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Improving the Defined Contribution System:

The U.S. Can Learn from Other Countries' Approaches to Helping Retirees Convert Their Savings Into Lifetime Income

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Executive Summary

Over the past 30 years, the U.S. retirement system has shifted from a defined benefit, or DB, system to a defined contribution, or DC, system. As the DC system matures, millions of Americans will need to figure out how to convert their hard-earned savings into lifetime income. Although U.S. public policy nudges people to save for retirement by offering tax breaks for saving and tax penalties for early withdrawals, the United States lags other countries in encouraging retirees to make decisions that will help their savings last as long as they live. On the other hand, the U.S. has a strong universal pension system, although American workers could better optimize how they use it.

Our research finds that:

- **The U.S. has comparatively few mechanisms to protect retirees from themselves.** Many countries impose limits on withdrawals from DC accounts, or at least offer educational material to discourage retirees from spending their nest eggs too quickly. In contrast, the U.S. has almost no mechanism to encourage or require retirees to plan for a long retirement.
- **The U.S. could learn from countries that promote annuities.** Annuities can provide an important source of protection for retirees against the risk that they may outlive their savings. However, unlike some countries we studied, the U.S. does not have policies in place that make annuities an appealing option for retirees.
- **The U.S. Social Security system is generous compared to other developed countries' universal pension plans.** Although the U.S. does not have a strong system for helping retirees convert their savings into lifetime income, it provides a very strong foundation of income with Social Security. However, encouraging more retirees to delay claiming their Social Security benefits could make it an even stronger system.
- **The retirement system is more fragmented in the U.S. than in other countries.** By having parallel employer-sponsored and individual retirement account savings tracks, the U.S. faces challenges in disseminating important information to retirees and changing their behavior.

Introduction

As the U.S. retirement system matures, retirees need to consider the best way to allocate their retirement savings to ensure predictable, secure retirement income. For their part, U.S. policymakers need to consider the best ways to encourage these retirees to allocate and draw down their assets to ensure that they last through retirement. Other countries have very different approaches than the U.S., and these approaches may offer lessons to both U.S. policymakers and retirees. Key factors considered in the scope of this paper are the structure and generosity of countries' universal pension systems; restrictions and incentives retirees face as they determine how to allocate and draw down their assets; and the kinds of private-sector drawdown advice and product offerings that countries encourage (or discourage) through regulation. We examined the retirement systems in Australia, Canada, Chile, the United Kingdom, Singapore, and Switzerland to see what lessons U.S. policymakers could learn from their approaches.

The need to ensure people make good decisions in retirement is more acute than it once was because DC plans have overtaken DB (or traditional pension) plans as the dominant type of retirement plan. In 1975 the U.S. had 33 million participants in private DB plans and just 11 million in DC plans. By 2013, DC plans had swelled to 92.5 million participants, while private DB plans covered just 39 million participants, according to the U.S. Department of Labor. The department's statistics further indicate that 13% of DB participants were in "frozen plans," in which they could not accrue additional benefits. The only sector in the American economy with continued DB availability was the public sector, where about 80% of workers continued to have access to a traditional DB plan (Munnell, Aubry, and Cafarelli, 2014). Unlike DB plans, DC plans require participants to save for their own retirement (often with an employer match); and, critically, require participants to determine how to convert that income into a lifetime retirement stream.

When retirees determine how to ensure their DC assets last a lifetime, they face trade-offs between taking on risks and generating enough return to reach their goals. The key risks a retiree faces are investment risk, the risk that his assets will fall in value when he needs them; longevity risk, the risk he will outlive his assets; and inflation risk, the risk that his assets will lose purchasing power over time. Retirees' goals obviously include generating sufficient income to maintain their standard of living, and may also include desires to leave a bequest to descendants, maintain liquidity for unexpected expenses, or minimize the volatility of income in retirement.

Although retirees must consider retirement risks as they allocate their assets, every country in this study (except Singapore) provides a backstop by providing at least some level of universal retirement benefits. However, these universal benefits vary enormously between countries. In some countries such as Chile, universal benefits are just a minimum level of income, while in countries such as the U.S., the U.K., and Canada, universal benefits make up a substantial portion of many peoples' retirement incomes.

Countries also vary in the extent to which they encourage retirees to manage their risks by buying annuities. (In this paper the term "annuity" means a single-premium immediate annuity, which provides a stream of income for life in exchange for a lump sum premium, thus helping retirees address investment and longevity risk in retirement.) There is a wide consensus in the academic literature that most retirees should annuitize a large portion of their assets to avoid the risk of running out of money in retirement. Yaari (1965) argued that retirees with no desire to leave a bequest should annuitize all their assets to maximize their utility. Nonetheless, in much of the world, most retirees eschew annuities, a phenomenon known as the "annuity puzzle," after a term coined by Modigliani (1986).

Of course, there are downsides to buying an annuity. After all, when a retiree purchases a fixed annuity, there is no chance of enjoying the potential gains of investing in riskier assets.[1] In addition, for retirees with insufficient assets to purchase an annuity to guarantee their desired standard of living, an annuity may not provide much economic utility since it locks in an inadequate income stream. Finally, retirees who annuitize fully will lose access to liquid assets they may need for an unexpected expense, as annuitizing is irrevocable in many cases. In fact, Lockwood (2012) argues that observed under-annuitization is mostly explained by bequest motives. Of course, retirees can annuitize only a portion of their assets—and this may well be the most efficient way to annuitize to preserve income and retirement and leave a bequest. However, finding the right portion to annuitize may require high-quality advice from a financial advisor.

Retirees who choose not to annuitize need a way to convert their savings into a stream of income. Usually, people use some form of "programmed withdrawals," which are a series of payments from a retirement account that follow some rules about how much to withdraw. For example, a programmed withdrawal may be as simple as calculating 4% of a retiree's assets at retirement, and distributing this amount as a monthly payment, with annual increases for inflation. Programmed withdrawals could include more-complex methodologies such as increasing or decreasing the withdrawal based on investment returns (Blanchett and Frank 2009).

1 Variable annuities, which are not covered in this paper, allow people to benefit from market upsides with riders that protect against risks.

The U.S. Has Comparatively Few Mechanisms to Protect Retirees From Themselves

All the countries we looked at employ mechanisms to prevent, or at least discourage, retirees from spending their DC balances too quickly in retirement. Four of the six countries we studied limit the amount a retiree can withdraw from their retirement savings every year. Only Australia and the U.K. follow the U.S. model and allow retirees unrestricted freedom to take lump sums, although both provide education to discourage retirees from taking these lump sums, as shown in Exhibit 1.

Exhibit 1: Mechanisms to Protect Retirees From Themselves

Country	Limits on Withdrawals?	Required Annuitization?
U.S.	None	No
Australia	None	No
Chile	Yes	Incentivized*
Canada	Yes	No
Switzerland	Yes	Yes
U.K.	None	No
Singapore	Yes	Yes

Source: Organisation for Economic Co-operation and Development, OECD (2015), Pensions at a Glance 2015: OECD and G20 Indicators, OECD Publishing, Paris.

*See next section for more details.

In contrast, the only disincentives for U.S. retirees to take a lump sum are that they may then incur a higher marginal tax rate than they would if they took withdrawals slowly over time; and, after taking the lump sum, their retirement money will no longer grow tax-free. Neither of these disadvantages is likely to be clear to U.S. retirees, as there is no explicit penalty for withdrawing money once a person attains age 59 1/2; instead, the increase in taxes is just a function of having a higher income. Furthermore, even if retirees understand this disincentive to take a lump sum, it only applies to traditional DC balances, as there is no tax event for retirement distributions from Roth-type accounts.

One way other countries restrict retirees from spending their DC balances too quickly is by limiting the amount that can be withdrawn. For example, Canadian provinces generally force retirees to take programmed withdrawals from their accounts each year to help ensure that the money lasts until the retiree is age 90, although partial lump sums are available in some provinces (GAO 2013). As another example, in Switzerland's universal DC accumulation plan (the Occupational Retirement, Survivors' and Disability Pension Plans) retirees may not withdraw more than 25% of their assets—the rest must be annuitized.[2]

2 Rules accessed from the Swiss government's informational website on July 21, 2016, please see https://www.ch.ch/en/preparing-retirement/.

To ensure retirees do not draw down their assets too quickly, some countries use a more complex approach. They employ a formula to ensure that after a withdrawal, the remaining funds can still be converted into a minimum standard of living through retirement. For example, Singapore allows retirees to withdraw money in excess of SGD 80,500 (about $59,765 in U.S. dollars), after using the first SGD 80,500 to fund an annuity commencing at age 65. (The minimum amount Singapore's retirees must annuitize is scheduled to rise to SGD 90,500 or about $66,795.[3]) Chile similarly allows retirees to withdraw their money, as long as the remaining balance is sufficient to fund a minimum level of consumption in retirement, based on a formula that accounts for mortality and likely investment returns. In Chile's case, retirees who do not have sufficient assets to meet a minimum standard of living are also eligible for a means-tested state pension in addition to a structured drawdown of the assets they do have.

Unlike countries that restrict the amount of money a retiree can withdraw, the U.S. alone requires retirees to take minimum distributions from their tax-privileged retirement accounts starting at age 70 1/2.[4] These required minimum distributions increase each year, and are designed to prevent retirees from using DC accounts as a permanent tax shield. For example, a 70-year-old is required to take a distribution of about 3.65% of his assets, which rises to about 5.35% by the time he is 80 years old, and to 8.77% by the time he is 90. To the extent that these required minimum distributions signal to retirees that these are the amounts they should withdraw, they may well help people preserve assets (Blanchett 2013). However, these rules do not prevent people from taking larger distributions than are sustainable throughout their likely lifespan.

Similar to the U.S., Australia and the U.K. (after recent reforms) do not have a direct restriction on withdrawing assets, but they do provide educational materials to steer retirees toward preserving assets. For example, the U.K. has set up the Pensions Advisory Service, which offers free counseling to retirees and near-retirees, helps retirees set up structured withdrawals and buy annuity products with their retirement savings, and explains the negative tax implications of taking too large a lump sum. Australia's Securities and Investments Commission similarly puts out literature to help people understand their options at retirement, and states that lump sums may lead to "splurge risk" where retirees may be tempted to overspend or live beyond their means until the money runs out, and that spending from a lump sum "will reduce your retirement income in the future." Nonetheless, in Australia and the U.K. there are few controls to prevent retirees from taking lump sums. The new rules in the U.K. are too new to draw conclusions, but in Australia about half of retirees take lump sums, according to the Australian Prudential Regulation Authority.

3 Singapore also has additional yearly withdrawal limits once retirees have sufficient assets to withdraw funds. The full rules can be found at https://www.cpf.gov.sg/members/aboutus/about-us-info/cpf-overview.

4 There are no required minimum distributions for Roth IRAs or Roth 401(k)s until the death of the participant.

The U.S. Could Learn From Other Countries That Promote Annuities

In addition to restricting withdrawals, Chile, Switzerland, and Singapore encourage retirees to annuitize their retirement assets in various ways. Singapore achieves 100% annuitization by simply requiring retirees with at least SGD 80,500 (about $59,765) in their accounts at retirement to annuitize with the government-run annuity called Central Provident Fund (CPF) Life, although payments from CPF are not fixed and may be adjusted by the government as interest and mortality assumptions change. Of course, this required annuity allocation is quite low, and currently the Singaporean government estimates that it will provide only about SGD 335 in monthly income for a man and about SGD 310 for a woman.[5] Nonetheless, voluntary annuitization rates in excess of the minimum in Singapore are quite high, in part because retirees' retirement accounts are defaulted into CPF Life.

The Chilean government incentivizes annuities, particularly for higher-wealth retirees, by offering a government guarantee on annuities and by using regulation to make structured withdrawals unattractive. Indeed, as James, Martinez, and Iglesias (2006) demonstrate, a structured withdrawal option in Chile results in a declining pattern of retirement income while an annuity provides a level payment. This approach appears to work effectively, as they found Chileans annuitize at very high rates, with more than 60% of retirees choosing to annuitize. (Exhibit 2 illustrates how the Chilean approach works in a general sense.) Retirees who choose not to annuitize are often lower-income, and are better off collecting a means-tested public pension and keeping their limited retirement accounts in their own control with the possibility of leaving a bequest. Recent reforms may increase annuitization among lower-wealth retirees as these reforms change incentives for lower-earners vis-a-vis the public solidarity pension.

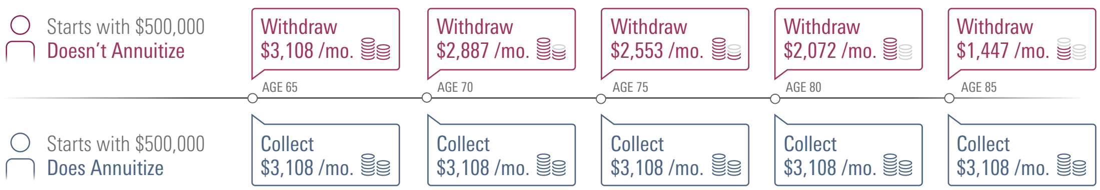
The structured withdrawal option in Chile results in a declining pattern of retirement income because it accounts for increasing life expectancy every year.[6] In other words, Chile forces retirees to see the value of longevity insurance by reducing their withdrawal rate for each year they live because of increasing life expectancy—a decline that a retiree would not see if he pooled his mortality risk with other retirees in an annuity product. For example, if a 70-year-old retiree's median life expectancy were 84, his withdrawal amount would be based on this life expectancy, accounting for a probability of dying in each subsequent year. If he lived to be 75, his life expectancy would increase to more than 85, increasing the amount of time his remaining funds needed to last, and reducing his maximum withdrawals. This stands in sharp contrast to the U.S. approach where required minimum distributions are an almost mirror image of the Chilean system: They go up rather than down, because the U.S. approach is to prevent retirees from using their accounts

5 Author's calculation based on data at https://www.cpf.gov.sg/.

6 Note that mathematically, the expected liability at time t with i investment returns in the previous year is $a_{t-1}*(1+i)-1$. The mortality assumption is built into the annuity function, symbolized with an a_t. The difference between the expected liability is the actual, new cost of an annuity based on future contingent mortality and the function above or $a_t-(a_{t-1}*(1+i)-1)$, which is always greater than zero if the person did not die. This means that if a retiree lives a year longer, he or she must accept a lower payment because of the actuarial "mortality loss."

as a permanent tax shield. In sum, Chilean retirees with the means to do so have a strong incentive to annuitize, because they can then guarantee a retirement income with annuities that they cannot guarantee with structured withdrawals given Chile's requirements—an incentive that does not exist in the U.S.

Exhibit 2: How the Chilean Model Encourages Annuitizing



Note: If all assumptions are met, there will be a declining pattern of withdrawals.

Finally, Switzerland also requires retirees to annuitize 75% of their assets from their Occupational Retirement, Survivors' and Disability Pension Plans account, which is a universally available DC approach. Researchers generally find, perhaps for cultural reasons or because of the default annuity option, that the Swiss voluntarily annuitize more than 75% of their assets (GAO 2014). The payout rate for Swiss annuities is currently fixed at a relatively high 6.8% for the Occupational Retirement, Survivors' and Disability Pension Plans, which may help explain why annuities are popular. Cultural attitudes toward risk may also explain why retirees in Switzerland are inclined to annuitize.

These countries are somewhat anomalous, as retirees around the world often do not like to annuitize. Responding to popular pressure, the U.K. has recently relaxed regulations that required retirees to annuitize retirement assets. Similarly, Canadian provinces used mandatory annuities in the 1990s as the primary drawdown option, but have shifted away from this requirement, and annuitization rates in Canada are now quite low. In fact, worldwide take-up rates for annuities are generally quite low (Warshawsky 2013). Australia also has low levels of annuitization, despite exempting certain kinds of annuities from asset tests for means-tested retirement income programs, which should incentivize annuities.

Although there are many factors in considering how much to annuitize (bequest motives, a subjective view of one's own health, tolerance for uneven income in retirement), the most important from a retirement-security perspective is minimizing the probability of running out of money in retirement. This is particularly true from a policy perspective, because governments want retired citizens to be a stabilizing force on the economy, not a destabilizing force when markets decline. Probabilistic retirement models reveal that the most important factor in determining the optimal amount to annuitize, to minimize the probability of running out of money in retirement, is the percentage of income required from a retiree's retirement savings. As shown in Exhibit 3, the lower the percentage of desired income as it relates to retirement wealth (or the less someone needs to draw from their retirement assets), the less someone should annuitize because they face less longevity and investment risk. However, people who want to live on more than about 2% of their assets in yearly income should annuitize at least some of their assets to avoid "failing" in retirement by running out of money prior to their death. (For this analysis I drew on the approach outlined by Milevsky and Robinson 2005.) Country labels in Exhibit 3 orient readers as to typical practice of the percentage.

Exhibit 3: Percentage to Annuitize to Minimize Probability of Running Out of Money at Different Percentages of Required Income to Retirement Wealth

Note: If all assumptions are met, there will be a declining pattern of withdrawals. of retirement assets people annuitize in these countries.

One lesson from Exhibit 3 is that countries that aggressively require or encourage annuitization may be over-allocating their retirees' assets to annuity products, depending on the retirees' actual income needs. For example, although more than 60% of Chileans annuitize all of their retirement assets, this is likely optimal only for retirees with relatively low retirement-income-to-wealth goals. Similarly, Switzerland requires retirees to annuitize at least 75% of their second-pillar DC accounts, but this may not be optimal for each retiree. Nonetheless, from a public policy perspective, ensuring that retirees do not run out of money and become a destabilizing force on the economy is perfectly sensible. Retirees with guaranteed income are likely to keep spending during economic downturns, whereas retirees who are ruined by risky investments may exacerbate an economic downturn.

Countries that encourage (or force) annuitization have decided that retirees are best protected from themselves by being forced to insure for longevity risk—the chance that they might outlive their assets—and investment risk—the risk that they might lose money in their investments. They also have decided to protect people from the impulse to spend their money quickly, and end up destitute later in retirement. However, these countries also potentially deny people the option that might make them happiest (or maximize their utility) to protect people from themselves.

The U.S. Social Security System Is Generous

The U.S. fails to encourage retirees to buy annuities, but it offers a comparatively generous universal retirement system in Social Security, which helps make up for this lack of guaranteed income from annuities. In terms of the absolute replacement value, according to the Organisation for Economic Co-operation and Development, U.S. Social Security replacement rates were about 35%, higher than the universal systems of any other country in the scope of this paper. (Other groups estimate that the U.S. replacement rate is somewhat higher, because of differing methodologies.) Furthermore, because Social Security is based on earnings but has a progressive benefit structure, replacement rates can range as high as 90%, although they can be much lower for higher-income workers. For example, Social Security would provide 35% wage replacement for a worker with an average income of $40,000 yearly, but just 28% for a worker with an average income of $100,000.[7] Further, the U.S. Social Security system is not means-tested, so it is truly universal, and it provides a floor benefit of around $700 per month to ensure that everyone gets a basic income in retirement, even workers who had low earnings during their working lives. In sum, the U.S. public, universal retirement system is designed to provide a substantial amount of most retirees' retirement income, a model followed by Canada, Switzerland, and the U.K. in somewhat less generous systems.

In contrast, some countries have universal retirement systems that are designed to only be a backup. For example, Australia and Chile means-test their public retirement systems, and they are designed to provide only a minimal level of benefit to people who have run out of money or were unable to save. This is particularly true for the Chilean system, which provides very small amounts of money (a floor of about USD 130 monthly as of December 2014 according to the OECD). Australia's system, which is means-tested but has a much longer phase-out than the Chilean system (even after reforms in 2008), provides some level of income to about three-fourths of retirees. However, it is still much less generous for middle-income retirees than the U.S.-style system according to Australia's Department of Families, Housing, Community Services and Indigenous Affairs.

Finally, although the U.S. does not offer a government-sponsored or a government-backed annuity, as is true in Chile, Switzerland, and Singapore, the Social Security system offers a de facto way to buy an inflation-protected annuity at an extremely reduced price by delaying Social Security benefits. Indeed, U.S. retirees who can afford to live on other income until they turn 70 can increase their Social Security payment by 8% per year. No other country offers as generous an adjustment for delaying claims except for the U.K.

7 In these examples, we assume the worker would retire at full retirement age. By average wage, we mean the average wage after applying the wage- indexing factors Social Security uses.

Exhibit 3: Generosity of Different Public Pension Benefits

Country	Means-Tested?	"Buy" Annuity?	Earnings-Based?	Replacement Rate[1]	Annual Value of Delay
U.S.	Only for Floor	Yes	Yes	35%[2]	8%
Australia	Yes	No	No	13.5	None
Chile	Yes	No	No	0[3]	None
Canada	Only for Floor	Yes	Yes	32.6	7.2% to 8.4%
Switzerland	Only for Floor	Yes	Yes	23.3	5.2%-5.63%
U.K.	No	Yes	Phasing Out	29.7	10.4%
Singapore	Yes	No	No	0	None

Source: Organisation for Economic Co-operation and Development, OECD (2015), *Pensions at a Glance 2015: OECD and G20 Indicators*, OECD Publishing, Paris.

1 These replacement rates are for someone with the average salary in each country.

2 Some groups, such as the National Academy of Social Insurance, estimate the replacement rate is about 40%. In this paper, we use the OECD definitions for consistency across countries.

3 This is zero because mean-income people would generally have enough income in retirement to be ineligible for Chile's solidarity pension. For salaries of half the mean, the replacement rate is 6.8%.

In fact, "buying" an annuity by delaying Social Security is currently a very attractive option, costing about 60% of an annuity on the private market—at least given the current interest rate environment. The cost of an annuity is the present value of the primary insurance amount from age 66 to age 70 (or 48 months), and the value is the increase in the benefit at age 70 discounted for four years. Using the Treasury yield curve as a proxy for the risk-free interest rate an individual could plausibly achieve, we find that delaying Social Security results in an annuity of about 7.83% of the forgone payments per year. In contrast, the cheapest inflation-adjusted annuity on the market right now would pay just 4.84% in income right now—38% less in income.[8]

Therefore, many U.S. retirees—except for the truly frugal who wish to live on a very low percentage of their wealth—could benefit by delaying their Social Security benefit and effectively "buying" an annuity of first resort from the government. This is particularly true for women and upper-income workers because Social Security's formula does not account for these retirees' higher life expectancy. (Desired income is defined in this context to mean additional needed income over and above any pension plan benefits or public retirement benefits.) However, for people with lower income needs relative to their wealth (a high wealth-to-income ratio), it may well be wise to annuitize less than their full retirement income, because they are have less chance of longevity or investment risk, given that they have enough money to weather a period of unusually low investment returns.

8 CANNEX; March 8, 2016.

As discussed in the previous section, the U.S. almost certainly has too little annuitization, so U.S. policymakers could improve retirement security by more aggressively encouraging retirees to delay claiming Social Security benefits. However, encouraging retirees to actually delay claiming could be difficult. Despite the fact that delaying Social Security to "buy" an inflation-protected annuity is much cheaper than buying a regular annuity, most people don't do so. There are many behavioral reasons that have been advanced on this topic, and the one promising theory is that framing the value of delaying benefits as insurance, rather than as a choice that requires living a certain amount of time to "break even," can encourage people to choose to delay claiming Social Security (Brown, Kapteyn, and Mitchell 2011).

The Retirement System Is More Fragmented in the U.S. Than in Other Countries

The U.S. retirement system is highly fragmented by its very design, which places a strong emphasis on the linkage between employers and retirement plans. In short, since many Americans will have retirement assets spread across multiple accounts, and since the system depends on the actions of every employer, U.S. workers are less likely to get consistent and simple information on how to convert their savings into retirement income compared with workers in other countries. For example, many DC plans do not anticipate (or want) employees to leave their assets in their employer-sponsored DC retirement accounts during retirement, so many employers do not offer programmed withdrawals, much less in-plan annuities (GAO 2011). Employers also have a good deal of control over the information they share with their workers about their drawdown options, and whether they will offer a drawdown solution within their plan to help workers convert their money into lifetime income, if they wish to influence their employees' retirement choices.

Exhibit 4: Fragmentation of Various Retirement Systems

Country	Employer-Based or Universal and Portable?	Efforts to Help Retirees Consolidate?
U.S.	Employer-Based	No
Australia	Combination	Yes
Chile	Universal and Portable	Not Necessary
Canada	Employer-Based	Yes*
Switzerland	Universal and Portable**	Not Necessary
U.K.	Employer-Based	Yes
Singapore	Universal and Portable	Not Necessary

Source: Organisation for Economic Co-operation and Development, OECD. 2015. Pensions at a Glance 2015: OECD and G20 Indicators. http://dx.doi.org/10.1787/pension_glance-2015-en

* Canadian provinces generally require plans to offer specific lifetime income options, reducing the inherent problems with fragmentation.

**Switzerland's Occupational Retirement, Survivors' and Disability Pension plan is universal and portable, while workers may also have employer-sponsored pension plans.

A further complication is that in addition to employer-sponsored plans, many workers also save through IRAs. In fact, there may now be more money in IRAs than in employer-sponsored DC plans, mostly due to rollovers from the employer-sponsored system (Munnell 2013). Individual retirement accounts are completely self-directed: Individuals make all investment decisions, and decide when and how much money to withdraw. (Employees can also roll assets over from employer-sponsored accounts into IRAs, which helps explain why they now may have more assets than DC accounts.) This additional "track" of the U.S. retirement system makes it even more difficult for a single entity to provide good advice on how to make retirement income last, particularly since withdrawal rules are not aligned between IRAs and employer-sponsored DC plans. This is in sharp contrast to other countries, which have much stronger control of when and how workers receive guidance and options for drawing down their income.

Countries like Switzerland, Singapore and Chile have universal DC systems, which are fully portable throughout a person's career. This means that at retirement it is much easier for the government to offer clear guidance to convert retirement savings into lifetime income. (In addition to a universal DC plan, Swiss workers also often have employer-sponsored pension plans, which are often cash-balance, to supplement their universal pension and DC plans.) Similarly, in Chile, the government is able to communicate consistent information to every retiree about nationally available, government-regulated annuities to help them determine whether an annuity would help them meet their needs in retirement. Singapore shifts money from various mandatory savings accounts at age 55 into a retirement account, and then disseminates information to every near-retiree about their options. (As discussed, Singapore forces people to annuitize some of their assets to ensure a minimum income in retirement.) Switzerland has a single repository of information for all retirees in the mandatory Occupational Retirement, Survivors' and Disability Pension Plans that is available online and clearly spells out plan options.

By delinking retirement accounts from employers, these countries have an easier time providing universal and consistent guidance when they attain retirement. This stands in contrast to the U.S. system where guidance comes from employers (or financial advisors, for most IRAs) and will vary depending on what the employer offers in its plan or the quality and perspective of the IRA advisor. In addition, communication about the annuity market would be difficult in the U.S. because different plans offer different in-plan annuity options. (And, in part because of liability concerns, few U.S. employers offer in-plan income options.)

Like the U.S., Canada, Australia, and the U.K. are more fragmented since their retirement systems are linked directly to employers; however, all three have taken steps to reduce fragmentation and provide consistent advice on options when workers retire. For example, Australia and the U.K. both have government- run services to track down dormant DC accounts. Australia also facilitates rolling over account balances by maintaining a government portal for this purpose. Furthermore, when Australians change jobs, they can continue to contribute to their old fund if they so choose, which further helps reduce fragmentation. In contrast, in the U.S., each employer sets rules for how — or if — they will accept rollovers from other retirement accounts. As discussed earlier, the U.K. and Australia also have a central repository of guidance from The Pension Advisory Service and the Australian Securities and Investments Commission respectively, which outlines the options retirees have.

In Canada, provinces regulate most DC pensions, except for ones that are run by national companies. Canada is similar to the U.S. in the degree to which retirement assets can be fragmented, with an important exception in that most retirees are steered into programmed withdrawals. For example, Ontario (the most populous Canadian province) requires retirees to choose between a life annuity or moving money into a "Life Income Fund." This type of fund is regulated by the provincial government and is designed to generate an income stream for life, and has limits on the maximum (and minimum) withdrawals. If fund investors do make an election, then their plan must default them into an annuity. In this way, Ontario helps retirees ensure their savings will likely last their lifetime by limiting retirees' choices; most other Canadian provinces take a similar approach.

Conclusions

The U.S. retirement system is ineffective at helping retirees convert their savings into lifetime income because it has few mechanisms to protect retirees from spending their income too quickly in retirement; no policy mechanisms to help people protect against longevity risk; and a highly fragmented system which makes it difficult to communicate options to retirees. On the positive side, the U.S. Social Security system is very strong, particularly for lower-income workers, and it provides a universal annuity of last resort for workers who delay claiming their benefits.

We suggest three policy changes that could improve retirement security:

❶ First, U.S. policymakers should help retirees better align their Social Security claiming decisions with their drawdown strategy.

- As a first step, the Social Security Administration should make it easy to access electronic wage records, which are essential to calculating a retiree's likely Social Security benefit. At present, retirees need to establish an account with Social Security and download an electronic wage record in a machine-readable XML format, which they then upload to a software package. As more and more Americans use electronic planning tools to link their bank accounts, retirement accounts, and credit cards in applications, people should also have easy, online access to their Social Security benefits records, since it is the most important retirement asset many people have. All too often, retirement income planners treat Social Security benefits as an afterthought rather than as a critical source of retirement income.

- As a second step, the Department of Labor could clarify aspects of its new Conflict of Interest Rule (also called the Fiduciary Rule), that financial planners should consider Social Security as the annuity of first resort when making recommendations to clients, at least during periods when the cost of delaying Social Security is much lower than purchasing a comparable inflation-protected annuity. Of course, to do this, planners will need the easy, machine-readable access to Social Security records that we recommend above.

❷ Second, although U.S. regulators (The Department of Labor and Department of Treasury) have tried to encourage employers to offer lifetime income options in their retirement plans, few employers offer annuities and few retirees take them. It may be time to improve the safe-harbor guidance (29 CFR 2550.404a-4) on sponsoring in-plan annuities, perhaps by making it explicitly clear that annuity providers with particular credit ratings meet financial soundness requirements, as current safe-harbor guidance is vague.

❸ Third, Congress should consider legislation to signal that retirees shouldn't spend too much of their money all at once. One approach would be to add maximum allowable distributions, as is done in some Canadian provinces and in Chile. An approach like Chile's, which explicitly forces people to accept less money every year if they have not self-insured for longevity risk, could be particularly powerful. In the American context, a tax penalty for excess distributions might be broadly acceptable, especially if it were phased in over time, because people are used to a 10% penalty on early distributions; such an approach would preserve liquidity for people who really needed or wanted a lump sum. Since the current required minimum distribution rules are the same for employer-sponsored DC plans and IRAs (at least for retirees in non-Roth accounts) and the regulatory regime works even if people have money in multiple accounts, it could be adjusted without attempting to cope with the fragmentation in the U.S. system. It is true that such a change could potentially reduce tax collections as some retirees simply deferred taking distributions and paying taxes, but it might be worth such a loss to alert retirees that they cannot spend too quickly, and that annuities can help them cope with longevity risk.

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