

Affordable Lifetime Pension Income for a Better Tomorrow

How we can address the \$1.5 trillion decumulation disconnect in the Canadian retirement income system with Dynamic Pension pools

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Report In Brief

Over the last several decades, there has been a global decline in traditional workplace defined benefit (DB) pension plans that provide lifetime pension income for workers after retirement. In Canada, workplace DB pension incomes are now out of reach for nine out of 10 private sector employees.

In response, Canadians have been encouraged to save more, particularly in registered retirement savings plans (RRSPs) and defined contribution (DC) pension plans. And this push has been met with some success, as these individual retirement savings accounts now hold more than \$1.5 trillion nationwide. However, what is sorely lacking is support in delivering what Canadians need most in retirement: reliable lifetime income to help replace their employment wages.

As Canadians contemplate how to turn their savings into income, they are trapped between two extreme and inadequate decumulation options: buy a life annuity from an insurance company or move their accumulated savings into a personal retirement income fund (i.e., Registered Retirement Income Fund (RRIF), Life Income Fund (LIF) and Locked-in Retirement Income Fund (LRIF)), where they must individually manage the fund's investment and drawdown. Life annuities have traditionally been very unpopular and remain so today. Nearly all Canadians rely on the second option instead, attempting to finance their income needs throughout retirement without running out of money.

Considering that retirement is expected to last several decades—with unpredictable financial markets and changing personal circumstances—turning accumulated lifetime savings into lifetime income is more than just a challenge. It's a tremendously difficult task that threatens the financial and emotional security of a growing portion of the Canadian population.

Ageing Canadians who are concerned about having sufficient income in later life may decide to follow the mandated minimum RRIF withdrawal schedule and withdraw the lowest possible amount from their RRIFs. Yet even when taking the minimum required amount, RRIF withdrawals are designed to lead to precipitously declining payouts after age 95. There is a one-in-five probability that a 65-year-old Canadian will live beyond that age, so running out of money is a realistic risk that burdens Canadians throughout their retirement. With that in mind, it's not surprising that running out of savings is a significant fear among older adults (Angus Reid Institute, 2015).

The lack of an acceptable, readily available option to convert retirement savings into affordable monthly lifetime income is creating a dangerous disconnect in the Canadian retirement income system, and there is widespread concern that this will lead to increasing financial insecurity for a large portion of the elderly population.

Motivated by this concern, in 2018, a large and varied coalition of pension experts, organizations and industry stakeholders came together to ask the federal government to change tax and pension legislation to allow a third decumulation option: one that enables Canadians to combine their registered savings at retirement and generate pension income less expensively, through **Dynamic Pension (DP) pools**.

Note: The coalition's letter in 2018 referred to this decumulation option as a Variable Payment Life Annuity (VPLA). For compelling reasons explained later in this paper, we propose and encourage the use of "Dynamic Pension" instead ("rente dynamique" en français).

Understanding DP Pools and How They Work

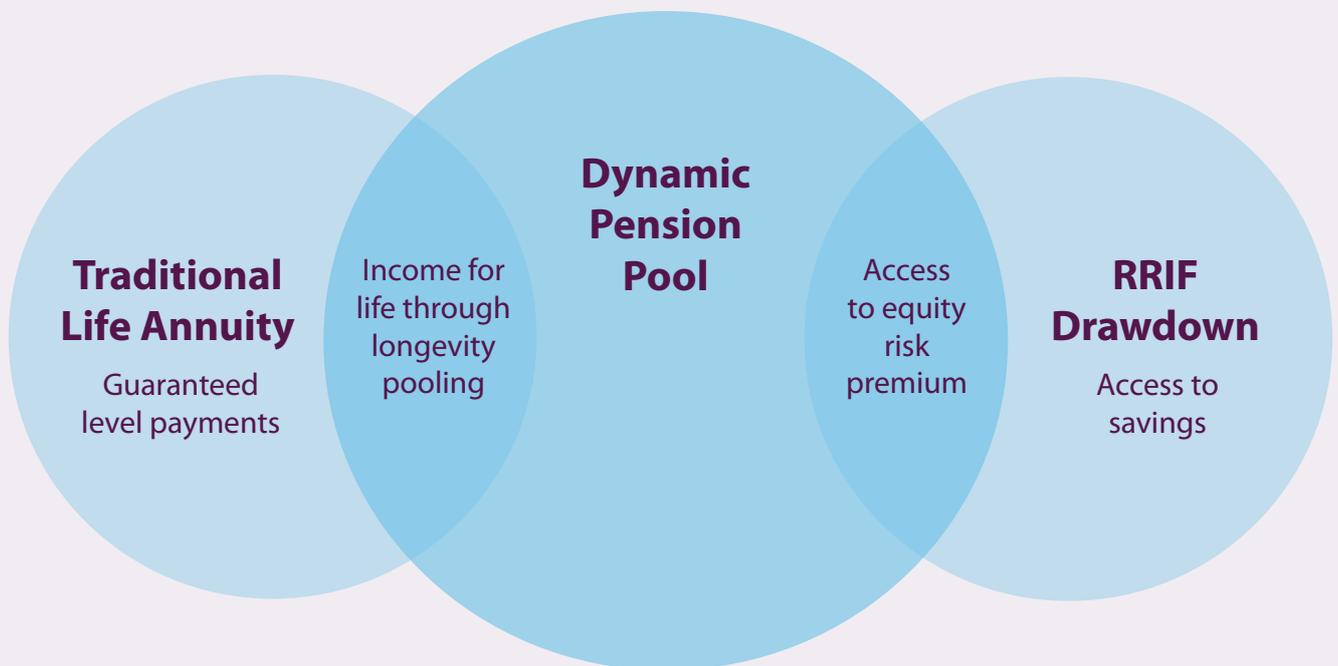
A DP pool is an efficient financial decumulation vehicle with a simple but profound goal: **to help people optimize their expected lifetime retirement income while ensuring they never run out of money.**

DP pools operate on a risk-sharing principle. While protecting a single individual from outliving their savings is often prohibitively expensive, the same protection becomes affordable when spread across a large group.

In a DP pool, any funds left over when a member dies remain in the pool, so those who die earlier than average subsidize those who die later. This gives retirees the freedom of not holding on to savings to cover the possibility of living beyond their life expectancy, providing a substantial boost to their lifetime retirement payments.

In a traditional annuity, longevity pooling is bundled with prohibitively expensive investment guarantees; a DP pool offers the former without the latter. This innovative design allows members to take advantage of longevity pooling while also harnessing the equity risk premium—that is, the additional returns expected to be earned in exchange for taking on investment risk.

From the member’s perspective, registered savings are voluntarily directed to a DP pool, which provides a lifetime pension income that is adjusted each year in response to actual investment returns and the pool’s mortality experience. Because they are “dynamic”, pension payments may fluctuate from one year to the next—much like systematic RRIF withdrawals will fluctuate according to the financial performance of the underlying assets. However, unlike self-managed RRIF savings, DP pools address the risk of running out of money in old age.



DP pools give Canadians the opportunity to benefit from a robust governance structure and professional investment management. As part of a large group, DP pool members may also benefit from economies of scale, such as reduced fees for asset management and administration (compared with what is available in the retail market), stronger asset purchasing power and better capacity to diversify investments across asset classes and over time.

From the provider's perspective, DP pools do not impose DB liabilities, nor do they require risk capital, reserves or deficiency contributions. In other words, there is no direct financial risk for providers in offering them.

While many retirees appreciate the potential benefits of longevity pooling, some may have concerns over the potential loss of value in case of an early death. To address this, income from a DP pool can be structured to include a death benefit, such as a money-back option: if a member passes away before receiving payments equal to the value of their original purchase price, then the difference is payable to their beneficiaries or estate. This feature can help retirees overcome the psychological hurdle of entering a longevity pooling arrangement.

Social and Fiscal Impact of DP Pools

DP pools can help improve social welfare. By providing an inexpensive longevity pooling solution, they can reduce income insecurity and psychological stress, increasing retirees' confidence to spend and enjoy their hard-earned income. DP pools can also help mitigate potential exposure to predatory elder abuse by automating and rationing structured monthly pension payments from otherwise accessible (and potentially large) saving accounts.

DP pools may have an impact on tax revenues. In the short term, transfers to DP pools from registered retirement savings vehicles are expected to accelerate both income and consumer tax revenue. Over the longer term, these fiscal gains will be offset to some

extent by the loss of tax revenue on registered balances remaining at death that would have otherwise formed a taxable distribution to heirs.

In addition, DP pools should also help support the financial sustainability of federal and provincial senior social support programs. For example, higher taxable income among the elderly would reduce eligibility for income-tested federal and provincial senior social transfers, such as the Old Age Security (OAS) and the Guaranteed Income Supplement (GIS). These programs were already the largest federal budget spend items prior to the pandemic, and their cost will be under increasing pressure due to Canada's changing demographics and proportionally shrinking base of working taxpayers.

Building an Efficient Decumulation Solution for All Canadians

In response to the coalition's 2018 request, the federal government recently enacted important amendments to the Income Tax Regulations that allow sponsors of registered DC plans and Pooled Registered Pension Plan (PRPP) providers to set up DP pools and make them available to members within those plans.

This is a step in the right direction. However, DC plan assets are just the tip of the decumulation iceberg, representing just 10% of the \$1.5 trillion of registered individual savings nationwide, and covering less than 7% of working Canadians. Those who expect PRPPs to fill the gap may well be disappointed. There are serious obstacles to access in the current PRPP marketplace and, given the lukewarm enthusiasm exhibited by PRPP licensees to grow this segment, these obstacles are unlikely to disappear without further regulatory intervention. The result is that, in the absence of changes to the regulatory framework, dynamic pensions will likely be out of reach for the vast majority of Canadians.

To effectively address the decumulation disconnect, affordable lifetime pension income needs to be broadly available to all retiring Canadians, from a variety of providers. This report outlines the key features of a universally accessible regulatory framework that can bridge the decumulation gap by promoting successful implementation of DP pools across the entire Canadian retirement income system.

To ensure DP pools reach their maximum potential in the Canadian retirement income system, the regulatory framework needs to support the following six objectives:

1 Uniform treatment of registered savings

DP pools should be able to accept assets from any registered retirement savings vehicle (i.e., registered pension plans (RPPs), deferred profit sharing plans (DPSPs), RRSPs, RRIFs and their locked-in variants).

2 Universal member eligibility

Affordable lifetime pension income must be accessible to all retiring Canadians, regardless of their employment histories.

3 Effective protection from longevity risk

The DP pool must be large enough to provide meaningful longevity risk pooling.

4 Robust governance

DP pool providers must have a fiduciary duty to the members, and the pool must operate transparently with appropriate controls and oversight.

5 A diverse ecosystem of providers that are willing and able to bring DP pools to scale quickly

The product must be attractive to, and feasible for, a variety of providers to achieve appropriate scale. The framework should support a range of providers, including not-for-profit entities, to foster competition.

6 Clear, simple and harmonized regulations

Legislation must be clear and unambiguous: the rules must be explicit to facilitate providers' understanding and ease implementation.

With input from a panel of pension thought leaders across Canada, this report provides guidance on how to remove unnecessary obstacles and clear the path for DP pools. It describes four possible vehicles for implementation: **the two options included in the current regime (registered DC pension plans and PRPPs), an emerging solution through securities and a new purpose-built container (a standalone DP pool to be created under pension legislation).**

Following is an evaluation of each option based on the objectives outlined above, with critical areas for additional legislative support identified.

	DP pools within DC plans	DP pools within PRPPs	DP pools via securities	Standalone DP pools
1 Uniform treatment of registered savings				
2 Universal member eligibility				
3 Effective protection from longevity risk				
4 Robust governance				
5 Providers are willing and able to bring DP pools to scale				
6 Clear, simple, harmonized regulations				

 satisfied  needs adjustment  unlikely to be achieved

No matter which implementation vehicle(s) the regulatory framework supports, legislative action is needed to allow DP pools to reach their full potential.

A Call to Action

In the face of an ageing population, turning a blind eye to the decumulation disconnect and failing to act is dangerous to the financial well-being and peace of mind of Canadian seniors and their families, as well as to the financial viability of Canada's social systems.

The heartbreaking tragedies of the COVID-19 pandemic in Canadian nursing homes have not only illuminated the systemic deficiencies of Canada's long-term care services, but they have also given Canadians a glimpse into a future where the public system can't afford to support the needs of a growing elderly population. This is yet another wake-up call that thoughtful public policy reforms must be put in place now to allow our ageing population to become more financially self-reliant by improving the effectiveness of the private resources they will need to fall back on. The urgency is underlined by Canada's demographic shift, which already has seniors outnumbering children for the first time in history.

Now is the time to implement transformative policy reform and create a future where our elderly population can properly benefit from the retirement savings they have so painstakingly accumulated.

The global consensus, built on academic studies and practical examples, is that DP pools are an effective, inclusive and sustainable solution to the decumulation challenge. With the legislative changes identified in this report, all Canadians could gain access to DP pools—the missing link in our retirement income system today.

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1 Background: Examining the Disconnect in the Canadian Retirement Income System

The public components of the Canadian retirement income system—the Canada/Quebec Pension Plan (CPP/QPP), Old Age Security (OAS) and Guaranteed Income Supplement (GIS)— provide a lifetime pension income that replaces approximately 40% of average earnings (OECD, 2021). The rest must be provided through private retirement savings.

Traditionally, workplace defined benefit (DB) pension plans have played this key role, but over time, coverage has become very limited in the private sector. In the late 1970s, more than 30% of private sector workers were members of a DB plan. Now, that figure is closer to 10% (Statistics Canada, 2020a), and the majority of the remaining DB plans are closed to new members¹. Unfortunately, COVID-19 has further accelerated the continuing decline in the number of private sector DB plans (Stone and Siegel, 2020)².

To bridge the growing gap, Canadians have been encouraged to save more, often in workplace defined contribution (DC) pension plans, registered retirement savings plans (RRSPs) and similar arrangements. **Nationwide, these savings now exceed \$1.5 trillion; however, only 10% of those assets are in DC pension plans³, covering less than 7% of working Canadians (Statistics Canada, 2021).**

Table: Total assets held in various registered retirement savings and income plans

Account	All family units (in millions)
RRSP and LIRA	1,055,933
RRIF and LRIF	315,020
DPSP	16,700
DC RPP	156,808
Total	1,544,500

Source: 2021 Statistics Canada. Custom tabulation based on Survey of Financial Security, 2019.

With DB coverage deteriorating in the private sector, Canadians are entering retirement with a greater reliance on individual registered savings to finance their golden years. In 2019, two thirds of Canadian households nearing retirement held registered savings in individual accounts (RRSP/RRIF, LIRA/LRIF and DC pension plans), with a median balance of \$100,000—a third higher than the median balance two decades ago in 1999 (in constant dollars).⁴

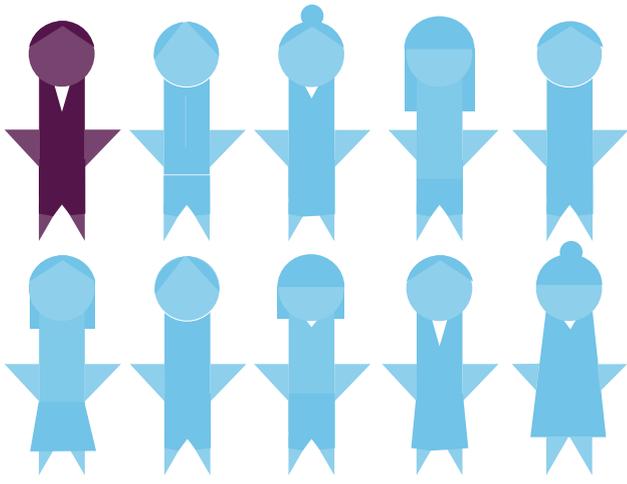
Without the protection of a workplace pension plan that converts their accumulated savings into a lifetime income stream at an affordable price, retiring

1. In Ontario, for example, the regulatory authority found in its 2020 report that of the 1,035 single employer DB plans that had filed a valuation report, 798 were closed (77%) (FSRA, 2021).

2. Continuing low interest rates are expanding pension liabilities and challenging asset return assumptions. The significant volatility caused by the pandemic may motivate an even lower appetite for sponsoring DB pension plans. These ongoing stresses will ultimately lead to more DB plan wind-ups that will deprive more working Canadians of this important post-retirement protection.

3. In 2019, total assets in registered retirement vehicles—including RRSPs, DPSPs, RRIFs, their locked-in counterparts (LIRAs and LRIFs) and registered DC plans—were \$1.544 trillion, roughly half of which came from families nearing or entering retirement (ages 55 to 70) [source: custom tabulation based on the Survey of Financial Security, 2019, Statistics Canada]

4. In 2019, the percentage of family units where the major income earner is between age 55 and 70 and has some combination of RRSP/RRIF/DPSP/LIRA/LRIF/DC was 67%. The 2019 median value was \$100,000. For 1999, the percentage of family units was 65%, with a median for those family units of \$73,200 in 2019 constant dollars (or \$50,000 unadjusted 1999 current dollars). Source: custom tabulation based on the Survey of Financial Security, 2019, Statistics Canada.



A workplace pension plan that provides an ongoing stream of lifetime retirement income is **out of reach for nine out of 10 private sector workers** in Canada.



Canadians have **\$1,544,500,000,000** in registered retirement savings, with no satisfactory option to turn those savings into lifetime retirement income.

Source: Tailored tabulation from Statistics Canada



Canadians are increasingly facing the **complex challenge** of turning their savings into lifetime retirement income.

 In 2019, two thirds of Canadian households nearing retirement held registered savings in individual accounts (RRSP/RRIF, LIRA/LRIF and DC pension plans), with a median balance of \$100,000—a third higher than the median balance two decades ago in 1999 (in constant dollars).

Canadians are faced with two extreme options: buy a life annuity from an insurance company, or manage the investment and drawdown of their retirement savings for the rest of their lives.

Annuities provide income guarantees, fully insulating retirees from financial market risks as well as the risk of outliving their savings. While these guarantees are attractive in theory, they are generally viewed as prohibitively expensive. Uptake on retail annuities sold by insurers has been very low among retirees.

For instance, the amount of total statutory reserves (in-force) for individual payout annuities purchased with registered funds was a mere \$7.6 billion in 2020⁵.

With little appetite for annuities, the vast majority of Canadians move their registered savings to an individual registered retirement income fund or equivalent (RRIF or LRIF)—yet this is far from an ideal solution to generate lifetime retirement income⁶.

5. This figure captures the reserves for medium and large providers, representing the majority of the Canadian market. Source: Secure Retirement Institute® (SRI) Canadian Annuity Asset Survey (S. Bryck, personal communication, May 21, 2021 and June 30, 2021)

6. In addition to the solutions outlined in this report, a very effective and underused strategy to establish additional secure income in retirement is to delay claiming CPP/QPP and OAS, which significantly increases the lifetime benefit levels (MacDonald, 2020).

1.1 Canadian Seniors Are at Risk

From the individual's perspective, managing retirement savings in uncertain markets to cover evolving needs over an unknown time horizon (averaging about 20 years but possibly much longer) is a formidable task, even for experts. Many different risks—including variable investment returns, extended longevity and changing personal circumstances (e.g., the death of a spouse or declining health)—can impact a retiree's accumulated savings and the income they can (or must) draw from those savings. Depleting savings prematurely can lead to reduced living standards, pressures on extended families, potential financial hardship and possible reliance on public subsidies.

The worry associated with income insecurity—particularly the fear of running out of money in retirement—has demonstrable negative effects, including impaired mental and physical health. And recent research shows these negative health outcomes affect anyone facing the risk of inadequate income in the future, not just those who are living on low income today (Rohde et al., 2017).

Empirical research consistently finds that, without lifetime income security, seniors generally consume their savings at an overly conservative rate to protect against potential later-life financial risks. A recent U.S. study by the Employee Benefit Research Institute and asset manager BlackRock found that retirees were drawing down their assets much more slowly than anticipated and had, on average, more than 80% of their assets left after nearly two decades of retirement (Wolfe and Brazier, 2017).⁷ Surveys and focus groups by the Society of Actuaries found this behaviour was attributable to fear of what the future will bring, rather than the desire to leave an inheritance (SOA, 2016). The same holds for savers in Australia—one of the largest DC markets in the world (Alonso-Garcia et al., 2018).

From an economic perspective, the risk associated with longevity is substantial and increases with age. In fact, after age 75, the financial uncertainty due to longevity is greater than the uncertainty associated with investing 100% in equities—a risk most people over age 75 would not be eager to take (Collie, 2016). In the absence of a longevity solution, retirees attempt to manage the risk of outliving their savings by making smaller withdrawals and choosing highly conservative post-retirement asset allocations. This precautionary behaviour can lead to an unnecessarily reduced lifestyle. Fear of spending in a wider population of retired Canadians may also lead to delayed government tax revenues, as registered assets are disbursed and spent more slowly.

There are other reasons that holding money in an RRSP/RRIF is a major concern for seniors who rely on personal savings to sustain their retirement. Research finds that while financial literacy declines with age, confidence in financial decision-making does not (Finke et al. 2017). Seniors are typically unaware of their gradual cognitive decline and can therefore become vulnerable to decision-making mistakes.

When retirement and investment decisions are passed on to others, such as family members, financial conflict can arise (between the decision-maker and the senior, or between the decision-maker and other family members). For example, those who are suddenly thrust into the position of managing retirement assets may invest and spend too conservatively, out of fear of being criticized for loss of wealth. Or they may spend extravagantly, because the estate is large and failure by the beneficiary to spend the money could be seen as self-serving. Holding large amounts of accessible savings at advanced ages can also expose seniors to a range of unsavoury behaviours, from predatory advice to fraud and financial abuse⁸. In fact, financial exploitation of the elderly is likely to become one of the biggest crimes of the 21st century (Roberto and Teaster, 2011).

7. Other studies with similar conclusions include De Nardi et al. (2006), Love et al. (2008), Love et al. (2009), and Poterba et al. (2011).

Fundamentally, the lack of adequate decumulation solutions in our retirement income system is putting the financial, social, mental and physical well-being of ageing Canadians at risk.

1.2 Macro Trends and Fiscal Challenges

In addition to the micro-perspective of individuals and their families discussed above, a number of macro-level trends point to the need to provide efficient retirement income options for Canadian seniors.

1. Canada's population is ageing

Canada's elderly population is going to be larger than it has ever been—both in number, and as a proportion of the entire population. Between 2010 and 2060, the ratio of seniors to working age Canadians is expected to more than double (MacDonald et al., 2019). And although only one in three baby boomers had transitioned into their senior years prior to the pandemic in 2018, the single biggest federal fiscal expense at that time was elderly social benefits (OAS and GIS), and the single largest provincial expense was health care for seniors (Armstrong, 2018; Barua et al., 2016).

Unlike the CPP and QPP (which are independently funded), OAS, GIS, and health and long-term care costs are financed on a pay-as-you-go basis from general revenues. These costs are expected to skyrocket. Specifically, over the next three decades, total annual OAS program expenditures are projected to triple—from \$60.8 billion annually in 2020 to \$184.7 billion by 2050, in current dollars (OCA, 2020). The cost of senior long-term care is projected to more than triple, ballooning from \$22

billion to more than \$71 billion annually over the next three decades (MacDonald et al., 2019).

Considering that provincial government budgets are already strained, maintaining these benefits—even with the major quality gaps revealed by the pandemic—will be highly problematic. Retraction of public pension, health and long-term care benefits is a real risk that retiring Canadians may want to consider, particularly in a post-pandemic economy with an already-shrinking proportion of working-age Canadians.

2. Even as seniors' need for support increases, the ability of extended families to provide that support is declining

Canadians overwhelmingly report wanting to age in their own homes (NIA and Telus Health, 2020). Traditionally, extended family has largely made this possible by being an important source of support to Canada's elderly—from performing regular tasks like cooking seniors' meals, preparing their taxes and transporting them, to taking on more significant commitments like housing ageing relatives in their own homes. Family support can also include the ongoing health services needed by Canadian seniors who are living with chronic and disabling physical and/or mental conditions. In fact, 75% of elder care within the home is currently provided on an unpaid basis by families (MacDonald et al., 2019).

Canada's ageing demographics will push more and more people into older age categories, while longer life expectancies will lead to longer periods of impaired health and a higher need for health-related services (Bushnik et al., 2018). But reduced fertility rates since the 1960s have resulted in smaller families. Combined with greater geographical mobility of family members, higher divorce rates, changing expectations of care and a dramatic growth in the participation of women in the labour

8. For example, the longer Canadians keep their assets under the management of advisers/managers, the greater the trailing fees paid to those professionals, who are therefore indirectly compensated to advise maintaining a client's assets under their management even if better options exist. Possible heirs may also act opportunistically to preserve their expected inheritance and offer advice that discourages the depletion of retirement savings.

9. For more information of the elder abuse challenges facing Canadian seniors, see Johnson and Duthie (2021).

force (who have traditionally acted as caregivers), the result is that, for the first time in history, Canada's seniors are less able to count on their adult children to provide free help when needed. This will greatly increase seniors' reliance on paid services and will require significant additional financing (MacDonald et al., 2019).

3. Long-term care is going to be a substantial public policy challenge

It's important to recognize the harsh realities of older people lacking the protection that money and family support provide, particularly at advanced ages. The pandemic vividly exposed the inhumane and heartbreaking treatment of vulnerable elderly Canadians, which was fundamentally a result of systemic deficiencies present in the long-term care (LTC) system long before the pandemic.

The problems underlying LTC are largely driven by an inadequately funded system that emphasizes institutionalization of the elderly over supportive care in the community, as it continues to play catch-up to the ageing curve of Canadians (NIA, 2019). This became clear during the pandemic, as Canada held the international record for having the highest proportion of deaths in long-term care homes among OECD countries—approximately double the OECD average (CIHI, 2020).

Despite the clear impetus for major reforms, sustainable and equitable long-term financing solutions for LTC are not on the radar. With provincial LTC budgets already stretched and no financially sustainable plan in sight, these deficiencies will increasingly be felt by baby boomers as they age and develop chronic illness and disability in greater numbers—particularly since they lack the support of adult children who have traditionally cared for Canada's older population when the system has not.

These trends and future challenges reinforce the need for seniors to protect themselves by optimizing their own financial resources. Failing to address the disconnect in the retirement income system is a recipe for disaster to the public purse and its shrinking taxpayer base, as well as to the well-being of seniors and their families.



2 The Case for Dynamic Pension Pools

In a 2018 letter to the federal government, a large and varied coalition of retirement-related stakeholders identified an effective solution to the decumulation gap: giving Canadians the opportunity to combine their money at retirement and create their own pension pools (ACPM et al., 2018).¹⁰ This solution—referred to here as **Dynamic Pension (DP) pools**—is the pension income option that is currently lacking in the Canadian retirement income system.

The remainder of this report describes how DP pools work, outlines their merits, and proposes an effective framework for their implementation and widespread adoption.

2.1 What Are DP Pools, and How Will They Help?

While DC pension plans and private RRSP savings are largely focused on helping working Canadians save for retirement, DP pools help them turn their savings into lifelong pension income.

DP pools give Canadians the option to use some or all of their registered savings to buy a dynamic pension: a monthly income stream that lasts for life. The pension is “dynamic” in that monthly payments are adjusted periodically to ensure gains and losses—primarily those due to mortality experience (i.e., actual vs. expected deaths) and investment experience (i.e., actual vs. expected returns)—are distributed equitably among the members of the pool.

The value of DP pools is simple but profound: they help people optimize their expected lifetime retirement income while ensuring they never run out of money. This is achieved by pooling longevity risk, maintaining an allocation to

growth assets, leveraging the group’s size to reduce cost and gain access to special asset classes, and putting into place a transparent benefit policy with appropriate governance to ensure the dynamic pensions are fair and sustainable.

DP pools operate on a risk-sharing principle: while protecting a single individual from a risk is often prohibitively expensive, the same protection becomes affordable when spread across a large group. In a DP pool, the risk being shared is longevity risk. While the financial risk of not knowing how long a single individual will live is significant, the average future lifetime of a large enough group of people is much more predictable. The DP pool’s actuary calculates the pension income the pool can afford to pay out, based on the average projected lifetime of individuals in the group (using the same type of actuarial mathematics applied to pricing DB pension plans and life annuities). This pension is higher than the corresponding income an individual could afford to safely withdraw from their savings on their own without running out of money.

A range of studies have demonstrated the financial advantages of risk pooling in a pension plan rather than managing decumulation at the individual level (Milevsky and Huang, 2018; Millard et al., 2021). In a supplementary financial illustration to this report, we draw on the experience of the UBC Faculty Pension Plan to show that DP pools deliver lifetime retirement income payments that are substantially higher than the minimum withdrawals from a RRIF, averaging 20% more throughout retirement up to age 95, and over 40% higher when accounting for the higher investment fees paid in the retail RRIF market. Most importantly, DP pool payments continue after age 95, while the required RRIF minimum withdrawals deplete the fund and

10. Several background reports that led up to that initiative include ACPM (2017), Ezra (2018) and MacDonald (2018).

exponentially decrease payouts. This is a concern, as one in six 65-year-old males, and one in four 65-year-old females, is expected to live past age 95.¹¹ These results are consistent with the analysis performed by the Australian Government Actuary comparing DP pool payouts to individual account-based drawdowns (AGA, 2014).

Pooling the longevity risk gives retirees the freedom of not having to hold on to savings to cover the possibility of living beyond their life expectancy, offering a substantial boost to lifetime retirement payments. The trade-off is that any funds left over when a member dies (after payment of any death benefits provided by the plan) will remain in the DP pool rather than being paid out to the deceased member's estate. As Moshe Milevsky, Canada's foremost expert on longevity risk pooling arrangements, succinctly puts it: "If you give up some of your money when you die, you can get more when you're alive" (Aston, 2021).

DP pools also offer numerous important financial and psychological advantages:

They allow Canadians to continue to benefit from higher-yielding assets over the entire course of their decumulation journey. Since a DP pool can dynamically adjust payments, it has the latitude to invest in riskier assets and benefit from higher returns over the long run (a reward for taking on risk), which translates into higher pensions, on average. Individuals who choose to self-manage their savings in a RRIF can invest in riskier assets and benefit from the risk premium for a while, but conventional financial planning advice recommends they reduce their equity exposure as they move

through retirement.¹² And traditional annuities, which come with an income guarantee, require more cautious investment and substantial risk capital to make sure the guarantee can be honoured in virtually all market environments.¹³

An open-ended DP pool can operate with less liquidity. This opens the door to illiquid investments such as real estate, infrastructure and private equity, which offer strong and stable cash flows over the long term. Although access to such investments for individual retail investors has increased in recent years, investment through a large institutional pool (like a DP pool) would be far more cost-effective.

A large DP pool wields substantial investment power and can realize significant economies of scale. This can translate into higher income per dollar invested—much higher than a retiree could likely achieve on their own (Dyck and Pomorski, 2011). Depending on the provider, a DP pool member could benefit from reduced asset management fees compared to those in the individual retail market, as well as greater asset purchasing power, better capacity to diversify investments across asset classes and more sophisticated risk management focused on the pool's long-term sustainability.

DP pools provide an efficient way to convert retirement savings into lifetime retirement income, bringing peace of mind to retirees. This greater sense of financial security leads to psychological benefits for retirees' health and wellbeing (Rohde et al., 2017). Equally important, a rationed income (in the form of a monthly cheque) reduces the opportunity for unintentional conflicts

11. Calculations based on gender-specific CPP population mortality rates as provided in the CPP mortality study published by the OCA (2015), with assumed future improvements in mortality of the general population going forward.

12. From the individual's perspective, having the capacity to maintain some exposure to equity markets is also a valuable inflation hedge, especially for seniors with income streams that are otherwise nominally fixed, such as income from DB pension plans and annuity payments. That is because, over the long term, the equity risk premium is understood to help counteract inflation. The erosive effect of inflation on fixed retirement income is a well-established financial planning concern and is particularly worrisome given the realistic future risk of high inflation in a post-pandemic economy. In fact, inflation fears were precisely the reason that CREF—the oldest running DP pool in North America—was initially created in 1952 (Greenough, 1990).

13. The difference in the lifetime income produced by the DP pool versus a traditional annuity can be substantial. Based on the experience of the UBC Faculty Pension Plan, a DP pool invested in a balanced fund can deliver payments for a 65-year-old that begin approximately 15% higher than commercial life annuities, with the expectation that the dynamic pension payments will increase over time, while the annuity payments stay the same (UBC, 2021). The higher expected income is compensation for the uncertain evolution of the DP pool payments from year to year.

of interest and helps ward off potential financial exploitation of elderly Canadians with accessible savings.

DP pools are attractive because they deliver value to members without financial risk to providers. When lifetime income is guaranteed by an insurer, an employer or another third party, that party is accepting risk. Many employers are increasingly unwilling to underwrite those guarantees¹⁴. Indeed, the volatility and uncertainty of funding requirements and accounting costs arising from such guarantees can have a material impact on borrowing costs and reduce share prices for publicly traded companies (Huang and Lalani, 2015).

Since DP pools dynamically adjust income payments based on the pool's experience, they do not require risk capital or deficiency contributions, resulting in no direct financial risk for providers. Industry feedback strongly suggests that both small and large-scale providers recognize the potential of DP pools because of the clear value proposition they offer to members (i.e., their clients) without the additional risk to the provider.

Of course, DP pools aren't for everyone. They may not be appropriate for those who are in poor health relative to the general population, need access to their savings, are not comfortable with the risk profile of the pool's investments or want to leave a bequest beyond the death benefit provided by the pool. Nonetheless, for those in reasonable health who have some tolerance for risk, having access to DP pools is likely to improve their financial welfare (Boyle et al., 2015).

2.2 Government Responsibility and Fiscal Impact

Tax-deferred savings programs like RRSPs and workplace registered pension plans operate on the principle that the government will defer tax revenue as an incentive for Canadian workers to shift more income into later life. This is, in effect, a collective public investment. The size and timing of the payoff on this public investment depends on two factors: the return on the tax-deferred savings while they are invested, and the size and timing of the withdrawals.

It is the government's responsibility to institute public policies that will maximize the payoff on this investment for the benefit of all Canadians—including enacting effective legislation that supports the efficient drawdown of tax-deferred retirement assets. Introducing DP pools may have a net positive impact on government finances.

First, in the short term, DP pools are expected to accelerate *both* income tax *and* consumer tax revenue from baby boomers by:

- Increasing their taxable income streams for life to levels that are expected to be significantly higher than the RRIF minimum withdrawal, and
- Giving seniors the confidence to spend that income because of the late-life income security provided by DP pools¹⁵.

By contrast, seniors who are worried about their future may not spend even the mandated RRIF minimum withdrawal, moving some of these forced withdrawals back into savings instead (e.g., into TFSAs).

14. See Chandler (2020) for a discussion of the appeal of different types of risk-sharing to different types of employers.

15. Blanchett and Finke (2021) found that retirees spend twice as much each year in retirement if the income is coming from a secure lifelong pension rather than from a savings account. According to them, the secure income effectively gives retirees a "license to spend", without which they tend to hold onto their retirement savings. While Blanchett and Finke's study explored the effect of guaranteed income on spending, dynamic pensions should have a similar effect.

Over the longer term, some of these income and consumer tax gains may be offset by the loss of tax revenue associated with unused RRIF balances at death. For clarity, in RRIFs, the remaining account balances of deceased members are immediately taxed as income, unless left to a qualifying survivor (i.e., a spouse, common-law partner or dependent child). This is not the case in a DP pool. As a result, the long-term net tax implications of shifting funds from RRIFs to DP pools would require more comprehensive analysis. See Kosarenko (2017) for an example of this type of fiscal trade-off.

Second, supporting more efficient decumulation solutions should reduce reliance on social programs, protecting the fiscal sustainability of social benefits and services for all Canadians. For example, by augmenting income from registered savings, DP pools could reduce eligibility for income-tested federal and provincial senior social transfers, such as OAS/GIS.

Third, higher lifetime income can help support Canadian seniors who want to stay in their own homes, preserving their desired autonomy and benefitting the public purse. Those who can pay for the home care they need are less likely to prematurely go into a public nursing home, where the exceptionally high costs are borne by taxpayers, thereby reducing reliance on Canada's already-overburdened LTC system.

2.3 Modern Success Stories

DP pools are not a new idea; the general concept of longevity risk pooling without explicit guarantees has at least a few hundred years of history (Milevsky, 2015). Academic literature in economics and actuarial science has supported longevity risk pooling for a very long time. Research on this topic has grown in recent years, inspired by the increasing need for efficient decumulation solutions in retirement systems around the world.¹⁶

International support for DP pool arrangements includes a current OECD report explaining that, like a DB pension plan, this type of arrangement “allows for higher expected retirement income for all participants compared to what they could achieve on their own because they do not need to plan to have additional savings to cover the risk of living beyond the average life expectancy” (OECD, 2020, p. 159).

There is also practical evidence from successful modern implementations of DP pools. Following is a description of three notable examples.

1952: TIAA's CREF

The oldest running DP pool in North America is attributable to the Teachers Insurance and Annuity Association of America (TIAA). Established in 1918, TIAA is the major provider of retirement investment plans for employees in the U.S. education and non-profit sectors. As of 2021, it had more than 5 million members and held US \$1.3 trillion in assets under management (TIAA, 2021). In response to rising inflation and shifting demographics—both within the education sector and more broadly across society—TIAA created the College Retirement Equities Fund (CREF) in 1952.

CREF was the first decumulation vehicle to give pension plan members access to equity market returns while providing a lifetime pension income. Both the vision (providing income for life that could keep pace with inflation) and the specific solution (fully participating pension contracts) were groundbreaking at the time. CREF essentially operated as a DP pool, having no guarantees and a “complete distribution of all dividend earnings, and all realized and unrealized capital gains and losses, credited currently and determined by formula”, provided by an “issuing company without contingency reserves or surplus for adverse mortality, expense, or investment experience” (Greenough, 1990, p.98)

16. A varied selection of relevant recent work includes Milevsky and Salisbury (2015), Donnelly (2015), Qiao, C & Minney, A. (2015), Weinert and Grundl (2016), Forman and Sabin (2014); Milevsky et al. (2018), Bernhardt and Donnelly (2019), Fullmer (2019), and Iwry et al. (2020).

This unique pension design ensured that members have lifetime pension income while still being able to invest in equities and diversified funds, all in a fair and sustainable manner. “Here, for the first time, groups of participants could be awarded their fair share of the total fund.” (ibid)

1967: UBC’s VPLA

The UBC Faculty Pension Plan currently serves approximately 6,600 active and retired members with nearly \$3 billion under management (UBC, 2020). It is the third largest DC plan in Canada (Benefits Canada, 2019), and its Variable Payment Life Annuity (VPLA)—the most well-known DP pool in Canada—has been running sustainably and successfully for more than 50 years.

The origins of UBC’s VPLA option lie in CREF: before the Faculty Pension Plan was established, UBC professors participated in TIAA, as did many other Canadian post-secondary employees. When UBC withdrew from TIAA in 1967, a CREF-like retirement income option was created for the new plan. Over time, a second VPLA option with a different payout pattern was added. Both options pay dynamic pension benefits based on investment returns and members’ longevity (UBC, 2017).

As the focus of the retirement system has slowly shifted from accumulation to decumulation over the past decade, UBC’s DP pool (unencumbered by expensive guarantees) started to draw attention. Unfortunately, by that time, no new DP pools could be established: a tax policy change in 1988 blocked DC pension plans from providing lifetime payouts directly to their retiring members by stipulating that

such benefits must be provided through annuities purchased from a licensed provider, such as an insurance company¹⁷. That policy change was meant to prohibit DC plan sponsors from making promises about fixed lifetime payments that they might not be able to keep. However, DP pools do not actually make such promises, so it seems likely they were inadvertently swept up in the broader changes. Although UBC’s arrangement was grandfathered, the door for new DP pools was firmly shut¹⁸.

2021: QSuper’s Lifetime Pension

Australia’s QSuper—one of the largest DC pension plans in the world—is a century-old DC plan with more than \$100 billion CDN in assets and approximately 600,000 members (QSuper, 2021a).

In early 2021, using UBC’s VPLA as a template, QSuper created the largest DP pool offering worldwide: QSuper’s “Lifetime Pension”¹⁹. Feedback from QSuper suggests the launch has been very successful, in terms of both member uptake and industry recognition, and global recognition of the product is growing. In 2021, Pension & Investments selected QSuper as the recipient of one of its prestigious international Innovation Awards.

Much of the success of the Lifetime Pension can be attributed to a history of trust between QSuper (a not-for-profit pension provider) and its members. In addition, a premium refund feature helped members overcome an important behavioural obstacle: the fear that they would die before having received their “money’s worth” from the longevity pooling arrangement.²⁰

17. See the answer to Question 4—Self-annuitized money purchase plans in CRA (2002).

18. In 2015, another grandfathered plan, the Co-operative Superannuation Society (CSS) Pension Plan, tried to roll out a DP pool. The CSS Pension Plan is a significant player on the Canadian retirement scene: established in 1939, it is the second largest multi-employer DC pension plan in Canada. Yet their effort to add a DP pool was halted due to a lack of regulatory support, primarily the absence of a multi-jurisdictional framework for the product at that time (M. McInnis, personal communication, December 18, 2020).

19. For more information, see QSuper, 2021b. The positive contributions of DP pools to public policy objectives have been recognized by the Australian government, which allowed DP pool income to fall under the preferential treatment of pension income (e.g., not be treated as taxable income or count toward income-tested social public benefits). These same provisions were also made available to annuitized income. For a high-level overview, see Challenger (2020); for actual legislation, see Bill 2018, Social Services and Other Legislation Amendment (Supporting Retirement Incomes).

20. This feature is also included in the majority of income annuities sold in the US (Milevsky and Salisbury, 2021).

What's in a Name? More Than You Might Think....

The 2019 Federal Budget referred to dynamic pensions as “Variable Payment Life Annuities (VPLAs)”, after the decumulation option within the UBC Faculty Pension Plan.

Since the budget was released, we have learned through our interviews with industry leaders who have been discussing VPLAs, and presenting them to stakeholders and clients, that the name is a real barrier to success. Although it is entrenched at UBC, **the term “Variable Payment Life Annuity” is confusing, misleading and unattractive to consumers in the broader financial product marketplace.**

Why? Because “VPLA” is a hodgepodge of names for retirement products and features that already exist.

A “variable annuity” is a savings vehicle with a life annuity component, such as a savings fund with a minimum level of guaranteed annuity income. This product is already well known in the industry—in fact, during several interviews in the course of our research, it took nearly the entire meeting to clarify to the other parties (who were financial experts) that our research topic was *not* variable annuities.

The term “variable benefit” recently entered the Canadian pension lexicon, referring to a series of (potentially uneven) lump sum payouts after retirement that are made directly from a registered DC pension plan.²¹

And a “life annuity” is conventionally understood to be a guaranteed lifetime payment stream product purchased from an insurance company, which makes

that (insured) promise²². The life annuity reference is particularly problematic, since DP pools do *not* provide a guaranteed insured level of income, nor do they need to be accessed through a life insurance company.

Annuities are not attractive to consumers—so much so that researchers have coined the term “annuity puzzle” to capture the economic paradox that so few people purchase annuities, despite their economic value²³. Pensions, on the other hand, are very popular. In fact, their popularity gave rise to the term “pension envy” to capture the supposed feelings of jealousy from workers who don’t have one toward those who do.

For all these reasons, the name “VPLA” is a potential obstacle to successful implementation. As the rise of plain language initiatives over the past decade confirms, it’s important to use precise and meaningful names that are accessible to the public.

Choosing the correct name may seem like a non-issue to those outside of the industry, but it’s critical when implementing a voluntary product whose success depends entirely on how it is communicated.

VPLA has served as a useful placeholder, but it’s time for that to change. In our research, **“Dynamic Pension”** (referring to the payout stream received by members) and **“Dynamic Pension (DP) pool”** (referring to the fund or container from which a

21. It should be emphasized that, at the time the VPLA option was introduced at UBC, neither “variable annuities” nor “variable benefits” were commonly used terms in the financial sector. However, they are both very common today.

22. See for example: Financial Consumer Agency of Canada (2021)

23. The financial case for including annuities in individuals’ portfolios was presented over five decades ago in a seminal paper by Menahem Yaari (Yaari, 1965). Yet consumers’ voluntary annuity uptake rates have been significantly lower than the optimal rate suggested by the literature. This discrepancy is an ongoing and popular area of study among economists. See Baily and Harris (2019) for a recent overview of the annuity puzzle.

dynamic pension is paid) were deemed technically suitable and attractive to consumers. Here's why:

- These terms capture the fact that payments fluctuate while avoiding the term "variable", which is already being used in the context of "variable benefits" and "variable annuities."
- "Dynamic" is more technically accurate, signifying an often-quantitative process or system that actively changes and adjusts to new circumstances. It also lends a more positive tone that better reflects the participating and mutual sharing of risks and rewards underlying these pension arrangements.
- "Pool" identifies both the collective nature of the fund and the longevity pooling aspect.
- Finally, changing "annuity" to "pension" is both more accurate and more attractive to consumers.

We urge the expedient adoption of our suggested terminology before the name "Variable Payment Life Annuity" gains ground in the industry and leads to longer-term problems that are difficult to untangle.



3 From Research to Reality: The Regulatory Framework

The overall goal of this report is to recommend refinements to the regulatory framework that will promote successful implementation of DP pools in the Canadian pension environment. Significant strides have been made toward this goal in recent years.

- As mentioned above, major thought leaders in the retirement sphere came together in an NIA-led coalition in 2018, petitioning the federal government to change certain aspects of income tax legislation to allow for the payment of dynamic pensions from registered DC plans and PRPPs.
- The coalition's efforts were successful: the federal government made a commitment in its 2019 budget to update the tax legislation.
- Consultations with the Department of Finance followed, and related amendments to the Income Tax Act were passed with the 2021 federal budget bill.²⁴

The 2021 tax measures are an important first step toward addressing the disconnect between the accumulation and decumulation phases of the Canadian retirement income system, as they open the door for registered DC plans and PRPPs to pay dynamic pensions directly once the necessary changes are made to the relevant federal and provincial pension statutes. However, there are some important areas where the current framework should be improved.

Our engagement efforts with DC plan sponsors, consultants, service providers and regulators indicate that, **for DP pools to reach their maximum potential, the framework needs to support the following six objectives:**

1 Uniform treatment of registered savings

The DP pool should be able to accept assets from any type of registered retirement savings (including DC accounts, DPSPs, RRSPs, RRIFs and their locked-in variants).

2 Universal member eligibility

Affordable lifetime pension income must be accessible to all retiring Canadians, regardless of their employment histories. In other words, there should be no regulatory requirement for an employment link (past or present) between DP pool members and DP pool sponsors/providers.

3 Effective protection from longevity risk

The DP pool must be large enough to provide meaningful longevity risk pooling. Although the 2019 budget measures set the minimum number of DP pool members at 10, the threshold for efficient operations is likely much higher (at least 100 members, although it will depend on factors unique to each DP pool).

4 Robust governance requirements

The DP pool provider must have a fiduciary duty toward the members, and the pool must operate transparently with appropriate controls and oversight.

5 A diverse ecosystem of providers that are willing and able to bring DP pools to scale quickly

To achieve appropriate scale, the product must be attractive to, and feasible for, a variety of providers. The framework should support a range of providers, including not-for-profit entities, to foster competition.

24. Bill C-30, Budget Implementation Act, 2021, No. 1 received royal assent on June 29, 2021.

6 Clear, simple and harmonized regulations

Legislation must be clear and unambiguous: the rules must be explicit to facilitate providers' understanding and ease implementation.

The third and fourth goals relate to the quality of a specific DP pool (i.e., the quality of the protection for members) while the other goals relate to access to DP pools in general. Both aspects are important.

DP pools can be implemented through different vehicles. The four implementations considered in this report are:

- DP pools within registered DC pension plans;
- DP pools within PRPPs (VRSPs in Quebec);
- DP pools formed through securities (e.g., mutual funds); and
- DP pools delivered in their own standalone, purpose-built legislative "container."

The following sections evaluate each type of implementation against the six goals outlined above.

3.1 DP Pools Within Registered DC Plans

The current regime supports this implementation. Since DC plans are allowed to accept other registered funds, this approach meets the first objective (uniform treatment of registered savings); however, it falls short in several other areas.

Most significant, universal access to DP pools through registered DC plans is seriously hindered by the current requirement of an employment link between the DC plan sponsor and plan members. This puts dynamic pensions out of reach for those who do not have access to an employer-sponsored

pension plan in the first place—including 78% of Canadians working in the private sector (Statistics Canada, 2021).

Even for workers whose employer does offer a DC plan, access may still be limited. DP pools need sufficient scale to operate efficiently and effectively. As a result, it is likely that only the largest Canadian DC plans would add a DP pool, severely limiting access.²⁵

Another flaw of the current framework is that it disadvantages members who, upon termination or retirement, move their accumulated balances out of the plan (e.g., into an RRSP, a RRIF or the DC plan of a subsequent employer). Under the current rules, these individuals are not eligible to rejoin their former employer's plan at a later date to participate in its DP pool—meaning they may lose access to dynamic pensions entirely.

In addition, the within-plan implementation in its current form may not serve employers with several legacy plans who wish to set up a master DP pool accessible from all their DC plans. Depending on their corporate structure, such employers may need to do so through a third-party plan instead (e.g., a PRPP).

Removing the requirement for the employment relationship between the prospective DP pool member and the provider of that DP pool (in this case, the DC plan sponsor) could address both the second and third objectives (universal member eligibility and effective protection from longevity risk). With universal membership eligibility, DP pools that are operated within DC plans could grow more quickly and provide more robust longevity pooling.

We recognize that a good part of the current system of tax-assisted retirement savings was built with the employment link as a fundamental feature. We

25. In its submission to the Department of Finance, CLHIA estimated that implementing a DP pool within a DC plan would only make sense for plans with more than 20,000 active members. In 2019, there were fewer than 10 such plans in Canada (CLHIA, 2019). CLHIA's estimate is based on a conservative assumption about DP pool uptake rates among retiring members (5%). Our research suggests that the rates could be higher; in the case of 10% uptake, implementation would be feasible for plans with 10,000 active members.

are not suggesting that this feature be completely removed; we are simply noting that, for a DP pool focused on the decumulation stage of the pension plan life cycle, an employment link is unnecessarily restrictive. If the government's goal were to promote DP pools operated within registered DC plans, then the employment link should be removed for the purposes of establishing eligibility for membership in the DP pool.

In terms of the governance objective, within-plan implementation of DP pools has a strong advantage, as DC plans are already subject to governance requirements under pension legislation. Importantly, the plan administrator (often the sponsoring employer in a single-employer plan, a board of trustees in a multi-employer plan or a pension committee in Quebec) owes fiduciary duty to, and must act in the best interests of, plan members. The Canadian Association of Pension Supervisory Authorities (CAPSA) has also articulated governance best practices that DC plans are expected to follow.

However, its fit with the fifth and sixth objectives is less than ideal (providers willing and able to bring to scale and harmonization of regulations), and this is unlikely to significantly improve. As noted above, there may only be a handful of DC plan sponsors whose membership is large enough to allow the pool to reach necessary scale, and not all DC plan sponsors would be interested in, or capable of, recruiting members more broadly for their DP pool offering.

Finally, pension legislation for DP pools within DC plans would have to be simple and harmonized across jurisdictions. Harmonization has proven to be a significant challenge in the pension arena.

To make widespread implementation of DP pools within registered DC plans feasible, plans must have the ability to recruit DP pool members from outside their own active membership. To achieve this, pension legislation should be amended to remove the requirement for an employment link between the DC plan sponsor and prospective DP pool members. However, even with such a change, obstacles to successful implementation remain.

3.2 DP Pools Within PRPPs

Without any changes to the current rules, the accessibility of DP pools hinges on the availability of these pools within PRPPs and the growth of PRPP coverage in general. This is unlikely to occur without further regulatory change.

As evidenced by the slow growth of PRPPs to date, current licensees have little interest in developing the PRPP market (at least for accumulating retirement savings), with the current structure of legislated fee caps. Licensees may be more likely to operate and promote a DP pool within a PRPP if that PRPP had no accumulation component, since this would require fewer administrative resources.²⁶ Decumulation-only PRPPs would also meet the needs of plan sponsors looking for an efficient back-end to their existing accumulation solution (e.g., a registered DC plan or group RRSP). However, it is unclear whether PRPPs consisting of only a DP pool (i.e., without an accumulation component) would be allowed. PRPP regulations should be clarified and harmonized, at least for decumulation-only solutions.

There are also concerns about universal member eligibility and access. First, PRPPs are not currently offered in all provinces. Second, Canadians who

26. Licensees would not have to provide sponsoring employers with payroll support for processing contributions, nor would they have to maintain accounts for all active employees, including those with zero or small balances. Unlike individual PRPP accounts, DP pools would not require daily valuation of invested assets or sophisticated recordkeeping capabilities to track and show individual balances on a daily basis.

are self-employed and whose employer sponsors a PRPP are currently eligible to join one. This must change if a PRPP-based solution is to take hold. The requirement of an employment link must be removed to allow universal eligibility for a decumulation-only PRPP.

On the plus side, decumulation-only PRPPs could accept all types of registered savings. They also have the potential to draw large numbers of members and achieve effective longevity pooling. However, their governance requirements should be tightened to improve transparency and to address how fiduciary duty is applied, how arm's-length oversight is maintained and how potential conflicts of interest will be addressed.

In addition, the number and type of potential DP pool sponsors needs to be significantly expanded. The current PRPP licensing requirements have been developed with the accumulation phase in mind, requiring frequent valuation of invested assets and sophisticated recordkeeping capabilities to track individual accounts. These are not necessary in the context of a DP pool.

A truly universal and scalable solution for delivering DP pools through PRPPs would require the following critical legislative changes to the PRPP regime:

- **Explicitly allow the creation of decumulation-only PRPPs consisting of only a DP pool.**
- **Adjust the PRPP licensing requirements to suit decumulation-only PRPPs.**
- **Expand the types of entities eligible for a decumulation-only PRPP license to include various kinds of organizations (see box below).**
- **Clarify that there is no requirement for an employment link between the decumulation-only PRPP provider and the DP pool member.**
- **Enact harmonized legislation in all jurisdictions.**



Who Will Provide DP Pools?

Life insurance companies are well-suited to the role of DP pool provider. They are already well integrated within the retirement financial industry as recordkeepers, custodians and annuity providers. They have much of the infrastructure and processes in place to efficiently manage payment of dynamic pension benefits. They also have the actuarial, communication and investment expertise in house to operate a DP pool smoothly. Banks that currently provide RRSPs and RRIFs are also good candidates.

However, it's important to foster a wider range of providers—well beyond the limited number of current PRPP licensees. In particular, legislation needs to support the participation of profit-for-member entities as DP pool sponsors, as evidence shows the profit-for-member model can produce excellent value for members²⁷, outperforming the profit-for-shareholder model.²⁸

Our research interviews identified a broad list of potential DP pool providers that could operate on a profit-for-member basis, including industry associations, unions, fraternal societies, provincial agencies (similar to the agency operating the Saskatchewan Pension Plan, but for decumulation purposes) and large public sector asset management companies (e.g., BCIMC, AIMCo, IMCO, CDPQ, Vestcor, etc.). DC pension plan administrators who wish to benefit from scale by extending their dynamic pension offering more broadly could also be included, as well as large employers with multiple DC plans who want to establish a master DP pool for all their plans.

While we recognize that the profit-for-member segment of the DC decumulation landscape is currently underdeveloped²⁹, we believe it holds tremendous potential. Learning from QSuper's success in implementing its Lifetime Pension, potential DP pool members are attracted to providers who:

- Have earned members' trust through a long history of positive interactions;
- Will likely continue to exist for the duration of the members' lifetimes; and
- Bring together individuals who are naturally willing to share longevity risk.

Industry associations, unions, fraternal societies and certain public sector employers meet all of these criteria.

In addition to profit-for-member organizations, new types of for-profit providers—such as consulting firms and pension-plan-as-a-service providers—may also enter the ring and contribute a source of productive competitive pressure to the major financial institutions.

27. In Canada, large profit-for-member providers such as OTPP and the CAAT Pension Plan have produced significant value for members in the DB sphere in terms of investment, administration and benefit management; their successes could be replicated by large DP pool sponsors. For background on the success of the profit-for-member sector in Canada (i.e., the "Canadian Pension Model"), see Ambachtsheer (2021).

28. When Australia moved to compulsory DC workplace pension participation nearly 40 years ago, superannuation ("super") funds were created by both not-for-profit entities (e.g., governments and labour unions) and for-profit entities (e.g., banks). Research confirms that profit-for-member super funds have materially outperformed profit-for-shareholder funds over this period, in part due to the latter group charging materially higher fees (Productivity Commission, 2018). For a thorough review of the advantages of the "profit-for-member" model over retail, see Santoreneos (2018).

29. As of the time of writing, all five non-Quebec PRPP providers operate on a profit-for-shareholder model. Among the 9 VRSP providers in Quebec, two are profit-for-member entities: the asset management subsidiary of the federation of GP physicians (Société de gérance des Fonds FMOQ inc.) and Desjardins (a financial services co-operative).

3.3 DP Pools Delivered Through Securities

While the federal government was making the necessary changes to income tax legislation to enable DP pools within registered DC plans and PRPPs, an alternative implementation emerged through the securities route, which is not subject to pension legislation.

In mid-2021, the first mutual fund that incorporates longevity pooling arrived on the Canadian market.

Registered with the Ontario Securities Commission (OSC), it is an open-end³⁰ mutual fund governed by the provisions of National Instrument 81-102. It aims to provide a stream of disbursements that includes substantial bonuses to unitholders at higher ages, financed by investment returns and the cancelled entitlements of those who die earlier than expected or voluntarily exit the fund. As with any mutual fund, the disbursements are not guaranteed.

Longevity pooling through a mutual fund requires exemptive relief allowing units of deceased unitholders to be redeemed at less than the fund's net asset value per unit. Furthermore, it is good practice for this type of fund to include additional disclosures in the fund facts document that specifically relate to the longevity pooling aspect – this also requires exemptive relief. So far, the OSC granted both.

Another challenge of the securities-based implementation is that, for mutual funds, both the price per unit and the distributions per unit must be the same for all unitholders. To keep this structure in a fund with longevity pooling, unitholders must be divided into age-based cohorts; otherwise, the pricing becomes unfair. As time passes, the number of unitholders within each cohort decreases, eventually reaching a point (at higher ages) where the longevity protection is no longer effective. This means our third objective (effective protection from longevity risk) is increasingly hampered over

time under a securities-based approach that limits longevity pooling to age-based cohorts. Although exemptive relief could be sought from the OSC to allow unit values and/or distributions to vary, this approach may not be practical from an operational perspective.

The first and second objectives are, however, fully satisfied (uniform treatment of registered savings and universal member eligibility). In fact, a securities-based solution also addresses decumulation of non-registered savings, which a solution rooted in pension legislation normally would not.

The fifth objective, providers willing to put significant resources into marketing the solution and bringing it to scale, is also likely to be met. Similar products by other investment managers will likely follow. In fact, the securities-based implementation may outpace pension-based implementation, at least in the short term.

The securities-based implementation does not currently meet all the governance requirements set out in the fourth objective (robust governance). Most mutual funds are established as a trust. The manager is also normally the trustee, bound to act in the best interests of the investment fund. Here, the manager (who is usually a for-profit entity) faces a conflict of interest, both charging a fee on total assets in the fund to earn revenue and deciding on the level of income distributions paid out from the fund to unitholders. Although mutual funds are required to have an Independent Review Committee to advise the manager, especially around conflicts of interest, it is unclear how a conflict arising from the manager's role as service provider would be handled. Under a typical mutual fund, this is not a significant issue since unitholders who are unhappy with the level of fees can redeem or sell their units. However, in a fund with longevity pooling, the redemption value normally decreases quickly after issue to reflect the disbursements received. Once the redemption value is sufficiently low, the unitholder is essentially

30. "Open-end" means the fund can issue new units at any time. Units can also be redeemed by returning them to the fund. The latter feature is generally not found in other implementations of DP pools.

“stuck” with the investment since it would be disadvantageous to redeem.

In addition to potential conflicts of interest around fees, there is an issue with transparency. There is no requirement under securities legislation for an explicit benefit policy indicating exactly how adjustments to the periodic disbursements will be made. Without this policy, the operation of the DP pool can be quite opaque. The manager of a mutual fund with longevity pooling can, of course, choose to develop an explicit benefit policy, but it would be better for this to be mandatory rather than optional.

In terms of the sixth objective, regulations relating to mutual funds are already harmonized across jurisdictions through a series of coordinated statements of rules (known as “National Instruments”) and a multilateral passport system for registration and oversight. Securities regulators have been willing to consider innovative products and novel approaches, as evidenced by the exemptive relief provided by the OSC. If policymakers wish to promote a securities-based implementation of DP pools, then a standardized approach to investment funds with longevity pooling elements (e.g., through the development of a “model” fund prospectus and disclosures) may reduce the need for exemptive relief for each new fund and speed up adoption by different providers.

Overall, securities-based implementation of DP pools would require the following changes to meet all six objectives:

- **Address inadequate longevity pooling due to shrinking cohorts at advanced ages.**
- **Improve transparency by requiring an explicit benefit policy without discretionary elements.**

- **Clarify how fiduciary duty applies and how conflicts of interest around fees will be addressed.**
- **Develop a “model” fund with longevity pooling to reduce the need for exemptive relief each time a new DP pool is established.**

3.4 Standalone DP Pools

As an alternative to the current direction, the government could create a new, purpose-built legislative “container” for DP pools rooted in the pension paradigm—one that, by design, meets all six criteria. We refer to these as “standalone DP pools” to distinguish them from DP pools within some other container (e.g., a DC plan or PRPP).

Standalone DP pools would *only* provide dynamic pensions. Pension payments would begin as soon as the member joins the DP pool, meaning there would be no deferred benefits and all members would be drawing pensions. The amounts would be recalculated periodically based on an explicit benefits policy.

A standalone DP pool would accept all registered retirement savings, including transfers from any registered pension plan (both DB³¹ and DC), PRPP, RRSP, RRIF and their locked-in counterparts. **This aspect is essential to ensuring access to lifetime retirement income for as many Canadians as possible.**

Importantly, there would be no regulatory requirement for an employment link (past or present) between DP pool members and standalone DP pool providers.

Based on industry feedback, we anticipate that many standalone DP pool providers would want to keep their eligibility rules wide open, letting any individual join³². This would allow the provider to unite greater

31. Many DB plans allow transfers out at retirement, and a transfer to a DP pool would be a natural fit on a voluntary basis. It could also be attractive in the case of plan wind-up as an alternative to annuity purchase, or where the DB plan does not index retirement benefits.

32. Policymakers may wish to set a minimum age for joining a standalone DP pool, such as age 55, which is the common threshold for beginning to draw a pension under DB plans.

numbers of retirees in a single DP pool and reach critical scale more quickly.

Conceivably, large employers with multiple DC plans covering different employee groups would want to set up a standalone DP pool (to be run on a profit-for-member basis) but may not want to extend access to “outsiders.” Under a standalone DP pool framework, they could do so: while the framework would not *require* an employment link for standalone DP pools, it also would not prohibit it.

Since the standalone pension-based DP pool would be subject to pension legislation, robust governance requirements would apply.

Potential providers would include the ones listed earlier, including both profit-for-shareholder and profit-for-member configurations.

Finally, since a new regulatory framework would be created explicitly for this purpose, we are optimistic that the sixth objective of clear, simple and harmonized regulations could be met.

Summary of Implementation Options

	DP pools within DC plans	DP pools within PRPPs	DP pools via securities	Standalone DP pools
1 Uniform treatment of registered savings				
2 Universal member eligibility				
3 Effective protection from longevity risk				
4 Robust governance				
5 Providers are willing and able to bring DP pools to scale				
6 Clear, simple, harmonized regulations				

 satisfied

 needs adjustment

 unlikely to be achieved

3.5 The Elephants in the Room: Fiduciary Duty, Fees and Conflicts of Interest

No matter which type of implementation prevails, fiduciary duty must be attached to the DP pool provider role. Fiduciary duty already applies to administrators of registered pension plans. For members who move their savings from a DC pension plan to a DP pool at retirement, it would be ironic to lose this important layer of protection right when they enter their most vulnerable years. In fact, it is critical to ensuring members' interests are protected after they join the DP pool—a commitment of potentially 40+ years.

In this context, it's important to address the potential for conflict of interest when an entity both fulfills the fiduciary role and sets the administrative and investment fees for the DP pool under the profit-for-shareholder model. One way to manage this conflict is to impose a cap on fees charged by DP pool providers. The existing PRPP regime already includes an effective fee cap of 1.25% of assets³³; this could also be maintained for decumulation-only PRPPs operating DP pools. Alternatively, if the standalone DP pool approach is chosen, a similar fee cap can be included in the new framework.

When considering fee caps, we also need to look at potential knock-on effects. The key question is, how would fee controls impact providers' interest in creating and distributing DP pools? Most industry participants agree the fee controls enshrined in the PRPP regime have contributed to sluggish marketing of these solutions in the accumulation phase by for-profit licensees.

Fast, widespread adoption of new financial products like DP pools requires active promotion by well-known, trusted institutions. It is reasonable to expect that these institutions would be reluctant to engage in enthusiastic marketing in the presence of fee controls. It is also worth noting that many PRPP licensees already have a significant stake in providing LIF/RRIF-type products. Some providers may be reluctant to offer DP pools at all, as this would divert funds from their more lucrative LIF/RRIF stream.³⁴

However, resistance may be lower in decumulation-only PRPPs than in accumulation-based products, since the administrative burden is lower. Our conversations with providers suggest that, at least in the group retirement space, traditional providers would still be able to maintain reasonable profits with a PRPP-like fee cap on DP pools, although this may come at the cost of not-so-innovative strategies for managing DP pool assets.³⁵

Finally, it is important to mention that existing providers' retail distribution channels rely on brokers and advisors who are compensated via significant trailing commissions, in the range of 0.5% to 1% per year on invested assets. Clearly, these commissions could not be maintained in DP pools subject to fee controls. It is also reasonable to assume that, in the absence of these trailing commissions, some advisors would not recommend DP pools to their clients, meaning DP pools may have limited uptake in the retail sphere.

These considerations should temper policymakers' expectations, but the solution is not to abandon fee controls entirely. Instead, it is critical to support the emergence of the profit-for-member model in the DC decumulation space by expanding the range of

33. This fee cap is explicit in Quebec and is set at 1.25% for the default fund and 1.50% for any other fund. Elsewhere, there is an implicit fee cap, as the provider must prove that the fees are at or below fees charged to a DC RPP with 500+ members.

34. In the long run, administration of DP pools should be less costly than administration of LIF/RRIF products, even after considering the cost of actuarial management and oversight. First, DP pools would not need to maintain daily-valued individual accounts. Second, members would have no decisions to make after joining the DP pool, resulting in less pressure on providers' call centres. However, since LIF/RRIF products are not currently subject to fee controls, their profit margins may still be higher, making DP pools unattractive to some providers.

35. Capped fees may discourage for-profit providers from using more expensive asset classes (e.g., real estate, infrastructure, etc.), thus eliminating one of the pooling advantages mentioned earlier. We have seen this occur with PRPPs where the fund lineup includes only index and in-house managed funds instead of the provider's most innovative products.

entities that can act as DP pool providers. New types of for-profit providers without a stake in the status quo should also be supported as a potential source of innovation and greater competition.

3.6 The Regulator's Role

As noted earlier, it is crucial to have a broad list of potential DP pool providers: **any entity represented by a board of trustees should be able to register a DP pool without obstacles.** Securities or pension standards regulators will still need to ensure that the entities approved to provide a DP pool can demonstrate the necessary skills and expertise to design and run it—whether from within the entity (as with some financial institutions), from expert members of the board of trustees or by engaging external expert advisors and service providers.

Regulators should also ensure that providers have appropriate governance in place—including transparency in decision-making and plan operations; appropriate risk management; avoidance of conflicts of interest; and generally ensuring value and fairness for all members. Transparency involves having clear governance and benefit policies, adequately communicating potential risks, rewards and the actual dynamic pension adjustments, and disclosing expenses. To make the latter meaningful, we recommend public disclosure of DP pool operating costs by all providers through a standardized score card that would allow for comparison by prospective DP pool members.



4 Our Call to Action

Throughout our consultations and extensive research, we heard several analogies used to describe the problems with Canada's current retirement income system. The system simplifies (even automates) savings and investments for working Canadians, giving them low-cost solutions and other layers of protection. However, once Canadians move into retirement, they are left to navigate the decumulation side on their own, with access to a large sum of money but no long-term strategy. One interviewed expert likened this situation to downhill skiing: the person is suited up with the best ski equipment, brought up the chairlift and then simply left at the top of the mountain to find their own way down³⁶.

It's a dangerous and inequitable disconnect. As Keith Ambachtsheer, arguably Canada's foremost internationally recognized thought leader on institutional investing and pension governance, has observed:

The \$1.5T in individual retirement savings juxtapositions nicely beside the similar-size asset pool attached to well-designed and managed (largely) public sector quasi-defined benefit plans. While the latter group of plan members have assured lifetime income streams through effective longevity risk pooling mechanisms, the former group does not and people are left to fend for themselves. This is a material inequity in Canada's retirement income system that requires immediate attention.

(K. Ambachtsheer, personal communication, July 26, 2021)

DP pools have the potential to significantly improve the retirement outcomes of Canadians by addressing the alarming gap between the accumulation and decumulation sides of Canada's retirement income system. And they are urgently needed now to provide an accessible and sustainable income solution for the close to 10 million baby boomers (Statistics Canada, 2020b) who are now making retirement financing decisions that will affect them, and their families, for the rest of their lives.

As is often said, "those who have the privilege to know have the duty to act." In this spirit, we invite industry stakeholders and policymakers to join us in working toward successful implementation of DP pools. **Now** is the time to create a better future for millions of retiring Canadians, and for generations to come.

36. Many thanks to René Beaudry for this insightful perspective.

Bibliography notes

Alonso-García, J., Bateman, H., Bonekamp, J., van Soest, A. & Stevens, R. (2018). Saving Preferences After Retirement. (December 11, 2018). Working paper. Available at SSRN: <https://ssrn.com/abstract=3184043>.

Ambachtsheer, K. (2021). The Canadian Pension Model: Past, Present, and Future. *The Journal of Portfolio Management*, 47(5).

Angus Reid Institute (2015). Retirement in Canada: Lots to enjoy about 'golden years,' but financial worries loom large -- especially for those still working.

Armstrong, P. (2018). Where your tax dollar goes. CBC News.

Association of Canadian Pension Management (ACPM), Canadian Association of Retired Persons (CARP), Canadian Institute of Actuaries (CIA), Canadian Life and Health Insurance Association (CLHIA), Common Wealth (CW), International Centre for Pension Management, Rotman School of Management, University of Toronto (ICPM), National Institute on Ageing (NIA), Pension Investment Association of Canada (PIAC). (2018). Enhancing the efficiency of retirement income options for older Canadians.

Association of Canadian Pension Management (ACPM). (2017). Decumulation, The Next Critical Frontier: Improvements for Defined Contribution and Capital Accumulation Plans.

Aston, D. (2021, April 13). New type of pension plan funnels more cash to retirees while they're alive. *The Star*.

Australian Government Actuary (AGA). (2014) Towards More Efficient Retirement Income Products, Paper prepared for the Financial System Inquiry.

Baily, M., & Harris, B. (2019). Can annuities become a bigger contributor to retirement security? *Economic Studies at Brookings*.

Barua, B., Palacios, M., & Emes, J. (2016). The sustainability of health care spending in Canada. Fraser Institute.

Benefits Canada. (2019). 2019 Top 50 DC Plans Report: Where does the future hold for the hybrid pension plans?

Bernhardt, T., & Donnelly, C. (2019). Modern tontine with bequest: innovation in pooled annuity products. *Insurance: Mathematics and Economics*, 86, 168-188.

Bill 2018: Social Services and Other Legislation Amendment (Supporting Retirement Incomes). (2019). Bills Digest No. 80, 2018-19. Parliament of Australia.

Bill C-30: An Act to implement certain provisions of the budget tabled in Parliament on April 19, 2021 and other measures. (2021). 43rd Parliament, 2nd Session. Parliament of Canada.

Blanchett, D., & Finke, M. S. (2021). Guaranteed Income: A License to Spend. Available at SSRN: <https://ssrn.com/abstract=3875802>

Boyle, P., Hardy, M., Mackay, A., & Saunders, D. (2015). Variable payout annuities. Working paper, Pension Section Research Committee, Society of Actuaries.

Bushnik, T., Tjepkema, M., & Martel, L. (2018). Health-adjusted life expectancy in Canada. Statistics Canada.

Canada Revenue Agency (CRA). (n.d.). RPP Consultation Session - Questions from the Industry November 21, 2002. <https://www.canada.ca/en/revenue-agency/services/tax/registered-plans-administrators/consultation-sessions/rpp-consultation-session-questions-industry-november-21-2002.html>

Canadian Institute for Health Information (CIHI). (2020). Pandemic Experience in the Long-Term Care Sector: How Does Canada Compare With Other Countries?

- Canadian Life and Health Insurers' Association (CLHIA). (2019). Submission on the July 30, 2019 Proposals to Improve the Tax System, presented to the Department of Finance Canada. October 7, 2019.
- Challenger. (2020). What the changes to the social security means test rules for lifetime income streams could mean for you.
- Chandler, D. (2020). Classification of Risk Sharing in Pension Plans: Canadian Practices and Possibilities. Society of Actuaries.
- Collie, R. (2016). "How Big Is Longevity Risk?" *Investments & Wealth Monitor*, May/June 2016. Investment & Wealth Institute.
- De Nardi, M., French, E., & Jones, J. B. (2006). Differential Mortality, Uncertain Medical Expenses, and the Saving of Elderly Singles. NBER Working Paper No. w12554, Available at SSRN: <https://ssrn.com/abstract=933599>
- Donnelly, C. (2015). Actuarial fairness and solidarity in pooled annuity funds. *ASTIN Bulletin* 45 (1): 49-74
- Dyck, I. J. A., & Pomorski, L. (2011). Is Bigger Better? Size and Performance in Pension Plan Management. Rotman School of Management Working Paper No. 1690724, Available at SSRN: <https://ssrn.com/abstract=1690724>.
- Ezra, D. D. (2018). Making the money last: The case for offering pure longevity insurance to retiring Canadians. C.D. Howe Institute Commentary, 521.
- Financial Consumer Agency of Canada. (2021, May 11). Annuities.
- Financial Services Regulatory Authority of Ontario (FSRA) (2021). 2020 Report on the Funding of Defined Benefit Pension Plans in Ontario.
- Finke, M. S., Howe, J. S. & Huston, S.J. (2017). "Old Age and the Decline in Financial Literacy." *Management Science* 63(1): 213-230.
- Forman, J. B., & Sabin, M. J. (2014). Tontine pensions. *U. Pa. L. Rev.*, 163, 755.
- Fullmer, R. K. (2019). *Tontines: A Practitioner's Guide to Mortality-Pooled Investments*. CFA Institute Research Foundation.
- Greenough, W. C. (1990). *It's My Retirement Money—Take Good Care of It: The TIAA-CREF Story*, Homewood, IL: IRWIN for the Pension Research Council of the Wharton School, University of Pennsylvania.
- Huang, L., & Lalani, M. (2015). Corporate Pension Risk Management and Corporate Finance: Bridging the Gap between Theory and Practice in Pension Risk Management, Society of Actuaries., August 2015
- Iwry, J. M., Haldeman, C., Gale, W., & John, D. (2020). Retirement tontines: Using a classical finance mechanism as an alternative source of retirement income. The Brookings Institution: Washington, DC
- Johnson, J., & Duthie, S. (2021). *Elder Abuse: You Have a Role to Play*. Prominence Publishing: Vancouver, BC.
- Kosarenko, R. (2017). Fiscal Impact of Permitting Late-Life Deferred Annuities. Available at SSRN: <http://dx.doi.org/10.2139/ssrn.3642878>
- Love, D. A., Palumbo, M. G., & Smith, P. A. (2009). The Trajectory of Wealth in Retirement. *Journal of Public Economics*, 93(1-2), 191–208.
- Love, D. A., Smith, P. A., & McNair, L. C. (2008). A new look at the wealth adequacy of older U.S. households. *Review of Income and Wealth*, 54(4), 616–642.
- MacDonald, B.-J. (2018). *Headed for the Poorhouse: How to Ensure Seniors Don't Run Out of Cash Before They Run Out of Time*. C.D. Howe Institute Commentary, 500.
- MacDonald, B.-J., (2020). *Get the Most from the Canada & Quebec Pension Plans by Delaying Benefits: The Substantial (and Unrecognized) Value of Waiting to Claim CPP/QPP Benefits*. National Institute on Ageing, Ryerson University
- MacDonald, B.-J., Wolfson, M., & Hirdes, J. (2019). *Future Co\$t of Long-Term Care in Canada [White paper]*. National Institute on Ageing.

- Milevsky, M. (2015). *King William's Tontine: Why the Retirement Annuity of the Future Should Resemble its Past*. Cambridge: Cambridge University Press.
- Milevsky, M. A., & Huang, H. (2018) The Utility Value of Longevity Risk Pooling: Analytic Insights. *North American Actuarial Journal*, 22(4), 574-590.
- Milevsky, M. A., & Salisbury, T. S. (2015). Optimal retirement income tontines. *Insurance: Mathematics and economics* 64, 91-105
- Milevsky, M.A., & Salisbury, T.S. (2021). Refundable Income Annuities: Feasibility of Money-Back Guarantees (August 30, 2021). Available at SSRN: <https://ssrn.com/abstract=3914341>
- Milevsky, M. A., Salisbury, T. S., Gonzalez, G., & Jankowski, H. (2018). Annuities versus Tontines in the 21st Century, Retirement Section Research Committee, Society of Actuaries.
- Millard, C. E. F., Pitt-Watson, D., & Antonelli, A. M. (2021). *Securing a Reliable Income in Retirement*. Georgetown University Center for Retirement Initiatives.
- Minister of Finance (2019). Budget Plan 2019, 361-362.
- National Institute on Ageing (NIA). (2019). *Enabling the Future Provision of Long-Term Care in Canada [White paper]*. National Institute on Ageing.
- National Institute on Ageing (NIA) & Telus Health. (2020). *Almost 100 per cent of Older Canadians Surveyed Plan to Live Independently in their Own Homes, But Is This Even Possible?*
- OECD (2020), *OECD Pensions Outlook 2020*, OECD Publishing, Paris.,
- OECD (2021), *Net pension replacement rates (indicator)*. doi: 10.1787/4b03f028-en (Accessed on 27 September 2021)
- Office of the Chief Actuary (OCA). (2015). *Actuarial Study No. 16 on the Canada Pension Plan Retirement, Survivor and Disability Beneficiaries Mortality Study*, June 2015. Office of the Superintendent of Financial Institutions.
- Office of the Chief Actuary (OCA). (2020). *Actuarial Report (16th) on the Old Age Security Program*, June 2020. Office of the Superintendent of Financial Institutions.
- Poterba, J., Venti, S., & Wise, D. (2011). The Composition and Drawdown of Wealth in Retirement. *Journal of Economics Perspectives*, 25(4), 95-118.
- Productivity Commission (2018). *Superannuation: Assessing Efficiency and Competitiveness*, Report no. 91, Canberra.
- Qiao, C & Minney, A. (2015) *How to Make Group Self-Annuitisation a Popular Retirement Product: Practical Challenges and Solutions for Super Funds*. Actuaries Institute 2015 Actuaries Summit.
- QSuper (2021a). *Why QSuper? #1 fund for weathering market ups and downs*.
- QSuper (2021b). *Lifetime Pension: Enjoy retirement, knowing you've got an income for life*.
- Roberto, K. A., & Teaster, P. B. (2011). *The MetLife Study of Elder Financial Abuse: Crimes of Occasion, Desperation, and Predation Against America's Elders*. Report for MetLife Mature Market Institute.
- Rohde, N., Tang, K. K., Osberg, L., & Rao, D. P. (2017). Is it vulnerability or economic insecurity that matters for health?. *Journal of Economic Behavior & Organization*, 134, 307-319.
- Santoreneos, A. (2018). *The never-ending story—industry vs retail super funds*. Money Management.
- Social Services and Other Legislation Amendment (Supporting Retirement Incomes) Bill 2018*.
- Society of Actuaries (SOA). (2016). *Society of Actuaries' 2015 Risks and Process of Retirement Survey*. Society of Actuaries.
- Statistics Canada. (2020a). *Pension Plans in Canada, as of January 1, 2019*.
- Statistics Canada. (2020b). *Demographic estimates by age and sex, provinces and territories*.

Statistics Canada. (2021). Pension Plans in Canada, as of January 1, 2020.

Stone, M., & Siegel, S. (2020). Defined benefit plans and COVID-19: Immediate Challenges for Pension Sponsors. Society of Actuaries.

Teachers Insurance and Annuity Association of America. (2021). Q1 2021 Facts and Stats.

The University of British Columbia (UBC). (2017). The University of British Columbia Faculty Pension Plan: History from 1967 to 2017.

The University of British Columbia (UBC). (2020). UBC Faculty Pension Plan 2020 Annual Report.

The University of British Columbia (UBC). (2021). The Variable Payment Life Annuity Explained.

Weinert, J-H., & Grundl, H. (2016). The Modern Tontine: An Innovative Instrument for Longevity Risk Management in an Aging Society. ICIR Working Paper Series No. 22/2016. Available at SSRN: <https://ssrn.com/abstract=3088527>

Wolfe, B., & Brazier, R. (2017). Spending retirement assets ... or not? Blackrock Retirement Institute. November 2017.

Yaari, M. (1965). Uncertain Lifetime, Life Insurance, and the Theory of the Consumer, 32 REV. ECON. STUD. 137.



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