated with target rates. If the projected replacement rate of a household falls short of its target by more than 10%, the household is deemed to be at risk. The raw statistical material the NRRI uses comes from the Federal Reserve’s *Survey of Consumer Finances*, and data from the most recent as well as earlier surveys are used. (The article explains in more detail how the NRRI’s replacement rates are estimated.)

According to the NRRI, no less than 52% of households were at risk in 2013. This was down from 2010, but only slightly. The prices of assets households hold increased, but the effect of the increases was mostly offset by several institutional changes. The NRRI is much lower for households that participate in defined benefit pension plans (who might also participate in a defined contribution plan), although a recovery in the coverage of these plans is unlikely. This sobering study contrasts its results with a study that estimated the share of households who are saving optimally for retirement and found that over 90% are doing so. The difference is explained largely by the assumption that the optimal saving study made about expenditure on children—that it is not redirected to the parents when their progeny leave the nest—and by a difference in assumed spending patterns in retirement.

In “Retirement Savings Shortfalls,” Jack VanDerhei takes a somewhat different approach. His model determines a target for spending in retirement based on spending during the working lifetime. Retirement spending also has a stochastic component, reflecting the influence of unpredictable healthcare and long-term care expenditures. A shortfall occurs when all savings have been exhausted and Social Security and pension income cannot cover targeted expenditure. The retirement savings shortfall (RSS) is measured as a lump sum. The author uses his model to show how the estimated shortfall varies by family type and how shortfalls are influenced by pension plan participation, longevity, and the introduction of an auto-IRA. The prospects for single women are not bright; the average shortfall in the case of Gen Xers is estimated to exceed \$74,000, a figure that includes all single women, whether they do or do not experience any shortfall. The length of participation in a defined contribution plan has a strong influence on average shortfalls, as does the elimination of LTC costs. Perhaps unsurprisingly, living longer than average increases the shortfall because a substantial amount of retirement wealth is not annuitized. Auto-enrollment reduces the shortfall but not by a huge amount. VanDerhei’s analysis suggests that single women who live a long time and need nursing home care may be at a real disadvantage. Longevity and debility in old age can be insured against, but neither annuities nor LTC insurance are popular with Americans. It would be difficult, as VanDerhei points out, to rely on saving to hedge these contingencies.

The last article in the Special Section, “The Reverse Mortgage: A Strategic Lifetime Income Planning Resource” by Tom Davison and Keith Turner, focuses on an instrument whose wider use might forestall retirement savings shortfalls: the reverse mortgage, or HECM (Home Equity Conversion Mortgage). This article offers a survey of reverse mortgages, how they work, recent improvements to their regulatory framework, and the role they can play in enhancing security in retirement. The authors contend that reverse mortgages are no longer a last resort but can be part of the financial strategy of financially sound households. They emphasize the role that reverse mortgages can have in dealing with “sequence of returns” risk and explain carefully the circumstances in which replacing a conventional mortgage with a reverse mortgage can increase the level of sustainable expenditure, referring to a recent study that shows an increase in the sustainable expenditure ratio from

3.75% to 6%. They argue that this increase is not necessarily at the expense of final net worth or estate value.

The remaining four articles in this issue deal with investing for retirement and the longstanding issue of Social Security's less than universal coverage of state and local government workers. In "Evaluating Target-Date Portfolios: A Practical Approach to Building Family-Wide Measures," Radu Gabudean tackles the intriguing question of assessing the equity exposure and other aspects of a target date fund (TDF) family. He argues that the TDFs that compose a family cannot be evaluated separately because each vintage is a part of a family with an overarching investment policy. A young investor might be investing in the "2050 fund" with an equity exposure of 85%. Over time, however, the exposure shifts down and the size of the investments in succeeding funds increases. The measure the author proposes is a wealth-weighted average of successive equity exposures, in which the wealth weights are derived by dividing expected wealth in a given year by the sum of wealth expected to be amassed over the accumulation period. The equity exposure thus derived is given by  $\%Eq_{Combined} = \sum_t \%Eq_t W_{t-1} / \sum_t W_{t-1}$ , where  $W_t$  stands for expected wealth in period  $t$  and  $Eq_t$  stands for equity exposure in period  $t$ . This calculation requires estimates of future rates of return. Gabudean proposes that these estimates be derived from the past performance of older vintage funds: The past 10 years of the 2040 fund will provide a better estimate of the rates of return on the 2050 for the coming 10 years than will the recent performance of the 2050 fund.

Gabudean argues that what is in principle a complicated task—calculating the wealth weights—can be simplified in light of the fact that the calculated weights are not especially sensitive to changes in the assumed rates of return and hence to changes in asset allocation. In addition, even funds with quite different glide paths can have similar wealth weights. This property facilitates comparisons across families. These propositions are illustrated with numerical examples. The article's approach can also be applied to determine the equity beta of a target-date family and other measures of risk.

In "Use Your Client's Funded Ratio to Simplify and Improve Retirement Planning Decisions," Sam Pittman presents the case for an approach to retirement planning centered on the ratio of a person's assets to his or her liabilities. This personal funded ratio is similar to the ratios that defined benefit pension plans calculate, with targeted

future expenditure being discounted by an interest rate and survival probabilities. Thus, liabilities are calculated as  $L = \sum_{t=1}^{t=T} \frac{D_t p_t}{(1+r_t)^t}$ , where  $D_t$  is targeted expenditure in year  $t$ ,  $r_t$  is the rate of interest in year  $t$ , and  $p_t$  is the probability of survival to year  $t$ .

Pittman contrasts his approach with a more conventional strategy that uses Monte Carlo simulation to calculate expected wealth in the year of retirement. He uses Monte Carlo simulations to gauge the probability that a given funded ratio will avoid a shortfall, but his focus is on sustainable expenditure. A high funded ratio does not guarantee no shortfall in spending from its target could occur, because a person might live a long time; however, the higher the ratio, the greater the chances that no spending shortfall will occur. Once a simulation has been performed for a given asset composition, it is possible to map the probability of success against the funded ratio, meaning that the funded ratio can serve as a standalone indicator.

Some two decades ago, an influential paper by W. Bengen elucidated what came to be known as the Bengen rule, that a strategy of withdrawing 4% of the value of a portfolio at the outset of retirement, with the nominal amount of the withdrawal adjusted for the increase in the price level each year, could normally be maintained for more than 30 years. In "Distribution Methods for Assets in Individual Accounts for Retirees: Life Income Annuities and Withdrawal Rules," Mark Warshawsky makes a thorough comparison of the results of applying this rule with the results of what could be termed its opposite: investing the retirement nest egg in life annuities that pay a nominally fixed amount for as long as the annuitant remains alive. The author reviews the history and some of the criticisms of the 4% rule as well as more recent work proposing a withdrawal rate lower than 4%. He also explains why many economists tend to prefer life annuities to systematic withdrawal strategies like the 4% rule and why the public at large does not.

The article sets out the assumptions for the simulation analysis that follows, which is the heart of the study. Annuity prices are derived from historical 10-year Treasury yields and the unisex mortality table the IRS requires be used for various purposes. Annuity prices also include an estimated load factor. The income derived from a systematic withdrawal rule assumes an underlying portfolio of 50% bonds and 50% stocks using historical observations of asset prices. To calculate annual income in real terms, inflation

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is simulated using historical data. Other assumptions are set out in the article.

The inflation-adjusted annual income generated by life annuities and the Bengen withdrawal rule are then simulated under a variety of assumptions about the age of retirement and the year of retirement (for which the simulation uses actual historical data). The income from the annuity always begins at a higher level than that of the Bengen rule because it is not adjusted for inflation and has a relatively high nominal rate, reflecting the impact of mortality credits. As the years pass, the difference in real terms declines until (barring those cases in which the 4% rule is handicapped by poor financial market performance) the income from the Bengen rule exceeds annuity income. However, although income from the annuity declines in real terms, it is always positive.

The Bengen rule is superior at early retirement ages and clearly inferior at later ages, when annuity premiums decline. In some scenarios, the balance under the Bengen rule falls to zero; in the historical simulation of retirement at age 65 in 1966, the balance is exhausted by year 20 (at age 85), when many cohort members would still be alive. Assuming retirement at 65 or later, average income generated by the life annuity usually exceeds average income from the Bengen rule.

Warshawsky concludes that life annuities are not unambiguously superior to a withdrawal rule. There are many investors for whom a concentrated investment in life annuities would be unadvisable. However, he argues that his article makes a strong case for making investing in a life annuity and a mixed strategy part of an advisor's advice to clients.

When Social Security was enacted in 1935, state and local government workers (SLGW) were excluded from coverage by a constitutional ruling to the effect that the

federal government was barred from imposing a payroll tax on government payments to their employees. Over time, coverage was expanded, and now about three of four million SLGW participate, leaving about 6.5 million workers uncovered. "Social Security Coverage for State and Local Government Workers: *A Reconsideration*" by William Gale, Sarah Holmes, and David John makes the case for universal coverage. The authors argue that universal coverage would benefit not only the newly participating workers but also the community at large.

Increased coverage would improve Social Security finances for several decades (newly covered workers would not be drawing benefits for some years) and address an issue of equity (everyone should pay a fair share of Social Security's legacy costs and pay for the benefits brought about by improved social conditions under Social Security).

Universal coverage would increase retirement security, both because workers who are members of a state plan would have two plans and because Social Security coverage would increase the most in states where plan finances were less solid; it would also address the consequences of long vesting periods. In addition, it would increase the security of workers who have jobs in both the public and the private sectors, who would otherwise obtain only partial Social Security benefits. A further benefit would be the extension of Social Security's superior benefits (e.g., disability insurance, inflation protection). Gale and his coauthors explain that the policy of universal coverage is not universally popular, in part because of the increased payroll taxes it would require of state and local governments.

**George A. (Sandy) Mackenzie**  
Editor

### ***Publisher's Note***

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