

Removing the Legal Impediments to Offering Lifetime Annuities in Pension Plans

Introduction

Jonathan Barry Forman,
Alfred P. Murrah Professor
of Law, University of
Oklahoma, College of Law,
TIAA Institute Fellow

Longevity risk—the risk of outliving one’s retirement savings—is probably the greatest risk facing current and future retirees in the United States. At present, for example, a 65-year-old man has a 50 percent chance of living to age 82 and a 20 percent chance of living to age 89, and a 65-year-old woman has a 50 percent chance of living to age 85 and a 20 percent chance of living to age 92.¹ The joint life expectancy of a 65-year-old couple is even more remarkable: there is a 50 percent chance that at least one 65-year-old spouse will live to age 88 and a 30 percent chance that at least one will live to 92. In short, many individuals and couples will need to plan for the possibility of retirements that can last for 30 years or more.

One of the best ways to protect against longevity risk is by securing a stream of lifetime income with a traditional defined benefit pension plan or a lifetime annuity. Over the years, however, there has been a decided shift away from traditional pensions and towards defined contribution plans that typically distribute benefits in the form of lump-sum distributions rather than as lifetime annuities (U.S. Department of Labor, Employee Benefits Security Administration, 2013), and people rarely buy annuities in the retail annuity market (Benartzi, Previtero and Thaler, 2011). All in all, Americans will have longer and longer retirements, yet fewer and fewer retirees will have secure, lifetime income streams. This *Trends and Issues* report discusses how changes in the laws and regulations governing pensions and annuities could help promote greater annuitization of retirement savings.

1. Calculations are from the Society of Actuaries, *Life Expectancy Calculator*, <https://www.soa.org/Files/Xls/research-life-expect-calc.xls> (based on the Social Security Administration’s 2010 mortality tables for the general U.S. population).

The research reported herein was performed pursuant to a grant from the TIAA Institute through the Pension Research Council/Boettner Center of the Wharton School of the University of Pennsylvania (PRC). The findings and conclusions expressed are solely those of the author and do not necessarily represent the views the PRC or TIAA.

Any opinions expressed herein are those of the author, and do not necessarily represent the views of TIAA, the TIAA Institute or any other organization with which the author is affiliated.

An overview of lifetime income mechanisms in the United States

Social Security

Elderly Americans can generally count on Social Security benefits to cover at least a portion of their retirement income needs. For example, in January of 2016, Social Security paid retirement benefits to more than 40.2 million retired workers, and the average monthly benefit paid to a retired worker was \$1,343.68 (Social Security Administration, 2016). Another 2.1 million elderly Americans received means-tested Supplemental Security Income (SSI) benefits from the federal government, and the average monthly benefit was \$434.68. Almost two-thirds of elderly Americans receive at least half of their income from Social Security (Social Security Administration, 2015).

Pension plans, individual retirement accounts, and annuities

The United States has a “voluntary” pension system, and retirement savings may be inadequate for many retirees (U.S. Government Accountability Office [GAO], 2015c; Forman and Sandy Mackenzie, 2013). At any point in time, only about half of American workers have a pension;² and participation in individual retirement accounts (IRAs) is even lower.³ Most pension plans qualify for favorable tax treatment (Staff of the Joint Committee on Taxation, 2016). Basically, employer contributions to a pension are not taxable to the employee; the pension fund’s earnings on those contributions are tax-exempt; and employees pay tax only when they receive distributions of their pension benefits. Nevertheless, employers are generally allowed to deduct their contributions.

In a *defined benefit plan*, an employer promises employees a specific benefit at retirement. For example, a plan might provide that a worker’s annual retirement benefit (B) is equal to 2 percent times the number of years of service (yos)

times final average compensation (fac) ($B = 2 \text{ percent} \times yos \times fac$). Under this traditional, final-average-pay formula, a worker who retires after 30 years of service with final average compensation of \$50,000 would receive a pension of \$30,000 a year for life ($\$30,000 = 2 \text{ percent} \times 30 yos \times \$50,000 fac$). The default benefit for defined benefit plans is a retirement income stream in the form of an annuity for life. While many defined benefit plans allow for lump-sum distributions, most retirees receive lifetime annuities. For example, according to the U.S. Government Accountability Office, 67.8 percent of workers who left employment and retired with a defined benefit pension from 2000 through 2006 took the defined benefit plan annuity (GAO, 2011, p. 26).

Under a typical *defined contribution plan*, the employer simply withholds a specified percentage of the worker’s compensation, which it contributes to an individual investment account for the worker. For example, contributions might be set at 10 percent of annual compensation. Under such a plan, a worker who earned \$50,000 in a given year would have \$5,000 contributed to an individual investment account for her ($\$5,000 = 10 \text{ percent} \times \$50,000$).⁴ Unlike defined benefit plans, defined contribution plans usually make distributions as lump-sum or periodic distributions rather than as lifetime annuities. For example, in 2010, just 18 percent of private industry workers in defined contribution plans had annuities available to them (U.S. Department of Labor, Bureau of Labor Statistics, 2011, table 21; GAO, 2011).

Over the past few decades, there has been a major shift from traditional defined benefit plans to defined contribution plans (Staff of the Joint Committee on Taxation, 2016, pp. 56–57; Mackenzie, 2010). For example, just 20 percent of *Fortune 500* companies offered salaried employees a defined benefit plan in 2015, down from 59 percent in 1998 (McFarland, 2016).

2. For example, in March of 2016, 66 percent of private-sector workers had access to a pension plan, and 49 percent of them participated (U.S. Department of Labor, Bureau of Labor Statistics, 2016, p. 5 table 1).

3. For example, while 32 percent of U.S. households had an IRA in 2015, only around 14 percent of households made contributions to their IRAs (in 2014) (Holden & Schrass, 2016, pp. 2, 19).

4. Tax-favored 401(k) plans are the most popular type of defined contribution plan in the United States today (U.S. Department of Labor, Bureau of Labor Statistics, 2010). These plans generally allow individuals to tax-shelter up to \$18,000 in 2017 (Internal Revenue Service, 2016). Also, since 2006, employers have been permitted to set up Roth 401(k) plans (Internal Revenue Code [IRC] § 402A). Contributions to these plans are not excludable, but neither the plan’s investment returns nor distributions are taxable.

Favorable tax rules are also available for *individual retirement accounts* (IRAs).⁵ Like private pensions, IRA earnings are tax-exempt, and distributions are taxable.

The federal income tax system also provides favorable tax treatment of investments in *annuities*. Although the value of an annuity investment grows over time, no tax is imposed until annuity distributions begin.

The role for annuities and other lifetime income mechanisms

With the disappearance of traditional defined benefit plans, American workers now have the primary responsibility to participate in, contribute to, and manage their retirement savings accounts throughout their working years; and they must also manage all of their retirement savings throughout their retirement years (Perun, 2010). To have adequate income throughout retirement, individuals need to make wise choices about when to retire, when to claim Social Security benefits, how to plan for an unknown length of retirement, how to plan for medical expenses and long-term care, how to use a home to provide retirement income, how to manage a retirement savings portfolio, and how to convert accumulated retirement savings into a lifetime income stream (American Academy of Actuaries, 2015a).

That is where traditional pensions, annuities, and similar lifetime income products come in. Unfortunately, people rarely choose to buy annuities voluntarily. Some of the reasons for the low demand for annuities include: the existence of alternative annuities such as Social Security, Supplemental Security Income, and traditional defined benefit plans; a willingness to rely on phased distributions from defined contribution plans, IRAs, and other retirement savings; the desire to leave bequests; the incompleteness or inefficiencies in the retail annuity market that lead to poor prices for retail annuities; and the behavioral and cultural challenges involved in getting individuals to make decisions about complex investments like annuities (Benartzi, Previtero and Thaler, 2011; Holzmann, 2015; Warshawsky, 2012).

It turns out that the demand for lifetime annuities is consistently low in most of the world, although there are a few notable exceptions (Rocha, Vittas and Rudolph, 2011; Holzmann, 2015). The gold standard is probably the Netherlands, where benefits from occupational pensions must be paid out in the form of an inflation-adjusted annuity to qualify for tax benefits (Turner and Rhee, 2013). In many countries, however, participants can choose among lump-sum distributions, phased withdrawals, and annuities, just as they often can in the United States. Experiences vary, but there are at least a few countries where participants generally select annuitization. For example, in Switzerland, around 80 percent of retirement savings accumulations are converted to lifetime annuities (Holzmann, 2015; Bütler and Teppa, 2007); and, in Chile, 70 percent of retirees choose lifetime annuitization of their public pension benefits over the phased-withdrawal alternative (Holzmann, 2015). On the other hand, annuitization in Australia is extremely rare (Agnew, 2013). The United Kingdom used to have high levels of annuitization, but it recently moved away from requiring retirees to purchase annuities (HM Revenue & Customs, 2016). All in all, the international trend seems to be to give participants access to multiple spend-down options.

Options for reform

This part offers a variety of possible legislative and regulatory changes that would encourage greater annuitization of retirement savings. In that regard, however, policymakers need to bear in mind that some policies to encourage greater annuitization might have undesirable distributional consequences.⁶

Increase and preserve retirement savings

Encourage workers to save more for retirement

At the outset, government policies could be designed to encourage workers to save more for retirement. If workers saved more during their careers, they would have larger nest eggs at retirement and a greater ability to buy annuities and other lifetime income products. Perhaps, the best way

5. In 2017, individuals can contribute and deduct up to \$5500 to an IRA (Internal Revenue Service, 2016). Also, since 1998, individuals have been permitted to set up Roth IRAs. Unlike regular IRAs, contributions to Roth IRAs are not deductible. Instead, withdrawals are tax-free. Like regular IRAs, however, Roth IRA earnings are tax-exempt.

6. Life expectancy varies with such demographic factors as gender, income, educational level, and race and Hispanic origin (National Center for Health Statistics, 2017; Forman, 2014, pp. 384–385).

to increase retirement savings would be for the United States to adopt a mandatory universal pension system like Australia, Singapore, and Chile have done (Forman and Gordon Mackenzie, 2013; GAO, 2009b, pp. 20–26; Ghilarducci, 2008).

A less intrusive federal mandate would be to require employers without plans to at least offer automatic payroll-deduction IRAs to their employees (U.S. Department of Treasury, 2016, pp. 134–137; GAO, 2013b; Iwry and John, 2009). The United Kingdom’s new National Employment Savings Trust (NEST) program is an example of this type of mandate (Sass, 2014). Pertinent here, the Obama Administration recently rolled out no-fee retirement savings accounts known as “myRAs,” short for My Retirement Account (U.S. Department of Treasury, 2017). A number of state governments in the United States are also considering requiring employers to at least offer pension plans to their uncovered workers (GAO, 2015b). Congress and the Obama Administration also recommended amending the Employee Retirement Income Security Act of 1974 to permit unaffiliated employers to join multiple-employer plans (MEPs) (U.S. Department of the Treasury, 2016, pp. 147–149; Staff of the Joint Committee on Taxation, 2016, pp. 65–71). In general, automatically enrolling workers into these types of individual retirement savings accounts should achieve higher levels of participation (OECD, 2012, pp. 45–76; VanDerhei, 2012). Automatic enrollment and similar behavioral economics nudges are not likely to solve the problem of inadequate retirement savings, but they are better than nothing.

Help participants get better returns on their retirement savings

In addition to getting workers to save more, government policies could encourage workers to do a better job with their investments. In that regard, the qualified default investment alternatives (QDIA) regulations have already helped move millions of participants away from low-yield, stable-value bond funds and towards better-diversified investments like target-date funds (Bary, 2014). The U.S. Department of Labor could clarify those QDIA regulations and also make it easier for plan sponsors to include annuities in their lineup of QDIA investment alternatives (GAO, 2015a). The government could also do a better job of regulating the fees and expenses associated with retirement plans (Forman, 2007; Collins, Holden, Duvall and Barone, 2016).

Encourage workers to work longer

The government could also encourage workers to remain in the workforce longer (Forman, 2014; American Academy of Actuaries, 2013; Munnell, Orlova and Webb, 2012; VanDerhei and Copeland, 2011). For example, because Social Security provides actuarial increases in benefits to those who delay taking their benefits, the government could encourage people to delay taking their benefits until they reach their full retirement age or, better still, until age 70 (Tacchino, Littrell and Schobel, 2012).

For that matter, the government could increase all of the statutory ages associated with retirement. For example, the 10 percent early distribution penalty on premature withdrawals applies only to pension and IRA distributions made before an individual reaches age 59½, and the early retirement age for Social Security is age 62. It could make sense to increase both early retirement ages to 65. It could also make sense to increase both the normal retirement age for Social Security (currently age 66 but gradually increasing to age 67) and the normal retirement age for pensions (typically age 65) to age 70. Finally, it could make sense to increase both the delayed retirement age for Social Security (currently age 70) and the required minimum distribution age for pensions (age 70½) to age 75 or beyond.

Preserve benefits until retirement

Government policies could also be designed to get workers to preserve their retirement savings until retirement, for example, by discouraging premature withdrawals and loans (Forman and Gordon Mackenzie, 2013; Orlova, Rutledge and Wu, 2015; GAO, 2009a). While defined benefit plans typically provide lifetime annuities for retirees and their spouses, defined contribution plans are leaky: they often allow participants to withdraw all or a portion of their individual accounts, and many plans allow participants to borrow against their accounts.

The government could mandate or encourage annuitization

There are a variety of other ways that the government could promote annuitization. One approach would be for the government to mandate that retirees use at least a portion of their retirement savings to purchase annuities or similar lifetime income guarantees (Mackenzie, 2010, pp. 191–200; Perun, 2010; Brown, 2009).

Alternatively, the government might only want to encourage annuitization. For example, the government could require plan sponsors to include annuities or other lifetime income mechanisms in their investment options and/or in their distribution options (GAO, 2011; Kennedy, 2013). The government might even require plans to default participants into annuities or trial annuities, unless participants affirmatively elect otherwise (Mackenzie, 2010, pp. 200–203; Iwry and Turner, 2009; Gale, Iwry, John and Walker, 2008).

The federal government could also provide additional tax benefits for individuals who receive income from lifetime annuities and lifetime pensions, for example, by completely exempting lifetime income payments from income taxation or favoring them with a reduced tax rate. Policymakers could, of course, target the benefit towards less affluent retirees by limiting the preferential rates to, say, no more than \$30,000 a year of annuity or pension income per retiree.

The federal government could even get into the market of selling annuities. The Social Security system implicitly allows workers to buy actuarially fair lifetime annuities merely by delaying retirement beyond age 62, but the government might also let individuals and couples buy a limited amount of explicit inflation-adjusted lifetime annuities—perhaps enough to keep them out of poverty throughout their retirement years.⁷ Alternatively, the federal government could guarantee annuities sold by private companies.

In any event, the government could make it easier for plan sponsors to offer annuities and deferred income annuities. For example, it might make sense to let plan sponsors rely on insurance regulators and industry standards to oversee and monitor annuity providers. That is the way it works in many other countries (GAO, 2013a, pp. 37–39). For example, the U.S. Department of Labor’s Employee Benefits Security Administration could post a list of approved annuities and annuity providers that plan sponsors could use.

At the very least, the government could promote better financial education about annuities and other lifetime income options. The U.S. Department of Labor already hosts a *Lifetime Income Calculator* that can be used to

estimate monthly pension benefits for a typical retiree (U.S. Department of Labor, Employee Benefits Security Administration, 2017). In addition to the *Lifetime Income Calculator*, the U.S. Department of Labor could provide (or endorse) more extensive and personalized retirement income calculators. The U.S. Department of Labor could also design (or endorse) an individualized life expectancy calculator to help participants get a better idea how long they and their spouses can expect to live. To calculate an individual’s life expectancy, these calculators typically ask about her age, education, work, smoking habits, exercise regime, and family health (for example, see Foster, Chua and Ungar, 2017).

Improve annuity regulation and markets Strengthen the market for annuities

The current state-by-state insurance regulatory system is antiquated, costly, and inefficient (Perun, 2007). One way to cut down on regulatory costs might be to allow insurance companies to avoid costly state-by-state regulation by instead electing an optional federal charter.

Another approach would be to make the state-based guaranty funds that backstop annuities stronger.⁸ A more uniform standard, or even a federal guaranty fund, would be preferable to the current system.

A related problem with retail annuities in the United States is that state laws generally prevent insurance companies from mentioning their state-based guarantees in their sales material (American Academy of Actuaries, 2015b; Abraham and Harris, 2015). The no-advertising rule seems to be designed to limit the moral hazard among insurance companies that might occur if insurance companies took greater investment risks because they could rely on the state-based insurance guarantees. While we should be concerned about the solvency of insurance companies, allowing insurance companies to advertise their state-based guarantees would increase consumer confidence in annuities and so encourage more individuals to buy them, and that should make annuity markets more competitive and bring prices down.

7. In 2017, the poverty level for a single individual is \$12,060, and the poverty level for a married couple is \$16,240 (U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, 2017).

8. All states have state-based guaranty funds that provide protections for annuitants in case the insurance company that sold them the policy becomes insolvent (National Organization of Life & Health Insurance Guaranty Associations, 2014).

Broaden the range of permissible lifetime income products

In addition to promoting annuities, it could make sense to broaden the range of permissible lifetime income products. One approach is to develop more products that pool risk among participants, as opposed to products that necessitate high premiums to compensate insurance companies for their guarantees and profits. In that regard, for example, TIAA's College Retirement Equities Fund (CREF) offers a variety of low-cost variable annuities that pool risk among participants (Forman and Sabin, 2015, p. 798; Poterba and Warshawsky, 2000). Participants choose from various funds to invest in; and later on, they choose from among a variety of distribution options, including one-life and two-life annuities. When a retiree selects a lifetime annuity, the annuity payments depend on both the investment experience of the chosen accounts and on the mortality experience of the other participants, but the way these annuities are designed, the mortality risk falls on the annuitants, and it is not guaranteed by CREF.

There are many other ideas for lifetime income products that could share longevity risk among participants.⁹ For example, so-called “defined-ambition plans”—like those in operation

in the Netherlands—offer a way to share risk among plan participants (Bovenberg, Mehlkopf and Nijman, 2016; Kortleve, 2013). Also, elsewhere, the author has suggested we could pool risk among participants with so-called “tontine annuities” and “tontine pensions” (Forman and Sabin, 2015). So-called “variable annuity pension plans” are another product that could help promote retirement income security (Camp, Coffing and Preppernau, 2014). Another idea would be to permit employers to offer longevity plans—supplemental defined benefit plans where participation begins at age 45 or later and benefits commence at age 75 or later (Most and Wadia, 2015).

Conclusion

Pensions, annuities, and similar lifetime income products provide the best way to protect against longevity risk. Over the years, the responsibility for creating such secure retirement income streams has shifted from employers to individuals. This *Trends and Issues* report showed how changes in the U.S. laws and regulations governing pensions and annuities could help promote secure, lifetime income policies.

9. See Milevsky and Salisbury (2016); Donnelly (2015); Donnelly, Guillén and Nielsen (2014); Maurer, Mitchell, Rogalla and Kartashov (2013); Maurer, Rogalla and Siegelin (2013); Donnelly, Guillén and Nielsen (2013); Qiao and Sherris (2013); Brown and Meredith (2012); Richter and Weber (2011); Denuit, Haberman and Renshaw (2011); Rocha, Vittas and Rudolph (2011); Stamos (2008); and Piggott, Valdez and Detzel (2005).

References

- Abraham, Katherine G. and Benjamin H. Harris. 2015. "The Market for Longevity Annuities." *Journal of Retirement*, 3(4, Spring): 12–27.
- Agnew, Julie. 2013. "Australia's Retirement System: Strengths, Weaknesses, and Reforms." Chestnut Hill, MA: Boston College Center for Retirement Research *Issue in Brief # 13-5*. April. http://crr.bc.edu/wp-content/uploads/2013/04/IB_13-5-508.pdf
- American Academy of Actuaries. 2015a. "Retiree Lifetime Income: Choices & Considerations." Washington, DC: American Academy of Actuaries *Lifetime Income Initiative Issue Brief*. October. http://actuary.org/files/Retiree_Choices_IB_102215.pdf
- American Academy of Actuaries. 2015b. "Risky Business: Living Longer Without Income for Life: Legislative and Regulatory Issues." Washington, DC: American Academy of Actuaries *Lifetime Income Initiative Issue Brief*. October. http://actuary.org/files/LegReg_IB_102215.pdf
- American Academy of Actuaries. 2013. "Risky Business: Living Longer Without Income for Life." Washington, DC: American Academy of Actuaries *Discussion Paper*. June. https://www.actuary.org/files/Risky-Business_Discussion-Paper_June_2013.pdf
- Bary, Andrew. 2014. "Target-Date Funds Take Over." *Barron's*. July 5. <http://www.barrons.com/articles/SB50001424053111904544004579651134019266274>
- Benartzi, Shlomo, Alessandro Previtero and Richard Thaler. 2011. "Annuity Puzzles." *Journal of Economic Perspectives*, 25(4, Fall): 143–164.
- Bovenberg, A. Lans, Roel Mehlkopf and Theo Nijman. 2016. "The Promise of Defined Ambition Plans: Lessons for the United States." In Olivia S. Mitchell and Richard C. Shea (Eds.), *Reimagining Pensions: The Next 40 Years* (pp. 215–246). Oxford, UK: Oxford University Press.
- Brown, Jeffrey A. 2009. "Automatic Lifetime Income as a Path to Retirement Income Security." Washington, DC: American Council of Life Insurers *White Paper*. September. http://www.wiserwomen.org/pdf_files/Brown,%20Retirement%20Income%20Security.pdf
- Brown, Robert L. and Tyler Meredith. 2012. "Pooled Target-Benefit Pension Plans." Montreal, QC, Canada: Institute for Research on Public Policy *Study # 27*. March. <http://irpp.org/wp-content/uploads/assets/research/faces-of-aging/new-research-article-2/IRPP-Study-no27.pdf>
- Bütler, Monika and Federica Teppa. 2007. "The Choice between an Annuity and a Lump Sum: Results from Swiss Pension Funds." *Journal of Public Economics*, 91(10): 1944–1966.
- Camp, Grant, Kelly S. Coffing and Ladd E. Preppernau. 2014. "Making the case for variable annuity pension plans (VAPPs)." October 7. <http://us.milliman.com/basic-vapp-benefits/>
- Collins, Sean, Sarah Holden, James Duvall and Elena Barone. 2016. "The Economics of Providing 401(k) Plans: Services, Fees, and Expenses, 2015." Washington, DC: Investment Company Institute *ICI Research Perspective*, 22(4, July). Available at <https://www.ici.org/research/retirement>
- Denuit, Michael, Steven Haberman and Arthur Renshaw. 2011. "Longevity-Indexed Life Annuities." *North American Actuarial Journal*, 15(1): 97–111.
- Donnelly, Catherine. 2015. "Actuarial Fairness and Solidarity in Pooled Annuity Funds." *Astin Bulletin*, 45(1): 49–74;
- Donnelly, Catherine, Montserrat Guillén and Jens Perch Nielsen. 2014. "Bringing cost transparency to the life annuity market." *Insurance: Mathematics and Economics*, 56 (May): 14–27.
- Donnelly, Catherine, Montserrat Guillén and Jens Perch Nielsen. 2013. "Exchanging uncertain mortality for a cost" *Insurance: Mathematics and Economics*, 52(1, Jan.): 65–76.

- Forman, Jonathan Barry. 2014. "Supporting the Oldest Old: The Role of Social Insurance, Pensions, and Financial Products." *Elder Law Journal*, 21(2): 375–417.
- Forman, Jonathan Barry. 2007. "The Future of 401(k) Plan Fees." *2007 New York University Review of Employee Benefits & Executive Compensation*, 9-1–9-18.
- Forman, Jonathan Barry and George A. (Sandy) Mackenzie. 2013. "The Cost of 'Choice' in a Voluntary Pension System." *2013 New York University Review of Employee Benefits & Executive Compensation*, 6-1–6-55.
- Forman, Jonathan Barry and Gordon D. Mackenzie. 2013. "Optimal Rules for Defined Contribution Plans: What Can We Learn from the U.S. and Australian Pension Systems?" *Tax Lawyer*, 66(3, Spring): 613–651.
- Forman, Jonathan Barry and Michael J. Sabin. 2015. "Tontine Pensions." *University of Pennsylvania Law Review*, 163(3): 757–831.
- Foster, Dean P, Choong Tze Chua and Lyle H. Ungar. 2017. "How Long Will you Live?" Available at <http://gosset.wharton.upenn.edu/~foster/mortality/>
- Gale, William G., J. Mark Iwry, David C. John and Lina Walker. 2008. "Increasing Annuitization in 401(k) Plans with Automatic Trial Income." Washington, DC: Brookings Institution *Retirement Security Project Paper # 2008-2*. http://www.brookings.edu/~media/Files/rc/papers/2008/06_annuities_gale/06_annuities_gale.pdf
- Ghilarducci, Teresa. 2008. *When I'm Sixty-Four: The Plot against Pensions and the Plan to Save Them*. Princeton, NJ: Princeton University Press.
- HM Revenue & Customs. 2016. "Pension Flexibility 2016." March 16. <https://www.gov.uk/government/publications/pension-flexibility-2016>
- Holden, Sarah and Daniel Schrass. 2016. "The Role of IRAs in U.S. Households' Saving for Retirement, 2015." Washington, DC: Investment Company Institute *ICI Research Perspective*, 22(1, February). Available at <https://www.ici.org/research/retirement>
- Holzmann, Robert. 2015. "Addressing Longevity Risk through Private Annuities: Issues and Options." March 30. <http://international-pension-workshop.com/papers-pdf/Holzmann.pdf>
- Internal Revenue Service. 2016. "IRS Announces 2017 Pension Plan Limitations: 401(k) Contribution Limit Remains Unchanged at \$18,000 for 2017." IR-2016-141. October 27. <https://www.irs.gov/uac/newsroom/irs-announces-2017-pension-plan-limitations-401k-contribution-limit-remains-unchanged-at-18000-for-2017>
- Iwry, J. Mark and David C. John. 2009. "Pursuing Universal Retirement Security Through Automatic IRAs." Washington, DC: Brookings Institution *Retirement Security Project Paper # 2009-3*. http://www.brookings.edu/~media/Files/rc/papers/2009/07_automatic_ira_iwry/07_automatic_ira_iwry.pdf
- Iwry, J. Mark and John A. Turner. 2009. "Automatic Annuitization: New Behavioral Strategies for Expanding Lifetime Income." Washington, DC: Brookings Institution *Retirement Security Project Paper # 2009-2*. http://www.brookings.edu/~media/Files/rc/papers/2009/07_annuitization_iwry/07_annuitization_iwry.pdf
- Kennedy, Kathryn J. 2013. "How Can Lifetime Income Be Made a Desirable Retirement Plan Distribution Option?" *2013 New York University Review of Employee Benefits & Executive Compensation*, 1-1–1-23.
- Kortleve, Niels. 2013. "The 'Defined Ambition' Pension Plan: A Dutch Interpretation." *Rotman International Journal of Pension Management*, 6(1, Spring): 6–11.
- Mackenzie, George A. (Sandy). 2010. *The Decline of the Traditional Pension: A Comparative Study of Threats to Retirement Security*. Cambridge, UK: Cambridge University Press.

- Maurer, Raimond, Olivia S. Mitchell, Ralph Rogalla and Vasily Kartashov. 2013. "Lifecycle Portfolio Choice with Stochastic and Systematic Longevity Risk, and Variable Investment-Linked Deferred Annuities." *Journal of Risk and Insurance*, 80(3): 649–676.
- Maurer, Raimond, Ralph Rogalla and Ivonne Siegelin. 2013. "Participating Payout Life Annuities: Lessons from Germany." *ASTIN Bulletin*, 43(2, May): 159–187.
- McFarland, Brendan. 2016. "A Continuing Shift in Retirement Offerings in the Fortune 500." *Willis Towers Watson Insider*, 26(2, February). <https://www.towerswatson.com/en-US/Insights/Newsletters/Americas/insider/2016/02/a-continuing-shift-in-retirement-offerings-in-the-fortune-500>
- Milevsky, Moshe A. and Thomas S. Salisbury. 2016. "Equitable Retirement Income Tontines: Mixing Cohorts Without Discriminating." *ASTIN Bulletin*, 46(3, September): 571–604.
- Most, William and Zorast Wadia. 2015. "Longevity Plans: An Answer to the Decline of the Defined Benefit Plan." *Benefits Law Journal*, 28(1, Spring): 23-28.
- Munnell, Alicia H., Natalia Sergeevna Orlova and Anthony Webb. 2012. "How Important is Asset Allocation to Financial Security in Retirement?" Chestnut Hill, MA: Boston College Center for Retirement, *Working Paper # 2012-13*. April. <http://crr.bc.edu/wp-content/uploads/2012/04/wp-2012-13.pdf>
- National Center for Health Statistics. 2017. "Life Expectancy." <http://www.cdc.gov/nchs/fastats/life-expectancy.htm>
- National Organization of Life & Health Insurance Guaranty Associations. 2014. "The Nation's Safety Net." Herndon, VA: National Organization of Life & Health Insurance Guaranty Associations. <https://www.nolhga.com/resource/file/NOLHGA%20Safety%20Net%202014.pdf>
- Organization for Economic Co-operation and Development (OECD). 2012. *OECD Pensions Outlook 2012*. http://www.oecd-ilibrary.org/finance-and-investment/oecd-pensions-outlook-2012_9789264169401-en
- Orlova, Natalia S., Matthew S. Rutledge and April Yanyuan Wu. 2015. "The Transition from Defined Benefit to Defined Contribution Pensions: Does It Influence Elderly Poverty?" Chestnut Hill, MA: Boston College Center for Retirement Research *Working Paper # 2015-17*. July. http://crr.bc.edu/wp-content/uploads/2015/06/wp_2015-17.pdf
- Perun, Pamela. 2010. "Retirement Savings: Confronting the Challenge of Longevity." Washington, DC: Aspen Institute, Initiative on Financial Security. http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/ConfrontingLongevity_AspenIFS.pdf
- Perun, Pamela. 2007. "Putting Annuities Back into Savings Plans." In Teresa Ghilarducci and Christian E. Weller (Eds.), *Employee Pensions: Policies, Problems, and Possibilities* (pp. 143–162). Washington, DC: The Aspen Institute. <http://www.aspeninstitute.org/sites/default/files/content/images/PerunPuttingAnnuities%20BackintoSavingsPlans.pdf>
- Piggott, John, Emiliano A. Valdez and Bettina Detzel. 2005. "The Simple Analytics of a Pooled Annuity Fund." *Journal of Risk and Insurance*, 72(3): 497–520.
- Poterba, James M. and Mark Warshawsky. 2000. "The Costs of Annuitizing Retirement Payouts from Individual Accounts." In John B. Shoven (Ed.), *Administrative Aspects of Investment-Based Social Security Reform* (pp. 173–206). Chicago, IL: University of Chicago Press.
- Qiao, Chao and Michael Sherris. 2013. "Managing Systematic Mortality Risk With Group Self-Pooling and Annuitization Schemes." *Journal of Risk and Insurance*, 80(4): 949–974.
- Richter, Andreas and Frederik Weber. 2011. "Mortality-Indexed Annuities: Managing Longevity Risk via Product Design." *North American Actuarial Journal*, 15(2): 212–236.

- Rocha, Robert, Dimitri Vittas and Heinz P. Rudolph. 2011. *Annuities and Other Retirement Products: Designing the Payout Phase*. Washington, DC: The World Bank. <https://openknowledge.worldbank.org/bitstream/handle/10986/2272/600520PUB01D181rement09780821385739.pdf?sequence=1>
- Sass, Steven S. 2014. "The U.K.'s Ambitious New Retirement Savings Initiative." Chestnut Hill, MA: Boston College Center for Retirement Research *Issue in Brief* # 14-5. March. http://crr.bc.edu/wp-content/uploads/2014/03/IB_14-5-508.pdf
- Social Security Administration. 2016. "Monthly Statistical Snapshot, January 2016." https://www.ssa.gov/policy/docs/quickfacts/stat_snapshot/2016-01.pdf
- Social Security Administration. 2015. "Fast Facts & Figures About Social Security, 2015." https://www.ssa.gov/policy/docs/chartbooks/fast_facts/2015/fast_facts15.pdf
- Staff of the Joint Committee on Taxation 114th Congress. 2016. "Present Law And Background Relating To Tax-Favored Retirement Saving And Certain Related Legislative Proposals." JCX-3-16. January 26.
- Stamos, Michael Z. 2008. "Optimal consumption and portfolio choice for pooled annuity funds." *Insurance: Mathematics and Economics*, 43(1, August): 56–68.
- Tacchino, Kenn Beam, David A. Littell and Bruce D. Schobel. 2012. "A Decision Framework for Optimizing the Social Security Claiming Age." *Benefits Quarterly* 28(2, Second Quarter): 40–54.
- Turner, John A. and Nari Rhee. 2013. "Lessons for Private Sector Retirement Security from Australia, Canada, and the Netherlands." Washington, DC: National Institute on Retirement Security *Issue Brief*. http://www.nirsonline.org/storage/nirs/documents/International%20Paper/final_international_august_2013.pdf
- U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation. 2017. "U.S. Federal Poverty Guidelines Used to Determine Financial Eligibility for Certain Federal Programs." <https://aspe.hhs.gov/poverty-guidelines>
- U.S. Department of Labor, Bureau of Labor Statistics. 2016. "Employee Benefits in the United States—March 2016." *News Release* # USDL-16-1493. July 24. <http://www.bls.gov/news.release/pdf/ebs2.pdf>
- U.S. Department of Labor, Bureau of Labor Statistics. 2011. "National Compensation Survey: Health and Retirement Plan Provisions in Private Industry in the United States, 2010." Bulletin 2770. August. <http://www.bls.gov/ncs/ebs/detailedprovisions/2010/ebbl0047.pdf>
- U.S. Department of Labor, Bureau of Labor Statistics. 2010. "BLS examines popular 401(k) retirement plans." *Program Perspectives*. 2(6, November). http://www.bls.gov/opub/perspectives/program_perspectives_vol2_issue6.pdf
- U.S. Department of Labor, Employee Benefits Security Administration. 2017. "Lifetime Income Calculator." <http://www.dol.gov/ebsa/regs/lifetimeincomecalculator.html>
- U.S. Department of Labor, Employees Benefits Security Administration. 2013. "What You Should Know About Your Retirement Plan." <http://www.dol.gov/ebsa/pdf/wyskgreenbook.pdf>
- U.S. Department of Treasury. 2017. "myRA." <https://myra.gov/>
- U.S. Department of Treasury. 2016. "General Explanations of the Administration's Fiscal Year 2017 Revenue Proposals." February. <https://www.treasury.gov/resource-center/tax-policy/Documents/General-Explanations-FY2017.pdf>
- U.S. Government Accountability Office. 2015a. "401(K) Plans: Clearer Regulations Could Help Plan Sponsors Choose Investments for Participants." GAO-15-578. August.
- U.S. Government Accountability Office. 2015b. "Retirement Security: Federal Action Could Help State Efforts to Expand Private Sector Coverage." GAO-15-556. September.

- U.S. Government Accountability Office. 2015c. "Retirement Security: Most Households Approaching Retirement Have Low Savings." GAO-15-419. May.
- U.S. Government Accountability Office. 2013a. "401(k) Plans: Other Countries' Experiences Offer Lessons in Policies and Oversight of Spend-down Options." GAO-14-9. November.
- U.S. Government Accountability Office. 2013b. "Automatic IRAs: Lower-Earning Households Could Realize Increases in Retirement Income." GAO-13-699. August.
- U.S. Government Accountability Office. 2011. "Retirement Income: Ensuring Income throughout Retirement Requires Difficult Choices." GAO-11-400. June.
- U.S. Government Accountability Office, 2009a. "401(k) Plans: Policy Changes Could Reduce the Long-term Effects of Leakage on Workers' Retirement Savings." GAO-09-715. August.
- U.S. Government Accountability Office. 2009b. "Private Pensions: Alternative Approaches Could Address Retirement Risks Faced by Workers but Pose Trade-offs." GAO-09-642. July.
- VanDerhei, Jack. 2012. "Increasing Default Deferral Rates in Automatic Enrollment 401(k) Plans: The Impact on Retirement Savings Success in Plans with Automatic Escalation." Washington, DC: Employee Benefit Research Institute *EBRI Notes*, 33(9, September): 12-22.
- VanDerhei, Jack and Craig Copeland. 2011. "The Impact of Deferring Retirement Age on Retirement Income Adequacy." Washington, DC: Employee Benefit Research Institute *Issue Brief # 358*. June. http://www.ebri.org/pdf/briefspdf/EBRI_IB_06-2011_No358_Defr-Ret.pdf
- Warshawsky, Mark J. 2012. *Retirement Income: Risks and Strategies*. Cambridge, MA: MIT Press.

About the Author

Professor Jonathan Barry Forman is the Alfred P. Murrah Professor of Law at the University of Oklahoma, where he teaches courses on tax and pension law. Professor Forman served in Washington, DC, as the Professor in Residence for the Internal Revenue Service Office of Chief Counsel for the 2009-2010 academic year, and he was a member of the Board of Trustees of the Oklahoma Public Employees Retirement System (OPERS) from 2003 through 2011.

Professor Forman is also active in the American Bar Association, the American College of Employee Benefits Counsel, the American College of Tax Counsel, the Association of American Law Professors, and the National Academy of Social Insurance. Professor Forman has lectured around the world, testified before Congress, and served on numerous federal and state advisory committees.

Professor Forman has more than 300 publications including *Making America Work* (Urban Institute Press 2006); “Removing the Legal Impediments to Offering Lifetime Annuities in Pension Plans,” *Connecticut Insurance Law Journal* 23(1, Fall 2016): 31–141; and “Tontine Pensions,” *University of Pennsylvania Law Review* 163(3, February 2015): 755–831 (with Michael J. Sabin). In addition to his many scholarly publications, Professor Forman has published op-eds in *Barron’s*, the *Los Angeles Times*, the *Dallas Morning News*, the *Cleveland Plain Dealer*, the *Washington Times*, the *Daily Oklahoman*, and numerous other newspapers and magazines. Professor Forman earned his law degree from the University of Michigan in 1978, and he has Master’s degrees in economics and psychology. Also, prior to entering academia, it was his privilege to serve in all three branches of the federal government, including as Tax Counsel to the late Senator Daniel Patrick Moynihan (D-NY).