

Removing the Legal Impediments to Offering Lifetime Annuities in Pension Plans

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1. Introduction

Longevity risk—the risk of outliving one’s retirement savings—is probably the greatest risk facing current and future retirees in the United States (Oakley, 2015; Park 2011). 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. There were 48.6 million retirees in the United States in 2014, but there are expected to be 66.4 million retirees in 2025 and 82.1 million in 2040 (Kerzner, 2015).

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, 2013b), 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 *Research Dialogue* considers 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; an individual’s life expectancy is the average number of years until death).

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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.

2. An overview of lifetime income mechanisms in the United States

2.1. 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).

2.2. Pension plans, IRAs, and annuities

At the end of 2015, Americans had \$27.3 trillion in household retirement assets, including \$11.3 trillion in defined benefit plans, \$6.3 trillion in defined contribution plans, \$7.4 trillion in individual retirement accounts (IRAs), and \$2.3 trillion in annuities (Board of Governors of the Federal Reserve System, 2016, table L.117). Unfortunately, the United States has a “voluntary” pension system, and retirement savings may be inadequate for many retirees (U.S. Government Accountability Office [GAO], 2015d; Forman and Sandy Mackenzie, 2013). At any point in time, only about half of American workers have a pension;² and participation in IRAs is even lower.³ Also, while the market for annuities is well-developed in the United States, annuities represent just 8 percent of retirement assets in 2015.⁴

Pension plans

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. Employers are generally allowed to deduct their contributions.

Defined benefit plans

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. 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).

Defined contribution plans

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 ($\$5,000 = 10 \text{ percent} \times \$50,000$). Her benefit at retirement would be based on all such contributions plus investment earnings. A separate account is maintained for each participant, and participants are typically allowed to direct the investment of their individual accounts.

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. For example, using the already-mentioned Federal Reserve Board estimates, there were \$2.3 trillion in annuities out of a total of \$27.3 trillion in household retirement assets, and that works out to be around 8 percent ($0.084249 = \$2.3 \text{ trillion} / \27.3 trillion).

Unlike defined benefit plans, defined contribution plans usually make distributions as lump-sum or periodic distributions rather than as lifetime annuities. Indeed, relatively few defined contribution plans even offer annuity options, and, in any event, relatively few participants elect those annuity options.⁵ 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). Many defined contribution plans also provide for loans to participants, and some plans provide in-service “hardship” distributions.

Of particular importance, profit-sharing and stock bonus plans often include a feature that allows workers to choose between receiving cash currently or deferring taxation by placing the money in a retirement account according to Internal Revenue Code (IRC) section 401(k). Consequently, these plans are usually called “401(k) plans,” and they are the most popular type of retirement plan in the United States (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 (IRC § 402A). Contributions to these plans are not excludable, but neither the plan’s investment returns nor distributions are taxable.

401(k) plans are often designed with automatic enrollment features that can lead to higher participation rates (OECD, 2012, pp. 45–76; Butrica & Karamcheva, 2015). Many employers also provide matching contributions.

The regulation of employment-based plans

Since it was enacted more than 40 years ago, the Employee Retirement Income Security Act of 1974 (ERISA) has been amended numerous times, and a whole regulatory system has grown up to enforce its provisions.⁶ The key agencies charged with the administration of ERISA are the U.S. Department of Labor, the Internal Revenue Service (IRS), and the Pension Benefit Guaranty Corporation (PBGC).

Pension plans must be operated for the exclusive benefit of employees (and beneficiaries). To protect the interests

of these plan participants, ERISA requires significant reporting and disclosure in the administration and operation of employee benefit plans. ERISA also imposes extensive fiduciary responsibilities on plan sponsors, and so-called “prohibited transaction” rules prevent them from self-dealing with the plan. ERISA and the Internal Revenue Code also impose many other requirements on retirement plans, including rules governing participation, coverage, vesting, benefit accrual, contribution and benefits, nondiscrimination, and funding. Also, distributions made before age 59½ are generally subject to a 10 percent early distribution penalty (IRC § 72(t)); and plan participants must usually take required minimum distributions soon after they reach age 70½ (IRC § 401(a)(9)).

In addition to meeting their funding obligations, defined benefit plans in the private sector must pay premiums to the PBGC for plan termination insurance (PBGC, 2017a). In the event that an underfunded, private-sector defined benefit plan terminates (for example, because the employer goes out of business), the PBGC will pay annual pension benefits of up to \$64,432 per participant in 2017 (PBGC, 2016b). The PBGC insures the benefits of more than 40 million workers and retirees, and it pays benefits to more than 800,000 people each month (PBGC, 2016a).

The shift from defined benefit plans to defined contribution plans

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).

Individual retirement accounts

Favorable tax rules are also available for individual retirement accounts (IRAs). In 2017, individuals can contribute and deduct up to \$5,500 to an IRA (Internal Revenue Service, 2016). Like private pensions, IRA earnings are tax-exempt, and distributions are taxable. Also, since 1998, individuals have been permitted to set up Roth IRAs

5. There are exceptions like TIAA—which reports that around 75 percent of its beneficiaries receive annuity payments (McGee, 2015, p. 13; McGee & Yakoboski, 2013, p. 3).

6. Public Law No. 93-406, 88 Statutes at Large 864 (enacted September 2, 1974) (codified in title 26 [the Internal Revenue Code {IRC}] and title 29 [the labor law provisions] of the U.S. Code [USC]).

(IRC § 408A). 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.

Annuities and other savings

In addition to voluntary saving through 401(k) elections and IRAs, individuals can also save money outside of the retirement system. Investment income is generally subject to federal income tax rates of up to 39.6 percent; however, capital gains and dividends are generally taxed at a preferential tax rate of 0, 15, or 20 percent, depending on the income tax rate that would be assessed on the same amount of ordinary income (IRC § 1).

Annuities

The federal income tax system also provides favorable tax treatment of investments in annuities (IRC § 72). Although the value of an annuity investment grows over time, no tax is imposed until annuity distributions begin. On the other hand, if an annuitant dies before she recovers her investment, that unrecovered investment can be deducted on the tax return for the year that she died.

With a “fixed annuity,” the insurance company typically promises to make specific dollar payments to the annuitant for the term of the annuity contract, often for life. For example, a 65-year-old man who purchased a \$100,000 immediate fixed (lifetime) annuity on December 1, 2015 would receive around \$6,540 a year for life (6.54 percent of the annuity’s purchase price) (Immediate Annuities, 2016, p. 17).

Inflation-adjusted annuities offer an even better way to hedge against living too long. With inflation-adjusted annuities, annual payments would start out lower than level-payment fixed annuities but could end up higher. For example, if the hypothetical 65-year-old man in the last paragraph instead chose an annuity with a 3-percent annual escalator, the initial annual payment would be just \$4,728, but, eventually, the annual payments would exceed the \$6,540 per year under the level-payment fixed lifetime annuity (Immediate Annuities, 2016, p. 17).

Individuals can also purchase deferred income annuities (also known as longevity insurance). For example, in February of 2012, a 65-year-old man could invest \$100,000 in a MetLife deferred income annuity, and beginning at age 85, he would receive \$25,451.04 per year for the rest of his life.⁷

Variable annuities allow the annuitant to select from a range of investment options. She can do better if the underlying investments do well, or worse if those investments perform poorly. It should be noted, however, that many investors buy variable annuities primarily for their tax advantages and rarely elect to turn them into lifetime income streams (Oakley, 2015, p. 15).

Other savings

Another common strategy for generating retirement income is to invest in a diversified portfolio and then use a systematic withdrawal plan (SWP) that is designed to have a high probability that her retirement savings will last for 20 or 30 years. For example, financial planners often suggest following the so-called “4 percent rule” (Bengen, 1994). Another phased distribution strategy is to base withdrawals on the retiree’s life expectancy. These phased distribution strategies can be used with both freestanding savings and with tax-favored defined contribution plans and IRAs.

3. The regulation of retail annuities and pension distributions

3.1. The regulation of retail annuities

Individuals can use their freestanding savings and IRAs to buy retail annuities in the marketplace. In general, companies offering annuities are subject to comprehensive regulation by state government insurance departments (Insured Retirement Institute, 2016). With a typical annuity, an insurance company bears the risk of making certain guaranteed payments. Because insurance companies bear such risks, they are heavily regulated and must maintain adequate reserves. In addition, 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

7. MetLife Investors Longevity Income Guarantee Quote (personal communication from Hersh L. Stern, WebAnnuities Insurance Agency, Inc., February 7, 2012, in the possession of the author).

& Health Insurance Guaranty Associations, 2014). While the guarantee limits vary from state to state, every state provides a minimum of \$100,000 in benefit protection for annuities, and most states provide at least \$250,000 in protection.

3.2. The regulation of annuities in defined benefit plans

Rules governing lump-sum distributions

The default benefit for defined benefit plans is a lifetime pension in the form of an annuity (Treasury Regulation [Treas. Reg.] § 1.401-1(b)(1)), and for married participants, the default benefit is a qualified joint-and-survivor annuity (QJSA) (ERISA § 205; IRC § 401(a)(11)). These days, most defined benefit plans also offer participants some type of lump-sum distribution option (Banerjee, 2013). A participant who can take a lump-sum distribution can generally take that distribution when she terminates employment, or she can defer the distribution until a later date.

When a lump-sum alternative is offered to a participant, the minimum lump-sum amount must be determined in accordance with certain actuarial “relative valuation” rules (IRC § 411(c)(3)). The minimum lump sum must have a value equal to the actuarially determined present value of the participant’s expected stream of lifetime pension benefits. The Internal Revenue Code also generally restricts a defined benefit plan’s ability to cash out a participant’s benefit without the participant’s consent (IRC § 411(a)(11)). The plan generally does not need the participant’s consent if the present value of her benefit is \$5,000 or less; however, if the accrued benefit is over \$1,000, the plan must also offer the employee the option of rolling such distributions into an IRA or a new employer’s plan (IRC § 401(a)(31)(B)). If the participant’s consent is needed and the participant is married, then spousal consent is also required. While these lump-sum distribution rules provide a variety of protections for plan participants, many analysts worry that employees who take lump-sum distributions will dissipate them too quickly (GAO, 2009a).

Rules governing the purchase and monitoring of annuities

The selection of an annuity provider is a fiduciary decision, and the plan sponsor must choose the “safest available” provider (29 Code of Federal Regulations [CFR] § 2509.95-

1). A plan sponsor also has a duty to monitor the appropriateness of the annuity providers that it selects. The U.S. Department of Labor’s new fiduciary conflict-of-interest rule will apply to financial advisers who sell annuities to defined benefit pension plans and plan participants (U.S. Department of Labor, Employee Benefits Security Administration, 2016). Assuming the controversial new rule actually goes into effect, it should lead to lower and more transparent fees.⁸

3.3. The regulation of annuities in defined contribution plans

Annuities can also play a role in defined contribution plans. First, defined contribution plans may offer deferred income annuities among their investment options. Second, a defined contribution plan may offer participants the option to annuitize their account balances at retirement or job separation. Third, almost all defined contribution plan participants may take a lump-sum distribution (or roll over their account balance into an IRA) and subsequently purchase an annuity (Brien and Panis, 2011).

Rules governing lump-sum distributions

Defined contribution plans are not required to offer annuities, and most make lump-sum or periodic distributions instead. All in all, departing employees can usually leave their money in the plan, roll it over into an IRA or other plan, or cash it out and spend it.

Rules governing the purchase and monitoring of annuities

Fiduciary duties generally

When a defined contribution plan does offer an annuity, the selection of an annuity provider is a fiduciary function (29 CFR § 2550.404a-4). A defined contribution plan sponsor also has a duty to monitor the appropriateness of the annuity providers that it selects. A defined contribution plan is relatively free to impose restrictions on the amount of assets that may be annuitized, even “unpalatable” restrictions (Brien and Panis, 2011). For example, the plan may require the participant to annuitize either all, or none, of her account balance. The U.S. Department of Labor’s new fiduciary conflict-of-interest rule will also apply to financial advisers who sell annuities to defined contribution plans

8. The Trump Administration recently delayed implementation of the rule (Leonhardt, 2017).

and plan participants (U.S. Department of Labor, Employee Benefits Security Administration, 2016).

Annuity investments in defined contribution plans

While a defined contribution plan sponsor can select the investments for its plan, ERISA generally allows plans to permit individual participants to direct their own investments (i.e., “self-directed” or “participant-directed” accounts) (ERISA § 404(c)). To be eligible for this “safe harbor,” the plan must provide participants with the opportunity to choose from a broad range of investment alternatives, which can include annuities. The plan sponsor must also choose a default investment for workers who do not otherwise direct their own investments. Historically, plan sponsors used low-yield, stable-value bond funds for that purpose, but the Pension Protection Act of 2006 amended ERISA to improve the so-called “qualified default investment alternatives” (QDIAs) (U.S. Department of Labor, Employee Benefits Security Administration, 2008). In response to these rule changes, defined contribution plans have moved away from stable-value funds and towards target-date funds, but plan sponsors can also offer annuities.

Regardless of how participants invest over the course of their careers, at retirement or job separation, a defined contribution plan can offer an in-plan annuity distribution option. To avoid the fiduciary risks that come from selecting and monitoring annuity providers, however, plan sponsors can offer annuities outside the plan as an IRA rollover option.

3.4. The regulation of annuities in individual retirement accounts

Individuals can also use their individual retirement accounts (IRAs) to buy annuities. For example, an individual might roll over a lump-sum pension payment into an IRA and then have the IRA purchase an annuity. The U.S. Department of Labor’s new fiduciary conflict-of-interest rule will also apply to financial advisers who sell annuities to IRA holders (U.S. Department of Labor, Employee Benefits Security Administration, 2016).

3.5. Pension risk transfers

Over the years, defined benefit plan sponsors have found it challenging to manage the risks associated with those plans. This has been particularly true since the Financial Accounting Standards Board (FASB) began requiring

corporate employers to recognize the funding obligations associated with their defined benefit plans (Financial Accounting Standards Board, 2006). In general, corporate employers have responded by “freezing,” terminating, or replacing their traditional defined benefit plans (Wiatrowski, 2011). Many defined benefit plan sponsors are now focused on “de-risking” strategies that transfer risk to insurance companies by purchasing annuities for participants (insurance annuity risk transfers) or that transfer risk to participants by making lump-sum distributions to the participants (lump-sum risk transfers) (U.S. Department of Labor, Advisory Council on Employee Welfare and Pension Benefit Plans, 2013; Secunda and Maher, 2016). In a lump-sum risk transfer, the participant gets a lump-sum distribution that has a value that is the actuarial equivalent of the remaining expected payments under her pension. In an insurance annuity risk transfer, the participant gets an insurance company annuity instead of her pension. In both types of risk transfers, the plan sponsor is able to reduce the size of its pension plan and its pension costs, for example, by reducing its PBGC premiums. A variety of ERISA rules can have an impact on lump-sum risk transfers and insurance annuity risk transfers.

Standard terminations

It is fairly easy for a plan sponsor to terminate a fully funded defined benefit plan (PBGC, 2017b). In general, these “standard terminations” involve purchasing annuities from an insurer, although participants can also be offered lump-sum distributions. A typical standard termination involves numerous steps including: calculating individual participant benefit amounts and payment form options, communicating information to plan participants, and distributing the assets. The whole process typically takes 12 to 18 months (Brickhouse, 2016).

Unless the participant elects otherwise, she will receive an insurance annuity that is equivalent to her pension. The selection of an annuity provider is a fiduciary decision, and the plan sponsor must choose the safest available provider. A key step in any standard termination is providing an individualized notice of plan benefits to each participant. These notices of plan benefits include general information about the plan and the data used to calculate each participant’s benefit. They may also include the plan’s benefit election form. When a lump-sum alternative is offered to a participant, the minimum lump-sum amount must be

determined in accordance with relative valuation rules, and the notice of plan benefits must explain the relative value of the lump sum when compared to the participant's lifetime pension benefit.

Lump-sum risk transfers

In a typical lump-sum risk transfer, the employer amends its defined benefit plan to provide participants with a choice between the lifetime pension benefit promised by the plan and a lump-sum distribution that has an actuarially equivalent present value. Under the minimum funding rules, however, the plan cannot make lump-sum distributions unless the plan remains at least 80 percent funded after the transaction (ERISA § 206(g); IRC § 436(c)).

Historically, plan sponsors usually implemented a lump-sum strategy by offering the lump sum to separated participants, but more recently, plans were also offering lump sums to retirees who were already in pay status. Now, however, IRS guidance prevents plan sponsors from implementing lump-sum risk transfers for retirees in pay status (Notice 2015-49, 2015-30 Internal Revenue Bulletin 79).

All in all, ERISA and the Internal Revenue Code provide a number of protections and disclosures for participants (and beneficiaries) who are offered lump-sum alternatives to their lifetime pension benefits. The following disclosures are currently required in a lump-sum risk transfer:

1. the material features of the optional forms of benefit available under the plan;
2. the right, if any, to defer receipt of the distribution;
3. the consequences of failing to defer;
4. a description of the optional forms available under the plan including: the amount payable in each form, the conditions for eligibility for each form, the relative value of the form compared to the qualified joint and survivor annuity (QJSA), and an explanation of relative value; and
5. an explanation of the ability of the participant to roll over the lump-sum distribution to another tax-qualified retirement plan or individual retirement arrangement, including the tax effects of doing so (the rollover notice) (Newman, 2015).

In addition, plan sponsors and their advisors typically provide additional communication materials.

Insurance annuity risk transfers

In an insurance annuity risk transfer, the plan sponsor replaces the participants' pension benefits with retail annuities. Basically, the plan sponsor purchases a group annuity contract, and the insurer distributes annuity certificates to the covered individuals. Under the minimum funding rules, however, the plan cannot purchase the group annuity unless the plan remains at least 80 percent funded after the transaction (ERISA § 206(g); IRC § 436(c)). As with standard terminations, the selection of an annuity provider is a fiduciary function, and the plan sponsor must choose the safest available provider.

4. The role for annuities and other lifetime income mechanisms

4.1. An overview of the role of annuities

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. These are daunting tasks (Perun, 2010). To have adequate income throughout retirement, individuals have to make good financial choices through their working years and beyond. They 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. Although estimates vary, it seems that relatively few retirees receive income from traditional pensions and annuities. According to one estimate, in 2010, 44 percent of retirees received income from a traditional pension and another 10 percent received income from an annuity (Nyce and Quade, 2012).

It is not altogether clear what the "right" level of annuitization is (Bosworth, Burtless and Alalouf, 2015). Studies do show that annuitization helps reduce poverty in old age and that those retirees who receive lifetime income from annuities or traditional pensions were generally more

satisfied than those without such lifetime income (Panis and Brien, 2015; Orlova, Rutledge and Wu, 2015). All in all, while some individuals with low levels of retirement savings might be better off using their savings for emergencies rather than annuitizing them, most individuals would probably be better off if they annuitized more of their retirement savings.

Unfortunately, people rarely choose to buy annuities voluntarily. The demand for annuities is significantly lower than expected, and this shortfall has come to be known as the “annuity puzzle” (Benartzi, Previtero and Thaler, 2011). 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 (Holzmann, 2015).

4.2. Retail annuities versus actuarially fair annuities

Compared to actuarially fair annuities,⁹ retail annuities can be quite expensive. Indeed, the typical retail annuity has a 12 percent “load” factor due to the combination of administrative expenses and adverse selection (Warshawsky, 2012, p. 66). That is, the typical retail annuity provides benefits that are worth just 88 percent of an actuarially fair annuity. In short, individuals are rarely able to purchase actuarially fair annuities in the retail annuity market.

Another problem is that there is relatively little disclosure of the fees that insurance companies and agents charge for annuities (Hueler, Hogan and Rappaport, 2013). In the end that means that financial advisers and insurance agents selling annuities “can put their own financial interests ahead of the interests of the person they are advising,” and they may be motivated to sell products that will generate bigger fees, perks, or even kickbacks (Office of U.S. Senator Elizabeth Warren, 2015, p. 2).

4.3. The demographics of life expectancy

While lifetime pensions and annuities offer a great way to protect against longevity risk, annuities may be more valuable for some demographic groups than others. In that regard, life expectancy varies with such demographic factors as gender, income, educational level, and race and Hispanic origin.¹⁰ For example, as already mentioned, women tend to live longer than men. It is also well established that people with higher incomes tend to live longer than people with lower incomes (GAO, 2016b, p. 21). Policymakers need to bear in mind that some policies to encourage greater annuitization could have undesirable distributional consequences.

4.4. What can we learn from other countries?

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). For example, in 2012, half of those who accessed their Superannuation Funds took lump sums, and 98 percent of the rest chose phased withdrawal over an annuity. 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).

9. An actuarially fair annuity is one without insurance agent commissions or insurance company reserves, risk-taking, and profits. See also Gong and Webb (2007, p. 1), defining “an actuarially fair annuity as one whose expected return, discounted by an interest rate and annual survival probabilities derived from population mortality tables, equals the premium paid.”

10. See, for example, various sources at National Center for Health Statistics (2017) and the sources cited in Forman (2014, pp. 384–385).

When coupled with the shift towards more lump-sum distributions that we see in the United States, it seems that the international trend favors giving individuals more choices about how to manage their retirement savings, even if those choices result in less annuitization. Still, there is probably a lot that the United States can learn from other countries about how to help Americans get secure streams of lifetime income (GAO, 2013b). For example, the United States can learn from the various strategies that other countries use to increase participants' knowledge and understanding of their spend-down options. Some countries also make it harder for financial advisers to charge high commissions or offer inappropriate investment advice. Many countries also use incentives and withdrawal rules to help encourage annuitization. For example, in Switzerland, some plans use annuities as the default form of distribution, although participants can opt out. Several countries require participants to meet certain minimum retirement income requirements if they want to withdraw all or part of their defined contribution plan assets as a lump sum. Also, while plan sponsors in the United States have a fiduciary obligation to assess the financial stability of the insurance companies that sell annuities to the plans, plan sponsors in many countries have no such obligation. Instead, plan sponsors in those countries can simply rely on insurance regulators and industry standards to oversee and monitor annuity providers.

All in all, the international trend seems to be to give participants access to multiple spend-down options. At the same time, however, many countries are trying to find strategies to increase participants' knowledge and understanding of annuity options, and they are also using withdrawal rules and limits on lump-sum distributions to encourage participants to select those annuity options.

5. Options for reform

5.1. 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 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). A recent proposal would require American employees without a pension plan to contribute 3 percent of pay to new guaranteed retirement accounts that would provide lifetime annuities (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, 2013c; 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). 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, 2015c).¹¹ 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.

There are also a variety of other proposals to expand the current voluntary pension system. For example, both Congress and the Obama Administration recommended amending ERISA 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). The Obama Administration also recommended expanding coverage to allow long-term, part-time workers to participate in existing retirement plans; and it recommended tripling the retirement plan start-up tax credit for small businesses—from the current maximum of \$500 per year for three years to a maximum of \$1,500 per year for four years (U.S. Department of the Treasury, 2016, pp. 134–137, 140–141). Also, many believe that making

11. The U.S. Department of Labor recently issued guidance that will make it easier for state governments to set up state-managed retirement plans for private-sector workers (U.S. Department of Labor, Employee Benefits Security Administration, 2015). Of note, Congress just overturned the U.S. Department of Labor's final regulations on this subject (Daly, 2017).

the \$1,000 retirement saver's tax credit refundable would help encourage low-income workers to save for retirement (Gale, John and Smith, 2012). Finally, the U.S. Government Accountability Office estimates that the elimination of pension eligibility and vesting waiting periods would increase retirement savings by 10 percent overall, and by 15 percent for low-income workers (GAO, 2016a, pp. 36–37).

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. In that regard, high fees can significantly reduce the size of retirement nest eggs (Forman, 2007; Collins, Holden, Duvall and Barone, 2016). The U.S. Department of Labor's new fiduciary conflict-of-interest rule should help. Managing retirement savings is a challenging task, and, as a result, many Americans seek investment advice from financial advisers. Often, however, the compensation that those financial advisers receive can vary depending on the investment products that the savers choose (Office of U.S. Senator Elizabeth Warren, 2015). That opened the door to conflicted advice that could put the rewards for the adviser ahead of the best interests of the savers. That conflicted advice can easily result in lower investment returns (net of fees). For example, a recent study estimated that conflicted advice led to returns that are about one percentage point lower each year, and that, over a 30-year retirement, a retiree receiving such conflicted advice would lose an estimated 12 percent of her savings (Council of Economic Advisors, 2015). Eventually, the new fiduciary conflict-of-interest rule

should result in better advice at lower costs for pension plan participants and IRA holders, and that should translate into higher returns on their retirement savings.

Another way to help retirees get better returns on their retirement savings would be to encourage retirees to keep their savings in their relatively low-cost pension plans, as opposed to rolling their balances over into relatively higher-cost IRAs. Because there are economies of scale, pension plans tend to have much lower fees per participant than IRAs (Forman, 2007). Unfortunately, the vast majority of retirees move their defined-contribution plan savings to IRAs soon after they retire. For example, according to a recent Vanguard study, after five years less than 20 percent of participants remained in their defined contribution plans (Young, 2015). Better financial education could help encourage participants to keep their savings in those low-cost pension plans, and plan sponsors could also be encouraged to make it easier for participants to take partial distributions as needed, rather than lump-sum distributions. Pertinent here, the 2015 ERISA Advisory Council made suggestions for plan sponsor education and a model notice that employers could use to encourage plan participants to keep their retirement savings in their pension plans rather than rolling their retirement savings into IRAs or taking lump-sum distributions (U.S. Department of Labor, Advisory Council on Employee Welfare and Pension Benefit Plans, 2015).

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). Working longer increases retirement savings and reduces the number of years that retirement savings need to cover, thereby increasing annual income when workers actually retire (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 70.¹²

12. For example, consider a worker who reached age 62 in January 2016 and earned the maximum taxable amount under Social Security for every year of her working life. If she claimed her Social Security benefits at 62, she would get a starting benefit of \$2,153 per month, but if she instead waited until she is 65 to start drawing her benefits, she would get \$2,542 per month, and if she waited until age 70, she would get \$3,538 per month—and she could get even more when cost-of-living increases and extra earnings are factored in. See 42 USC § 402(w); Social Security Administration (2017c). In effect, beneficiaries can buy additional annuity protection by delaying retirement. 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 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 (Social Security Administration, 2017b; IRC § 411(a)(8); ERISA § 3(24)). 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. In passing, however, policymakers need to bear in mind that some policies to raise retirement ages may have undesirable distributional consequences.

The federal government could also amend the required minimum distribution rules to make it easier to use retirement savings to buy deferred income annuities. In that regard, new regulations from the IRS have already eased the required minimum distribution rules to allow plan participants to spend up to \$125,000 on deferred income annuities that are “qualifying longevity annuity contracts” (QLACs).¹³ Even better, the Obama Administration recently called for legislation that would completely exempt an individual from the required minimum distribution rules if her tax-favored retirement plan accumulations do not exceed \$100,000 (U.S. Department of the Treasury, 2016, pp. 143–144). All in all, the minimum distribution rules could be reformed to prioritize lifetime income provision over Treasury revenue-collection (Warshawsky, 2015; Brown, 2014).

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 pension withdrawals and loans (Forman and Gordon Mackenzie, 2013; Orlova, Rutledge and Wu, 2015). 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. All in all, a significant

portion of these premature distributions and loans are dissipated before retirement (GAO, 2009a). Accordingly, it could make sense to prohibit premature distributions and loans from defined contribution plans and IRAs. Also, the process for rolling over defined contribution balances can be cumbersome and could be simplified (GAO, 2013a).

Revise the rules that are used to calculate lump-sum distributions

The Treasury and the IRS could also revise the rules that are used to calculate lump-sum distributions (GAO, 2015b). For example, plan sponsors could be required to use the most up-to-date mortality tables for lump-sum calculations (American Academy of Actuaries, 2015b). Plan sponsors could also be required to take into account the value of any subsidies or other supplements provided by the plan. For example, if the plan offers an enhanced early retirement subsidy, revised relative value regulations could require that that subsidy be taken into account when computing the amount of a lump-sum distribution. Finally, the Treasury and the IRS might consider requiring plan sponsors to pay a premium (say 15 percent) on top of the actuarially determined present value (although legislation might be needed before this requirement could be imposed).

At the very least, the relative value notices required by the IRS and any notices of plan benefits required by the PBGC or the U.S. Department of Labor could make plan sponsors clearly disclose the very real reductions in value that occur when a participant elects to take a lump sum in lieu of retaining her lifetime pension benefit. While the present actuarial valuation rules permit plan sponsors to offer lump sums that are based on out-of-date interest rates and mortality tables, the applicable notices could require the prominent disclosure of the “right” interest rates and mortality tables. The notices could also explain how hard it is to invest a lump sum to provide equivalent lifetime income and how difficult it is to use a lump sum to purchase a retail annuity that replicates the participants’ lifetime pension benefit. The model lump-sum risk transfer notice recommended by the 2015 ERISA Advisory Council addresses these concerns, for example by noting that “[a]n annuity purchased in the insurance market will generally provide less income than your plan’s pension” (U.S. Department of Labor, Advisory Council on Employee Welfare and Pension Benefit Plans, 2015, p.35).

13. *Longevity Annuity Contracts*, Treasury Decision 9673, 2014-30 Internal Revenue Bulletin 212.

5.2. Reform the tax treatment of annuities and deferred income annuities

The current tax treatment of annuities has some features that encourage individuals to buy them and some features that do not. On the whole, the deferral of taxation on annuities until benefits are actually received is a very valuable tax benefit, especially when compared to, say, a regular bank account where the interest income is taxed on an annual basis at ordinary income tax rates. This deferral of taxation on annuities (and life insurance) is a \$24 billion per year tax expenditure, and over the years, including this “inside buildup” in taxable income has been a common tax reform proposal (Congressional Budget Office, 2013, pp. 126–127). Perhaps a better approach would be to continue the current exclusion for the inside buildup in annuities, but only for lifetime annuities. This approach—which was suggested by the President’s 2005 Advisory Panel on Federal Tax Reform—would continue to encourage annuities that provide lifetime income but discourage the use of annuities and variable annuities merely for tax avoidance (President’s Advisory Panel on Federal Tax Reform, 2005, p. 123).

The federal government might even 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. In that regard, investments always involve choices, and tax rates can influence those choices. Under current law, annuity (and pension) income is subject to ordinary income tax rates of up to 39.6 percent, however, capital gains and dividends are generally taxed at just of 0, 15, or 20 percent (IRC § 1). Those preferential tax rates for capital gains and dividends can be very attractive, even to investors who would prefer the lifetime income that comes from investing in annuities (or pensions) (Bernstein, 2016). Accordingly, as long as there are preferential tax rates for capital gains and dividends, it might make sense to extend those preferential rates to the income that comes from lifetime annuities and lifetime pensions. 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.

5.3. The government could mandate or encourage annuitization

There are a variety of other ways that the government could promote annuitization. In that regard, however, policymakers need to bear in mind that some policies to mandate or encourage annuitization could have undesirable distributional consequences.

The government could mandate 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). Under this approach, participants in tax-favored plans and IRA holders could be required to annuitize at least a portion of their tax-favored retirement savings—unless they could show that they have adequate lifetime income streams from other sources.

The government could require that pension plans offer annuities as an investment and/or distribution option

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 also encourage pension plans to offer beneficiaries more flexibility, for example, by offering partial annuitization options and not just all-or-nothing annuitization choices (Beshears, Choi, Laibson, Madrian and Zeldes, 2014).¹⁴ The government might even require plans to default participants into annuities or trial annuities, unless plan participants affirmatively elect otherwise (Mackenzie, 2010, pp. 200–203; Iwry and Turner, 2009; Gale, Iwry, John and Walker, 2008).

The government could sell or guarantee annuities

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 62,¹⁵ but the government might also let individuals and couples buy a limited amount of explicit inflation-adjusted lifetime annuities—perhaps

14. Given the voluntary nature of the American pension system, however, increased annuitization requirements might increase the costs of administration and discourage employers from offering plans.

15. See note 12 above and accompanying text.

enough to keep them out of poverty throughout their retirement years.¹⁶ Alternatively, the federal government could guarantee annuities sold by private companies.

The government could make it easier for plan sponsors to offer annuities and deferred income annuities

In any event, the government could make it easier for plan sponsors to offer annuities and deferred income annuities without fear of breaching their fiduciary duties. As already mentioned, defined contribution plan sponsors that offer annuities have fiduciary responsibilities with respect to the selection and monitoring of annuity providers. Plan sponsors can avoid those fiduciary duties if they instead only make lump-sum distributions and leave it to the terminating employees to buy their own annuities directly (in after-tax dollars) or, alternatively, indirectly through a rollover IRA or Roth IRA. In general, it would be good to reduce these regulatory barriers.

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, 2013b, pp. 37–39) and it could probably work in the United States, as well. 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. Alternatively, the U.S. Department of Labor could at least host a website that would serve as a clearing house of information about annuity providers and annuity products.

Also, better guidance on the process of selecting qualifying longevity annuity contracts (QLACs) and other deferred income annuities would increase their utilization. For that matter, it could make sense for the government to “jump-start” the market for deferred income annuities by offering them in the federal government's Thrift Savings defined contribution plan (Abraham and Harris, 2016).

The government could promote education about lifetime income options

Government efforts

At the very least, the government could promote better financial education about annuities and other lifetime income options. In that regard, one way to encourage

retirees to choose annuities and other forms of lifetime income is to promote financial education that frames the retirement decision in terms of lifetime consumption rather than in investment-oriented language that simply encourages individuals to accumulate large lump sums (Beshears, Choi, Laibson, Madrian and Zeldes, 2014). Better information about replacement rates would also help workers better understand how to convert their account balances into lifetime income streams (GAO, 2015b).

Pertinent here, 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 calculators that could be used by participants to evaluate the choice between lifetime pension benefits and lump sums.

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). At the very least, the U.S. Department of Labor could link to the very simple life expectancy calculator that the Social Security Administration hosts on its website (Social Security Administration, 2017a).

Plan sponsors

Plan sponsors are not required to provide retirement planning advice, and concerns about fiduciary liability often keep them from doing so (American Academy of Actuaries, 2015b). Even when employers provide financial education and retirement planning advice, they may not spend much effort explaining annuities and other lifetime income options (International Foundation of Employee Benefit Plans, 2016). The costs of providing such retirement planning advice may also be a problem, particularly for smaller employers. Somehow, the government could make it easy for plan sponsors to provide such financial education and retirement planning advice. The U.S. Department of Labor is already planning to require that the periodic benefit statements

16. 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).

provided to defined contribution plans participants about their account balances also show how those account balances would be expressed as estimated streams of payments (U.S. Department of Labor, Employee Benefits Security Administration, 2013a).

5.4. 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. A more uniform standard, or even a federal guaranty fund, would be preferable to the current system. All in all, these kinds of improvements in annuity markets would make annuities more attractive to plan sponsors and to individual purchasers.

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.

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.¹⁷ 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 modify ERISA 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).

5.5. Other ideas

At some point the government also needs to solve the underfunding problems of both Social Security and the PBGC (American Academy of Actuaries, 2015a).

17. For example, 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; 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).

6. 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 *Research Dialogue* showed how changes in the U.S. laws and regulations governing pensions and

annuities could help promote secure, lifetime income policies. More specifically, this *Research Dialogue* showed how laws governing annuities could be changed to make voluntary annuitization more attractive and how the laws regulating pensions could be changed to incentivize pension plan sponsors to offer more annuity options and to encourage employees to elect those options.

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