7 Steps Toward Better CPP/QPP Claiming Decisions

Shifting the paradigm on how we help Canadians

Step #4:

Providing the Right Information in the Right Way: Removing the Biases in CPP/QPP Communications and Empowering Informed Decisions

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Paper Series Background: 7 Steps Toward Better CPP/QPP Claiming Decisions

Overview

Shifting the paradigm on how we help Canadians.

Introduction

Opportunities and obstacles to shifting the paradigm.

Step #1

A New Framework Tailored to the Retiree's Perspective.

Step #2

Making a Case for Secure Pension Income.

Step #3

Retiring problematic narratives.

Step #4

Providing the Right Information in the Right Way.

Step #5

Strategies for strengthening the felt bond between the current and future self.

Step #6

Framing the short-term financial benefits.

Step #7

Offer additional insights and actions for policymakers, employers and industry professionals.

When to claim benefits from the Canada Pension Plan (CPP) — or its Quebec counterpart, the Quebec Pension Plan (QPP) — is one of the most important retirement financial decisions Canadians will make.

By waiting until age 70 to claim, Canadians can receive more than double the monthly pension amount than if they had claimed benefits at age 60. These higher payments last for life and are indexed to inflation. That's why for people who can afford to wait without hurting their lifestyle — either by drawing on personal savings or by working longer — choosing to wait to claim is a safe and inexpensive strategy that increases their lifelong income.

However, although most people can afford to wait, an overwhelming majority (9 in 10) choose to take their CPP/QPP benefits by age 65, reducing the lifetime income security they say they want and will most likely need.

This paper series aims to shift the paradigm toward more informed decision-making. Its purpose is simple: to propose new ways that those in positions of influence — such as financial advisors, pension plan sponsors, and policymakers — can help Canadians understand and benefit from the value of delaying CPP/QPP benefits.

The solutions are aimed at participants transitioning to retirement for whom delaying CPP/QPP benefits is in their best interests, but the solutions also support choosing to claim early where circumstances warrant this choice.

In either case, improving the clarity of the decision and helping people better understand their choices — and the consequences of those choices over the short and long term — leads to more informed and confident decisions, peace of mind and, ideally, better retirement outcomes for all.

Table of Contents

Table of Contents

Paper in Brief

Background

Deciding when to claim Canada Pension Plan/ Quebec Pension Plan (CPP/QPP) benefits is one of the most important financial decisions Canadians make. While claiming early can be a critical lifeline for financially vulnerable older adults, many participants who can afford to wait are gravitating toward traditional "benchmark" ages and forfeiting a valuable opportunity to secure a higher lifelong pension. In 2021 — despite having the option to start claiming benefits at any time from age 60 to age 70 — six out of 10 eligible participants claimed CPP at two specific ages: either age 60 or age 65.

Why is This So, and What Can Be Done?

Research shows the government can powerfully influence retirement income decisions and behaviour — not just by what is said but by how and when it is said.

One challenge to an informed CPP/QPP benefit-claiming decision is that it involves complex, long-term considerations, and it is naturally difficult for people to see beyond the short term. Well-presented information that is clear, useful and personally relevant from a credible source can help people navigate this challenge, making it easier to reflect on their personal priorities and exercise judgment in their own best interest. Poorly designed communications have the opposite effect. As a result, "good decisions depend, critically, on subtle elements of how the choices are presented." (Johnson et al., 2013, p.1).

Leveraging Canadian and U.S. research, this paper identifies unintended psychological influences in current government communications that can lead people to claim benefits at ages 60 and 65. It then proposes alternative approaches based on research and evidence to empower more informed decision-making.

It's important to note that this paper is NOT proposing any changes to CPP/QPP benefit design, such as the age of eligibility or the benefit amounts offered at any particular age. Nor is it suggesting that Canadians experiencing poverty should prolong their financial hardship by waiting for a higher CPP/QPP pension. Instead, this paper advocates for better support for Canada's older adults to make informed decisions on CPP/QPP claiming, which will have significant long-term impacts on their financial situation.

For many Canadians, starting CPP/QPP at a later age can offer significant financial benefits, but there is limited awareness and uptake of the option to delay claiming. A recent large-scale evaluation of Service Canada and its delivery of the CPP program reported that more than 60% of questions

asked of Service Canada specialists by the public related to understanding the right time to apply for public pensions. Unfortunately, the evaluation concluded that the "information related to the Canada Pension Plan Retirement Pension, available through all channels, is not sufficient to support clients' optimal decisions with respect to their Retirement Pension." (Employment and Social Development Canada (ESDC), 2019, p. v).

This paper provides evidence-based guidance on best practices to support policymakers and those responsible for administering CPP in addressing these concerns. Administrators of the QPP can similarly benefit. We present solutions that aim to enhance individual competencies so claimants can better align their choices with their priorities and individual circumstances. By catering to their natural psychological responses to complex decisions, these solutions are designed to help people better understand the nuances of the claiming decision and improve their ability to make the best choice for themselves.

The good news is, there is strong and growing interest from policymakers and CPP/QPP administrators in supporting more informed decision-making. Service Canada's "Retirement Hub" web portal, launched in June 2023, shows substantial progress that reflects the spirit of this paper's findings and is an excellent step in the right direction. Retraite Québec has a similar website (Retraite Québec, n.d.-a), and has introduced new communications and policies to improve decision-making among QPP participants. We hope this paper will serve to validate, support and empower these efforts.

Key Findings

The problem: The way current communications are framed by government administrators can lead to early claiming that is not always in the best interests of participants, based on their individual circumstances and priorities.

1 Framing and terminology around the claiming age range: Service Canada currently refers to age 60 as the "qualifying" age for CPP benefits and calls age 65 the "standard age to start the pension." The adjustment factors are presented using 65 as the reference age, with reductions in benefits before age 65 and increases after age 65. Research suggests these descriptions can increase claiming activity at ages 60 and 65. CPP/QPP administrators should consider developing communication materials that improve transparency and support optimal claiming decisions tailored to individual circumstances. To this end, this paper proposes the following measures:

a. **Improve terminology:** Adopt the terms "Minimum Benefit Age" when referring to age 60 and "Maximum Benefit Age" when referring to age 70. These evidenced-based terms offer a simple yet impactful way to help participants make more informed decisions.

b. **Use a neutral term for age 65:** Avoid referring to age 65 as the "standard age to start your retirement pension," as this could be misinterpreted as a government-recommended claiming age and divert attention away from the full range of choices. More neutral terms — such as "the reference age for benefit calculations" or "the basic amount age" — should be used,

conveying that it is the amount that is standard rather than the age.

c. **Reframe age-adjustment factors:** Shift the reference point from age 65 to age 70 (CPP) or 72 (QPP) to better illustrate the full effect of the age-adjustment factors. Emphasizing the financial drawbacks of early claiming, rather than the benefits of delaying, has been found to be an effective way to encourage long-term thinking. It triggers the powerful "loss aversion" response by shifting the focus from pursuing short-term gains to avoiding a reduction in lifetime benefits. There are various ways to reframe the adjustment factors, and testing will be required to determine the best approach to increase understanding and ensure optimal decision-making for the claimant.

d. **Clarify maximum pension terminology:** Redefine "Maximum Retirement Pension" — often cited as a benchmark for the potential CPP/QPP pension — to refer to the amount payable at the "Maximum Benefit Age" rather than at age 65.

2 Influence of the "age 60 letter" from CPP/QPP administrators on claiming behaviour:

Service Canada sends a letter to CPP participants a few months before they reach age 60, informing them of their entitlement to a CPP pension. Until recently, a similar letter was sent to QPP-eligible recipients. Proactively sending information directly to the public to encourage awareness of their entitlements is ultimately beneficial, but there are some challenges with the current execution. While these communications aim to streamline administrative processes, evidence suggests they can influence early claiming. Communications should be designed and timed to enhance participants' decision-making capacity rather than nudging them toward a quick decision or implying that the government endorses early claiming.

Research and evidence can guide policymakers on intentional communications: well-timed and appropriately framed information that empowers participants to better understand their entitlement and the full range of choices well before they need to make this significant decision. The following measures are suggested:

a. **Send communications to participants several years before they reach age 60**, giving them the time and emotional space to understand their options and plan for their future in a way that suits their circumstances. Receiving appropriate educational material earlier can encourage slower and more careful thinking.

b. **Adopt transparent terminology and adjust framing,** as discussed in #1. For example, move the narrative from "you are eligible to apply for CPP now" to "CPP provides a maximum benefit automatically starting at age 70, but you can choose to take it earlier with reduced payments."

c. **Create opportunities for participants to mentally pre-commit to the age at which they would like to start claiming CPP/QPP benefits,** with the option to change their mind. This type of "pre-commitment" strategy has been highly successful in helping people save more effectively for retirement. It allows people to create a mental plan while they have time to contemplate this complex decision and adjust their finances accordingly, rather

than leaving the decision to the last minute when impulsive, short-sighted thinking tends to take over.

d. **Invoke "social norms" by highlighting the recent trend toward later claiming ages.** For example, "During the last decade, more and more people who can afford to wait are delaying their pensions until after age 65. In fact, the number of participants starting their pensions at age 70 has grown dramatically!"

e. **Inform disability pension recipients of their entitlement to a postponed pension.** Currently, disability pensions expire and the retirement pension starts automatically at age 65 for CPP and at age 60 for QPP. This automatic enrollment may or may not be in the best interest of participants with disabilities. They should be presented with the same information and options as other participants.

The problem: CPP/QPP participants do not currently receive the information they need to make an informed decision on when to start claiming benefits.

Service Canada and Retraite Québec send statements to participants that include estimates of future CPP/QPP benefits at alternative claiming ages. Participants also have access to the Canadian Retirement Income Calculator (Government of Canada, n.d.) and the Retraite Québec Pension Estimator (Retraite Québec, n.d.-c), which they can use to project CPP and QPP benefits at a user-specified claiming age. While these tools lay the foundation for more person-centric support, they have limitations in helping participants understand the advantages of delaying benefits claiming.

Computing the CPP/QPP benefit for alternative claiming ages depends on various personal and economic factors, as well as the detailed provisions of CPP/QPP legislation — most of which are currently overlooked by the projection tools and the basic pension estimates provided by Service Canada and Retraite Québec. Additionally, the existing tools do not take into account the significant impacts that taxes and government transfers can have on the value of alternative pension amounts.

Calculating the CPP/QPP pension at alternative claiming ages based on detailed earnings data is beyond the capacity of participants and even most professional advisors. Experts who attempt to provide personalized advice face challenges due to the complex CPP/QPP rules, as well as the extensive personal and public data required for accurate calculations.

Evidence suggests this information gap can contribute to early claiming. Unreliable or

incomplete information can lead people to take mental shortcuts and make short-sighted decisions, while more complete, personalized information fosters informed long-term decision-making. ESDC's large-scale evaluation of its services (2019) concluded that "individuals must have personalized information such as how much they have contributed to the Canada Pension Plan over the contributory period and what their estimated benefit is in order to understand how this benefit amount might be affected by the various pension provisions including the age when they begin their pension" (p. v)

This paper proposes the following additional supports:

a. **A Government-sponsored "Basic" pension estimator for all CPP/QPP participants:** At a minimum, participants should be able to get answers to basic questions about their pension entitlements, including how different claiming ages will affect their benefits, and the implications of future career earnings and contributions. This can be best achieved through a government-sponsored online calculator that (i) directly inputs the individual's entitlement data held by the CPP/QPP administrators; (ii) enables the user to input future earnings and contribution estimates; and (iii) accurately estimates future pensions at alternative ages, incorporating all of the complicating rules of CPP/QPP benefit calculations. According to results from the 2018 Government of Canada website poll by ESDC on "Canada Pension Plan and Old Age Security Deferral Awareness," four out of five respondents said they would like an online calculator to estimate pension amounts at different ages (ESDC, 2020). Research shows effective, personalized online tools inform decision-making and help participants avoid falling prey to natural biases that impact their decisions, such as mental shortcuts and overconfidence.

b. **A Government-sponsored "Beyond the Basics" projection tool suitable for most but not all CPP/QPP participants:** In addition to providing basic personalized pension estimates, governments should create a retirement income planning tool that calculates the spendable income ordinary citizens can expect to receive from Canada's complex system of public pensions and income-tested social benefits (CPP/QPP, OAS, GIS and others), net of income taxes. Such a tool would generate meaningful answers to retirement transition questions, including the interaction between CPP/QPP and OAS claiming age and GIS benefits. It would be particularly beneficial to underserved, financially vulnerable pre-retirees, who will rely primarily on these income sources and are much more impacted by their features.

c. **Industry-sponsored retirement financial planning tools and advice:** Participants who rely heavily on financial investments in retirement will need professional support from the financial services industry. With better data from the government "Basic" pension estimator, industry experts can undertake more accurate individualized analyses and give more targeted advice on investment and tax strategies. This paper reviews key features of industry-sponsored, computer-based retirement income modelling tools as put forward by the Association of Canadian Pension Management (ACPM, 2022).

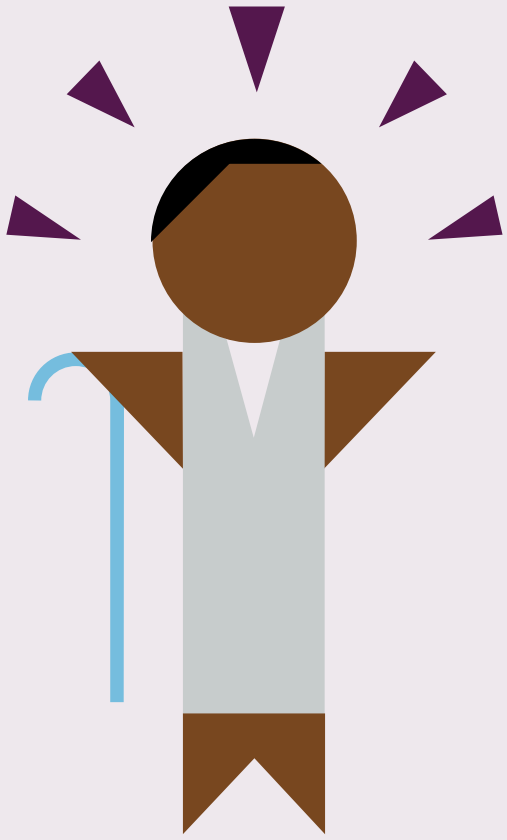
Moving forward

"Given the complexity of the Canada Pension Plan Retirement Pension, clients expect the government to better support them in making informed and optimal decisions by more proactively providing sufficient information."

(ESDC, 2019, p. 40)

ESDC's large-scale internal evaluation powerfully demonstrated excessive confidence and uninformed decision-making among the vast majority of CPP claimants, who largely "do not know what they don't know" (ESDC, 2019). "Evidence indicates that very few clients actually know with any specificity what the difference in their monthly benefit is if they retire earlier than age 65." (ESDC, 2019, p. 41). This paper recognizes and supports the ongoing efforts of CPP/QPP administrators to address this information gap. The goal is to replace existing communication that can inadvertently encourage early claiming with resources that enhance Canadians' ability to make good decisions based on their unique circumstances. Well-designed, quality, credible, and personally relevant information will not only boost knowledge, it has also been found to enhance public confidence in CPP/QPP-type programs and the government in general.

"In recent years, policymakers have shown mounting interest in using behavioural science to make government simpler, less expensive and more effective" (Hertwig, 2017, p. 143). An essential feature of the solutions proposed in this paper — improving the current communications and existing tools — is that they do not require CPP/QPP plan reforms or other overhauls to our retirement income system. Evidence shows these practical, low-cost and actionable steps, which administrators could adopt with relative ease, will encourage more thoughtful decision-making and can have a significant impact on long-term retirement income security. The advantages go beyond benefiting participants who are making the CPP/QPP claiming decision: improving retirement financial security by making the retirement income system more efficient and effective is a key step in safeguarding the welfare of Canada's ageing population and the systems that serve them.



Introduction

What Are the Issues?

Evidence suggests most participants who claim CPP/QPP benefits early do so with little to no knowledge of the financial penalties. Employment Social Development Canada (ESDC)'s internal evaluation revealed that while 87% of survey respondents claimed to "fully" understand the impact of their starting age on their monthly benefit amount, focus groups found that people "don't know what they don't know" (ESDC, 2019, p. 40). "Evidence indicates that very few clients actually know with any specificity what the difference in their monthly benefit is if they retire earlier than age 65." (ibid, p. 4).

According to the 2023 NIA Ageing in Canada Survey, only one in seven CPP/QPP recipients reported putting significant effort into this decision, with the rest reporting they had given it "some time and attention" or had "made the decision quickly without giving it much thought" (Macdonald, 2024). Even more alarming, nearly four out of 10 said they consulted nothing and no one before claiming (ibid). A survey conducted by Retraite Québec in 2021 further emphasized this lack of attention, particularly for those claiming early. It found the majority (58%) of QPP recipients who claimed benefits at age 60 did not seek advice from anyone on the best time to start claiming (Retraite Québec, 2023).

The findings of ESDC's internal evaluation vividly revealed a lack of basic information and support for CPP participants (see Box A). They point to major gaps in the communications, particularly regarding the benefit claiming decision: "General program information related to the Canada Pension Plan Retirement Pension, available through all channels, is not sufficient to support clients' optimal decisions with respect to their Retirement Pension." (ESDC, 2019, p. v).

Box A: ESDC Highlights Major Information Gaps and a Need for Support

In 2020, ESDC released an in-depth internal evaluation of "Providing Services and Information to Canadians through Service Canada" focused on "the delivery of information and services for Employment Social Development Canada's 3 main statutory programs: Employment Insurance, Old Age Security (OAS), and the Canada Pension Plan Retirement Pension" (ESDC, 2019, p. iii). Its purpose was to assess the performance of Service Canada's provision of general information and services through three channels (in person, telephone and online), as well as personalized information and services for the CPP. The study included focus groups, front-line Service Canada employee surveys, new beneficiary surveys and internal performance analytics. This internal evaluation revealed a widespread need for information and support among claimants when making the CPP claiming decision:

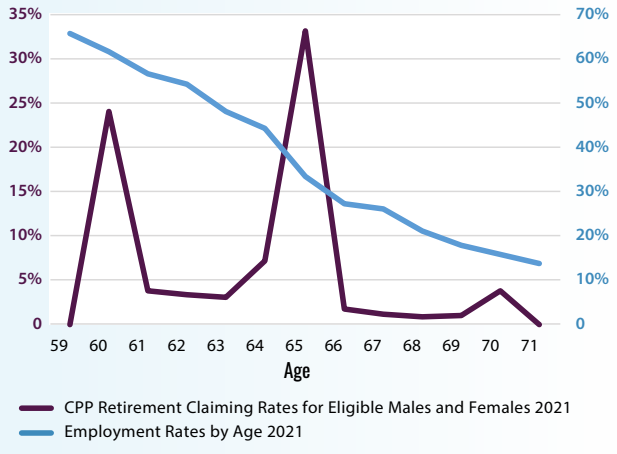
> Focus group results suggests that many clients find the process of trying to inform oneself in order to make the best possible decision 'daunting,' even for those who were comfortable and confident in doing their own research. These findings spanned all

> categories of focus group participants — urban/rural/remote, all education levels, and whether or not the individual is a member of a potentially vulnerable group, such as Indigenous or immigrant. While front line employees report that pensions clients often ask for advice, few surveyed clients are prompted to consider key factors in deciding when to begin their Retirement Pension, very few consulted a financial advisor, and a minority of surveyed clients accessed Government of Canada personalized information and tools that could support them to make a fully informed and optimal decision regarding when to begin their pension. The comments made by several of the participants indicated a feeling of being without support to help them understand how to make this important life decision. Across the groups, participants desired more information and support and several comments indicated a lack of knowledge of available supports. **Moreover, focus group evidence is clear and consistent across focus groups that clients want the Government of Canada to provide them with more proactive direction to support them to make an informed and optimal decision.** (emphasis added; ESDC, 2020, p. 43)

Given the costs of the CPP/QPP programs — which amount to billions of dollars for administration alone — failing to help the public understand the benefit claiming decision severely compromises performance. This paper series has already established that the claiming decision is one of the most consequential financial choices a person will ever make (MacDonald, 2020; MacDonald et al., 2024b). Participants should know the degree to which starting CPP/QPP benefits early will reduce their monthly benefits for the rest of their lives. They also need to understand that early claiming contradicts their stated desire for greater financial security throughout retirement, leaving them more vulnerable to their biggest financial fears: inflation and the risk of running out of money (Macdonald, 2024; MacDonald et al., 2024b).

Another concern is the disproportionate tendency for people to claim benefits at either age 60 or age 65, even though they may begin their pension at any time during the 10-year period from age 60 to age 70. In 2021, six of ten eligible participants claimed CPP benefits at these two specific ages (either age 60 or age 65). The employment trend was relatively smooth for those age groups (the right axis of Figure 1), suggesting that loss of employment income is not, in general, driving this behaviour. Similarly, QPP also has relatively high uptake rates at those ages (Fournier, 2024).

Figure 1: 2021 Canadian Employment Rates and CPP Retirement Claiming Rates for Eligible Recipients by Age



Sources: (1) CPP Claiming rates: tabulations by authors, with data from Office of the Chief Actuary (OCA), February 9, 2024. Based on the 31st CPP actuarial valuation (OCA, 2022); (2) Employment rates: special tabulations by Richard Shillington, with data from the Statistics Canada Labour Force Survey

The key questions are as follows:

- Are there nudges inadvertently provoking these spikes?
- Do retiring participants understand the full range of options and the advantages of delaying benefits?
- If not, what are the opportunities for improvement?

How Can We Address These Issues?

Fortunately, there are many evidence-based solutions that can help. When it comes to influencing financial decisions, "it is easy to identify dozens of ways that thoughtful regulations can influence passive decision-makers without encroaching on the freedom of active decision-makers to opt out of the defaults and choose in their own (perceived) best interest" (Choi et al., 2006, p. 35).

Following the principles outlined in this series, this paper proposes solutions that cater to human psychology and behavioural biases, with two major goals:

1. **Fostering informed decision-making through "boosts"** — interventions whose goal is to make it easier for people to exercise their agency in making choices by fostering or boosting their individual decision-making abilities (Hertwig, 2017); and
2. **Placing an emphasis on long-term financial planning through "nudges"** — interventions that promote an optimal choice without restricting or forcing options (Thaler & Sunstein, 2008; Sunstein, 2014; Thaler & Sunstein, 2021).

This paper aims to support the efforts of CPP/QPP administrators by identifying unintentional psychological nudges and gaps in current communications that can encourage people to claim CPP/QPP at ages 60 and 65, and suggests alternative approaches. The proposed measures focus on boosting individual competencies and nudging behaviour to foster informed decision-making, cater to human psychology and behaviour, and place an emphasis on long-term financial planning.

It's important to understand that our paper does not propose incentivizing any change in retirement age. Although a clearer understanding of the long-term financial consequences of CPP/QPP claiming age might lead some participants to remain in the workforce longer, retiring from the workforce and claiming pensions are two different life events that could coincide, overlap or be more than a decade apart from each other.

This paper also does not endorse any changes to the CPP/QPP benefit design, such as the benefit amount offered at any particular age and the ages of eligibility, nor does it suggest that older Canadians experiencing poverty should prolong their financial hardship by waiting for a higher CPP/QPP pension. As emphasized in the introduction paper of this series (MacDonald, 2024), the public pension's flexibility and availability of benefits at earlier ages play a vital role for older adults with low income. The poverty rate drops sharply for Canadians at age 65, when they first become eligible for OAS/GIS benefits (Statistics Canada, 2022). Raising the minimum age of eligibility would keep vulnerable Canadians in poverty longer, when many of them are GIS-bound and already have disparities in their life expectancies (Statistics Canada, 2024b). In fact, recent research by Canada's Global Risk Institute by Staubli & Zhao (2024) empirically demonstrated the important contribution

of the early CPP/QPP claiming opportunity on the financial well-being of financially vulnerable older adults.

There are other reasons why claiming early can be in a person's best interest, as discussed in the introduction paper of this series (see MacDonald [2024]). For example, people who work in physically demanding or dangerous occupations may not be able to continue working at the same pace or in the same occupation into their 60s, once their health and strength begin to decline. They may need this additional income source to transition out of these types of occupations.

For many Canadians, however, claiming CPP/QPP at a later age can offer significant financial benefits — yet there is limited awareness and uptake of the option to delay. The solutions outlined in this paper aim to enhance individual competencies so claimants can better align their choices with their stated priorities and individual circumstances. These solutions cater to participants' natural psychological responses to complex decisions and encourage a better understanding of the trade-offs when deciding when to claim benefits — especially the drawbacks of claiming early if it's not in their best interest. Well-presented, quality communication from a credible source not only boosts knowledge about social security programs like the CPP/QPP but also improves public confidence in these programs and the government in general (Cook et al., 2010)[1].

The ESDC evaluation (ESDC, 2019) included the following two recommendations:

1. "Explore innovative options to meeting clients' needs for specific, personalized information about their Canada Pension Plan Retirement Pension." (p. viii)
2. "Continue to identify and reduce barriers in accessing services and benefits amongst potentially vulnerable populations and explore inclusive approaches to providing those services." (p. ix)

The measures proposed in this paper align with these recommendations. They present a valuable opportunity for policymakers and those responsible for administering CPP/QPP programs and related low-income supports to improve outcomes and safeguard the welfare of Canada's older population. Financing the social programs that support vulnerable older adults will become increasingly difficult as Canada's population ages. Proactively supporting participants who are financially capable of taking advantage of the CPP/QPP delay option can help them make more informed decisions that enhance their long-term financial security. This, in turn, will help ensure the financial sustainability of income-tested programs for older adults who are in a more precarious financial situation and can't afford to delay.

From this holistic lens of protecting public welfare and enhancing public confidence in government programs, the ability of CPP/QPP administrators to support informed decision-making among participants is a public policy concern that affects all levels of government. The overall goal of this paper is to support policymakers and CPP/QPP administrators by offering evidence-based guidance on best practices around the CPP/QPP claiming decision, ultimately serving the financial interests of all older Canadians.

[1] According to ESDC's online poll on CPP awareness, approximately a third of Canadians said concern that the CPP would run out of money was a main factor in their claiming decision (ESDC, 2020). See paper Step #3, MacDonald & Chandler (2024), for a discussion on the lack of confidence in the CPP/QPP programs.

NUDGES: Fixing the Current Framing of Key Policy Concepts

The problem: The way current communications are framed by government administrators can lead to early claiming, which is not always in the best interest of participants based on their individual circumstances and priorities.

As discussed in the introduction paper of this series (MacDonald, 2024), research finds financial incentives and general financial education alone have a relatively minimal effect on changing behaviour[2]. As a result, *how* the information is communicated becomes very important. "While the economic analysis of choice suggests that issues surrounding incentives and information may determine success, a more psychological analysis suggests that **good decisions depend, critically, on subtle elements of how the choices are presented** to the consumer, as described in an evolving literature on choice architecture." (emphasis added; Johnson et al., 2013, p.1)

Claiming rates for CPP spike at ages 60 and 65, as was vividly shown in Figure 1: six of ten eligible participants in 2021 started claiming at one of these two ages, despite the full 10-year range of choices. The number of people claiming at these two ages cannot be explained by retirement behaviour in 2021. The smoothly declining employment rate trend in Figure 1 (right axis) shows that large-scale withdrawal from the labour force is not driving this clustering of claiming behaviour.

This section reviews several framing practices that, according to research in behavioural economics, are likely to increase claiming activity at ages 60 and 65. It then suggests nudges toward claiming ages that will empower more informed decision-making.

Challenge #1: Framing and terminology of the claiming age range

Returning to Figure 1, there are reasonable explanations behind the spike in claiming at age 60. Since this is the minimum benefit age, claimants at age 60 include those who retired (voluntarily or involuntarily) earlier than age 60 and were forced to wait until age 60 to begin receiving much-needed monthly income from the CPP/QPP. It also includes those who have retired and have sufficient pension income from their workplace pension plan, making the increase in payments from delaying claiming potentially unneeded[3].

Age 60 claiming is also driven by the policies and practices of certain programs for older adults. For example, administrators of provincial social assistance programs and private long-term disability insurance might require or encourage recipients to apply for CPP at age 60. As the "first payer" program, the income from the CPP is then deducted

[2] For example, individuals appear to be uninfluenced by the relative financial advantages of delaying claiming benefits — both in the U.S. (Shoven & Slavov, 2012) and in Canada (Glenzer et al., 2023).

[3] Michaud et al. (2020) found that unemployment, particularly among those with DB pension income, was an important factor explaining early claiming.

dollar for dollar from the program payments, reducing insurer and provincial expenditures. Another example is income-testing rules in social programs such as the Guaranteed Income Supplement (GIS) that make earlier claims financially advantageous (see Appendix A).

The question is, do certain policies and practices of the CPP/QPP administrators encourage participants to start claiming benefits early when these sound reasons don't apply, and when it is not in their best financial interest?

Those in a position to influence the decision need to understand the critical role of "framing." How the information is presented (i.e., framed) has a big impact on people's judgments and decisions, and the CPP/QPP delay incentives are no exception.

Currently, Service Canada presents age 60 as a qualifying age for CPP benefits (Service Canada, 2024c). The emphasis on "qualifying" may lead individuals to focus on the fact that they have reached a significant milestone of benefit eligibility that they should take advantage of as soon as possible rather than realizing they have a full 10-year range of options and there are financial penalties for claiming earlier than necessary.

Service Canada treats age 65 as the central reference age when framing the CPP uptake decision, calling it the "standard age to start the pension" (Service Canada, 2024a). The adjustment factors are presented using 65 as the reference age, with reductions (or losses) in benefits before age 65 and increases (or gains) after age 65. This framing is a reflection of CPP legislation, which determines benefits by reference to the "basic amount of benefit" that would be payable if an individual were 65 years old at their claiming age[4].

This framing is primarily historical. When the CPP/QPP programs were introduced in 1966, the age of eligibility for retirement benefits was 65, meaning benefits were not available until that age. The minimum age was lowered to 60 in 1984 for QPP and 1987 for CPP[5].

Today, however, the "age 65" reference is arbitrary from the perspective of CPP/QPP participants. There are reductions for every month CPP benefits are claimed before age 70 for CPP (and 72 for QPP). What's more, using age 65 as the point of reference has the unfortunate effect of "anchoring" the decision (Tversky & Kahneman, 1974). When facing uncertainty, people put the most value on the first number that enters the discussion, and it becomes the central reference point — no matter how arbitrary that number may be (Neale & Bazerman, 1992).

Service Canada is not alone in using age 65 as a reference. For example, U.S. Social Security claiming behaviour shows significant spikes at age 62 (the "early eligibility age") and 65 (the "full retirement age"). Research has found these terms "anchor" Americans to these ages (Knoll, 2011) and framing with these anchors strongly affects the claiming decision (Behaghel & Blau, 2012; Brown et al., 2016; Lalive et al., 2024). Other countries also

[4] The "basic amount of benefit" is defined in Section 45 of the CPP Act as the monthly pension, determined as if the participant were exactly age 65 at the end of the contributory period. It is an intermediate step in calculating disability, survivor and retirement pensions.

[5] See Box K in the introduction paper of this series, MacDonald (2024), for more background on this reform.

show spikes in claiming ages driven by how the benefit decision is framed (Seibold, 2021). As discussed in Box B, the age 65 benchmark is also prevalent in other areas of Canada's retirement income system.

The traditional focus on age 65 as a reference point for CPP/QPP decision-making influences behaviour and diverts attention from the full range of options available for CPP (10 years) and QPP (12 years). While this focus may have been appropriate in the past, it no longer aligns with the expanded CPP/QPP claiming options introduced since the 1980s. Additionally, it does not reflect the evolving retirement behaviour and attitudes towards working at later ages in Canada. Notably, 2023 marked the first year in nearly half a century that the average retirement age in Canada exceeded 65 (Statistics Canada, 2024a). The traditional age 65 focus also does not acknowledge the diverse retirement income security needs and gaps across Canada's ageing population, which have been exacerbated by a decline in workplace pension plans and other socioeconomic trends (see MacDonald [2024] for discussion).

Box B: Treating Age 65 as "Normal" Retirement

The age 65 anchor isn't unique to CPP/QPP benefits. Age 65 is used — arbitrarily or not — as a reference point in many aspects of Canada's retirement income system (although potential solutions are beyond the scope of this paper). For example:

- **Disability pensions** are automatically converted to retirement pensions at age 65 for CPP and age 60 for QPP.
- **Provincial pension legislation** requires workplace defined-benefit (DB) pension plans to provide an unreduced pension that starts at a "normal retirement age" specified in the pension plan text but no later than age 65.
- **Federal income tax legislation** defines a "normalized pension" payable at age 65 to establish "Pension Adjustments": the offset to an individual's registered retirement savings plan (RRSP) contribution room attributable to pensions from workplace retirement plans. This legislation effectively deters workplace pension plans from defining benefits based on any age other than age 65.
- **Private long-term disability income plans** often expire at age 65, leading disability benefit recipients to switch to retirement pensions and OAS at that age.
- **Social benefits** for older Canadians (including OAS and GIS) are first offered at age 65.
- **"Integrated" workplace defined-benefit pension plans** often provide a larger pension before age 65, with a reduction at age 65 to reflect the portion of the CPP/QPP benefit accrued during workplace pension plan membership.
- **Workplace pension plans that offer an optional bridge benefit** (an increase in pension prior to age 65 with a reduction in pension thereafter) anticipate CPP/QPP claiming at age 65.

- **Default investment options in capital accumulation plans**, such as target date funds, are generally set to align with a retirement age of 65.
- **Illustrations of accrued and projected retirement income** (from workplace pension plans, capital accumulation plans and other private sources) focus on the pension payable at the employer's normal retirement age, which is almost always age 60 or 65.

Solution #1a: Improve claiming-age terminology

As discussed in earlier papers, one of the main barriers to informed CPP/QPP claiming is that it is a complex, long-term decision, and humans find it inherently difficult to see beyond the short term[6]. Intentional framing can help people navigate these challenges — making it easier to reflect on their personal priorities and exercise judgment in their own best interest — while poor framing does exactly the opposite.

Research shows the way government-provided information is framed can have a powerful influence on retirement financial decisions and behaviour (Behaghel & Blau, 2012; Brown et al., 2016; Alonso-García et al., 2021; Seibold, 2021; Lalive at al., 2024). With this in mind, this paper proposes that CPP/QPP administrators instill more helpful framing that encourage people to consider the full range of claiming ages and disregard signals that ages 60 and 65 are recommended claiming ages. CPP/QPP administrators should consider developing communication materials that improve transparency and support optimal, well-informed claiming decisions tailored to individual circumstances, including paying purposeful attention to highlighting the long-term outcomes of the decision.

Adjusting the verbiage around the claiming decision to avoid any perceived government endorsement connected to any specific age can help neutralize the anchoring effect. One way to do this is to deliberately label the options (i.e., the ages at which benefits can be claimed) in a way that conveys their relevance to the individual. A recent study by Perez-Arce et al. (2023) directly tested terminology for the U.S. Social Security system. This study was built on an earlier qualitative foundational study by Filus & Rabinovich (2016) that identified confusion around the terms the Social Security Administration (SSA) used for claiming benefits[7]. For instance, the terms "Early Eligibility Age" and "Delayed Retirement Credits" emphasize the timing of "early" and "delayed" without focusing on the benefit reductions associated with the claiming age.

Based on this research and consultation with SSA staff, Perez-Arce et al. (2023) suggested new alternative terms intended to be more transparent and eliminate inappropriate influences toward claiming at an earlier age.

[6] See MacDonald (2024) for supporting literature, as well as forthcoming paper Step #6, which focuses exclusively on this topic and solutions to overcome it.

[7] "SSA refers to the earliest possible time when individuals can claim retirement benefits as the Early Eligibility Age (EEA) — age 62 — and when they become eligible for unreduced benefits as the Full Retirement Age (FRA), which varies by birth year. Individuals can also earn extra benefits — Delayed Retirement Credits (DRCs) — if they wait to claim beyond their FRA up to age 70. Claiming after age 70 does not result in additional increases in the benefit amount." (Perez-Arce al., 2023, p. 3)

The goals were to increase understanding, reduce confusion and boost confidence, ideally resulting in fewer people claiming benefits before or at age 65 and more people claiming benefits at age 70:

> We set the terms Minimum Benefit Age, Standard Benefit Age, and Maximum Benefit Age as an alternative to Early Eligibility Age, Full Retirement Age, and Delayed Retirement Credit. We hypothesized that terms that are clearer and implicitly convey the reduction of benefits resulting from early claiming ages would improve understanding of the trade-offs between claiming at different ages. We further hypothesized this would allow people to make more informed decisions and delay claiming for some (ibid, p. 2).

Using an online survey that randomized the terminology, they found:

1. The revised terms helped people read the information **faster** AND demonstrate a **better understanding** of the pension program.
2. The effects were particularly strong for those with **low levels of financial literacy**.
3. The gains in understanding **persisted** when tested again several months after the initial experiment.
4. The new terms led to **later intended claiming and retirement ages**, as well as people recommending later claiming ages when presented with fictional scenarios.

"Overall, the results of this study suggest micro-changes in information policy can have measurable effects on peoples' retirement decision-making and, potentially, on their financial security."

(Perez-Arce et al., 2023, p. 19).

U.S. government officials have responded: a bipartisan group of senators has recently proposed adopting those revised terms (Konish, 2023).

Based on this research and the evidence from Figure 1, this paper proposes similar measures for CPP/QPP. For the CPP, for example:

1. Service Canada should adopt the terms "Minimum Benefit Age" when referring to age 60 and "Maximum Benefit Age" for age 70.
2. The term "Standard Benefit Age" should not be used for age 65, as it could be misinterpreted as a government endorsement that this is the recommended age for claiming, diverting attention away from the full range of choices.
3. Any special naming of age 65 linked to CPP/QPP legislation should be used sparingly (see next section for details). If necessary, it's recommended to use a more neutral term, such as "the reference age for benefit calculations" or "the basic amount age," which conveys that the amount is standard, not the age.

There are numerous advantages to implementing these three modest changes. Adopting more precise terms that clearly communicate the role of ages in benefit claiming can immediately improve "clarity

for millions of people, perhaps leading to improved decisions — while incurring only set-up costs." (Perez-Arce et al., 2023, p. 19). Putting equal weight on both endpoints (ages 60 and 70) by adopting similar names can neutralize the differences between them, and lead to a more careful, unbiased consideration of the spectrum of options and the consequences of starting benefits early. Overall, this more neutral framing better supports longer-term retirement financial planning **by moving people's attention toward age 70**, rather than ages 60 and 65. Removing references to age 65 from official CPP communications can also help change how the age for CPP benefits is presented beyond Service Canada.

Fortunately, some of these recommendations are reflected in Service Canada's "Retirement Hub" web portal initiative[8]. The next step would be to adopt these recommendations across Service Canada and all its communications.

In summary, to improve communication about when to claim benefits, communication can be designed to foster a better understanding of the claiming decision by simply giving equal consideration to both endpoints — ages 60 and 70 — using more transparent, unbiased terminology, and removing references to age 65. This approach can lead to a more balanced evaluation of the available options. A similar approach could be adopted by QPP, with its maximum age of 72.

Solution #1b: Reframe the age-adjustment factors

Another simple yet substantial improvement to current public communications would be to **move the reference point away from age 65 and use age 70 (CPP) and 72 (QPP) instead**, to better demonstrate the full effect of the 10-year (CPP) and 12-year (QPP) range when presenting the adjustment factors. This does not mean *changing* the age of eligibility for CPP/QPP from age 65 to age 70/72, but rather using age 70/72 to communicate how benefit rates are impacted by the age at which someone claims.

Table 1 illustrates this concept for CPP, listing the current communication of the statutory adjustment factors that use the reference age of 65 in the first column, the financial incentives relative to age 60 in the second column, and the financial penalties relative to age 70 in the third column[9]. For example, in the last row of Column 2, waiting to claim until age 70 increases benefits by 121.9%[10]. In other words, a $100 monthly benefit at age 60 will increase by 121.9% to $221.90 by waiting until age 70.

It's important to note that these are the CPP age-adjustment factors in isolation. Actual adjustments for claiming age also incorporate a participant's individualized contribution history, real wage gains during the deferral period, and potentially post-retirement benefits. Appendix A describes these complicating factors, and the next section explains how they should be communicated.

[8] For example, under "Key Takeaways" for "Deciding when to start your public pensions," it writes: "The highest monthly amount you can start collecting from your public pensions is at age 70." (Service Canada, n.d.-a)

[9] Note that QPP age-adjustment factors are different, although the principles are the same. See the introduction paper of this series, MacDonald (2024), for further details.

[10] 221.9% = (100%+42.0%)/(100%-36.0%)

Table 1: Alternative Approaches To Communicating The Statutory CPP Benefit Adjustment Factors

Claiming Age	1 Current Approach (Age 65)	2 Gain (Relative to Claiming at Age 60)	3 Loss (Relative to Claiming at Age 70)
60	-36.0%	0.0%	-54.9%
61	-28.8%	11.3%	-49.9%
62	-21.6%	22.5%	-44.8%
63	-14.4%	33.8%	-39.7%
64	-7.2%	45.0%	-34.6%
65	0.0%	56.3%	-29.6%
66	8.4%	69.4%	-23.7%
67	16.8%	82.5%	-17.7%
68	25.2%	95.6%	-11.8%
69	33.6%	108.8%	-5.9%
70	42.0%	121.9%	0.0%

Evidence suggests highlighting losses (as shown in Column 3) is more effective than showing the potential gain (Columns 1 and 2) (Kahneman & Tversky, 1979)[11]. For example, Column 3 shows a 54.9% penalty for taking benefits at age 60 instead of waiting until age 70[12] — meaning a $1,000 monthly benefit at age 70 will be reduced to $451 at age 60.

Table 2 shows alternative approaches that may require fewer mental calculations to demonstrate the large 10-year reduction by framing the impact as multiples of the pension benefits at the Minimum Age, Basic Amount Age and Maximum Age. Further testing is required to determine the approach that will increase understanding and ensure optimal decision-making for the claimant. It's important that the transition to a new approach is presented in a way that does not inadvertently lead Canadians to perceive that pension entitlements are being reduced.

Table 2: Alternative Approaches to Communicating the Statutory CPP Benefit Adjustment Factors as Multiples of the Pension at Minimum Age, Basic Amount Age or Maximum Age

Claiming Age	1 Basic Amount Age Reference (Age 65)	2 Minimum Age Reference (Age 60)	3 Maximum Age Reference (Age 70)
60	64.0%	100.0%	45.1%
61	71.2%	111.3%	50.1%
62	78.4%	122.5%	55.2%
63	85.6%	133.8%	60.3%
64	92.8%	145.0%	65.4%
65	100.0%	156.3%	70.4%
66	108.4%	169.4%	76.3%
67	116.8%	182.5%	82.3%
68	125.2%	195.6%	88.2%
69	133.6%	208.8%	94.1%
70	142.0%	221.9%	100%

U.S. research on Social Security shows the impact of this small adjustment to benefits framing. Fetherstonhaugh & Ross (1999) demonstrated that the choice of Social Security uptake age was strongly affected after moving the reference age up and

[11] The concern people place on losing money is estimated to be twice that of gaining it (Tversky & Kahneman, 1992; Brown et al., 2024)

[12] 54.9% = 100% - (100%-36.0%)/(100%+42.0%)

framing the effect of the decision as a financial loss rather than a gain. Specifically, the proportion of respondents preferring a later age for claiming Social Security benefits moved from 38% to 57%.

A technical term for this behavioural-intervention nudge is **"enhanced active choice."** It addresses situations with no default option, where decision-makers still require an explicit "active" choice. The favoured choice is demonstrated by highlighting the comparative loss of choosing the non-preferred alternative (Keller et al., 2011). Choosing to forfeit 54.9% of the available pension is psychologically painful and puts the potential gain of 10 years of additional benefit payments in a less favourable light.

This paper proposes reframing the age adjustment factors using the third column of Table 2 in public communications, together with personalized pension estimates (discussed in the next section). This framing emphasizes the importance of the delay incentive in a way that shifts focus from pursuing gains to triggering the more powerful "loss aversion" response. It also establishes a later age as a suitable reference point, which could naturally become a more integrated part of the basis for decision-making (see Brown et al. [2016] for evidence).

Another nudge toward age 65 in existing communications is that the "Maximum Retirement Pension" payable starting at age 65 is often cited as a benchmark for the potential CPP/QPP benefit, including on government websites[13]. However, the maximum retirement pension payable is, in reality, the amount payable at age 70 (for CPP) or age 72 (for QPP). Better framing can correct this issue. As with Solution #1a, more accurate terms can help foster greater clarity for CPP participants. **With the adoption of the new framing (Table 2, Column 3), mentions of the "maximum pension" would refer to the *true* maximum pension: the amount payable at the Maximum Benefit Age.**

Solution #1c: Update industry communications

As noted in Box B above, Canada's retirement income industry routinely refers to 65 as the normal retirement age and describes CPP/QPP benefits available at that age. Insurance companies and consulting firms can lead the way in implementing terminology changes in the communication materials they prepare for employers.

Since employers pay half the cost of CPP/QPP, they may see a strategic opportunity to get the best value from CPP/QPP for their employees. Doing so helps ensure the success of their retirement plan and also reduces pressure to finance an increase in employer-sponsored benefits to supplement CPP/QPP benefits that may not provide an adequate lifetime income foundation unless claiming is deferred. What's more, employees see their employer as a trusted information source: a 2019 survey by Eckler Ltd. found 80% of Canadians would like financial education delivered through the workplace (Eckler Ltd., 2019).

Retirement financial-wellness expert Janice Holman, who has focused her career on supporting pension plan members to adopt better behaviours, has found that providing illustrative examples helps employees

[13] "For 2024, the maximum monthly amount you could receive if you start your pension at age 65 is $1,364.60." (Service Canada, 2024b). This is the maximum for an individual who turned 65 and claimed their pension in January 2024.

think about when to draw from different sources. For example, for someone retiring at age 62, one approach could be to draw personal savings alone from age 62 to 65, supplemented by workplace DB or DC plans benefits starting at age 65 and finally, government benefits (CPP/QPP and OAS) at age 70, to ensure they have enough secure, inflation-indexed pension income to carry them through the remaining decades of retirement. "Without showing Canadians how to do it differently than current behaviour, change won't happen."[14]

Challenge #2: Age 60 correspondence to CPP/QPP participants

Another opportunity for improvement is the letter sent to CPP/QPP participants. Service Canada sends a letter to CPP participants a few months before they turn 60, informing them of their entitlement to a CPP retirement pension. Until 2022, a similar letter was sent to QPP-eligible recipients before they reached age 60. For most participants, the letter was accompanied by a pre-filled form, simplifying the process of applying for QPP benefits at the earliest possible date (see Box C).

Box C: QPP & CPP's "Age 60 Letter"

CPP

Until 2015, Service Canada sent correspondence and paper application forms to all participants who were 64 years old and not yet receiving their pensions. This procedure ensured that almost all participants began receiving their pension no later than age 65.

In 2015, as part of the introduction of online applications, Service Canada began sending correspondence to participants at age 59½ and, if they were not yet receiving their pension, again at age 64½. The correspondence included a personal access code for participants who had not already registered for online access to their Service Canada Account. The intent was to encourage a shift from paper to online applications.

The opening sentence of the letter was: "We have good news — you are eligible to apply for your Canada Pension Plan (CPP) retirement pension online!" The large boldface text on the front page stated: "You are one step away from access to the CPP online application." The correspondence included a brief statement ("You can apply for and receive a full CPP retirement pension at age 65 or receive it as early as age 60 with a reduction, or as late as age 70 with an increase") but no details concerning the size of the adjustment or other consequences of claiming age. It was accompanied by a Statement of Contributions that included estimates of the pension payable if the individual was age 60, 65 or 70 on the date the statement was prepared, but with adjustments for age only.

[14] J. Holman, personal correspondence, August 16, 2024.

New Developments

The Contribution Statement was revised in 2020 and included a general discussion of factors to consider when deciding "the best time for you to start receiving your CPP retirement pension." The current version of the letter includes a graphical illustration that "shows that the longer you wait, the more your pension will be." The "how much could you receive" estimates at ages 60, 65 and 70 continue to be calculated with adjustments for age only. However, the following statement is included: "Note: Benefit estimates may not include recent changes to the CPP or take into account future earnings and contributions and CPP provisions that could affect your benefits."

A valuable step forward has been Service Canada's introduction of the Retirement Hub (Service Canada, n.d.-c). This web-based tool explains the pension deferral option using more accessible language and a variety of approaches to communicate the main considerations. For example, the Retirement Hub shows vignettes that explain in thorough detail three scenarios, and the thought process and trade-offs involved. The vignettes follow a story-telling format, together with graphs, key takeaways and relevant links to government websites.

QPP

In 1985, QPP began sending personalized Statements of Participation to all participants aged 59, 64 and 69 or more who had not yet claimed their retirement benefits. These statements provide details of earnings accrued during working years and the potential benefits they could receive. The aim was for participants to understand that these rights were acquired throughout their career (Retraite Québec, n.d.-d, p. 57).

Between 2010 and 2013, a new communication called "Spotlight on Your Retirement" was introduced for participants who reached age 59½. In addition to the participation statement, a simplified form was attached for approximately 60% of eligible individuals, which provided a streamlined process to claim benefits at age 60. Retraite Québec also has a retirement financial planning website that discusses considerations for QPP benefit claiming (Retraite Québec, n.d.-a).

One difference between the CPP and QPP is that the CPP sends only two letters, while the QPP sends several letters years before the expected retirement age. The QPP sends Statement of Participation letters every four years to persons aged 48 and older. The QPP Statement of Participation letter presents an overview of the plan and provides a detailed record of contributions. It also shows how much larger a participant's pension can get if they continue to work versus if they stop working. It is largely neutral in tone and does not endorse a particular claiming age.

New Developments

As of the end of 2022, the QPP simplified form is no longer sent automatically. It must be requested by telephone or by setting up and using an online account. Retraite Québec is also

revisiting web content and personalized communications to better inform participants about the implications of early withdrawals. This aligns with the Quebec government's intention in its 2023-24 budget, which says: "To encourage delaying the start of the pension, Retraite Québec will raise its clientele's awareness of the implications of receiving pension payments before age 65 so that contributors can make the most appropriate and informed choice for their situation" (Gouvernement du Québec, 2023, p. 75).

Proactively sending information directly to participants to encourage awareness of their entitlements rather than making them seek out the information themselves is ultimately a good thing, but there are some challenges with the current model. For example, while providing a pre-filled form or personal access code for online applications at age 59½ may have been done as a matter of administrative efficiency, research findings detailed throughout this series show it's potentially harmful to the purpose of informed and careful decision-making. It is a powerful "nudge" toward early claiming for the following reasons:

- **People unfamiliar with the CPP/QPP program might believe it is a government benefit subject to political whims.** They may see the letter as a sort of government benefit lottery, sending a message that they've been lucky enough to qualify for a government benefit and, like other government handouts, they should claim as much as they can before the political mood swings.
- **Pre-filled forms can be perceived as a government endorsement of claiming at age 60.** Such government endorsements have been found to strongly influence retirement financial decumulation behaviour (Alonso-García et al., 2021; Brown et al., 2016). An implied government endorsement carries more weight than an ordinary recommendation because it can also carry the power of a default (i.e. "default stickiness" [Alonso-Garcia et al., 2021]). "Default rules may well be the most effective nudges" (Sunstein, 2014, p. 585) and are "to date, the most common nudge examined in the pensions literature" (Alonso-Garcia et al., 2021, p. 812). The power of defaults in all aspects of pension plan design has been well documented to strongly influence participants' behaviour patterns in employer-sponsored benefit plans[15], and therefore having unintentional "default stickiness" in any pension plan design is particularly dangerous.

According to a 2021 survey by Retraite Québec (Retraite Québec, 2023), approximately one out of five beneficiaries who received the simplified form and started their pension at age 60 said it had "influenced their decision." It is, however, difficult to know to what extent it did. At the extreme, some could even believe that receiving the simplified form meant they were *required* to claim their pension at age 60.

[15] See Alonso-Garcia et al. (2021) for a review of the literature on the power of defaults and government endorsements. Beshears et al. (2007) explained, "The impact of defaults on savings outcomes extends well beyond savings plan participation. Similar effects have been documented for almost every aspect of retirement saving, including asset allocation, contribution rates, pre-retirement cash distributions, and annuitization" (ibid, 1788). Since then, research has continued to demonstrate the power of defaults in retirement financial planning and decumulation — for example, Bateman et al. (2016) and Dobrescu et al. (2018).

Solution #2: Instill more productive nudges

As discussed, research has long emphasized the importance of being extremely deliberate in exercising the power of nudges in pension plan design. Writing in the context of employer-sponsored pension plans, Choi et al. (2006) said "specifically, at any point in time employees are likely to do whatever requires the least current effort: employees often follow the 'path of least resistance.' Almost always, the easiest thing to do is nothing whatsoever, a phenomenon that we call 'passive decision.' **Such passive decision-making implies that employers have a great deal of influence over the savings outcomes of their employees"** (emphasis added; p. 4).

The same applies to government retirement financial programs. Observing the retirement savings patterns of Norway's population, Chetty et al. (2014) estimated that 85% of people in their sample were "passive" decision-makers, meaning they would not change behaviours based on government financial incentives but would simply follow the path of least resistance. This natural tendency provides an opportunity to change behaviour without expensive reforms to the programs themselves by deliberately designing the path to claiming to foster informed, thoughtful, long-term thinking.

An important contribution that policymakers could make is to focus on ensuring the process of claiming at later ages is as easy as possible, with the fewest administrative obstacles. Thaler & Sunstein (2021) explained that "making it easy" is the magic elixir of encouraging better behaviour: "Resistance to change is often a product not of disagreement or of skepticism, but of perceived difficulty — or of ambiguity" (Sunstein, 2014, p. 586).

While the pre-filled form seems to act as a nudge to early claiming, research and evidence can now guide policymakers on intentional communications that ensure people get well-timed and appropriately framed information that empowers them to understand their full range of options.

Policymakers can contribute significantly by focusing on nudging individuals' attention toward the value of delaying, and by simplifying the process of claiming later to make it easy, with minimal administrative obstacles. Here are some insights and suggestions on strategies to accomplish this:

Revise the "age 60 letter" nudge. The most obvious solution is to address the letter's framing. As described in Box C, this is precisely what the QPP did in 2020. Recognizing the potentially harmful effects of its pre-filled age 60 letter, Retraite Québec stopped sending it, requiring all ages to follow the same process.

Adjust the information framing and terminology. As discussed in Challenge #1, an effective, evidence-based approach for policymakers to support participants in contemplating the full range of claiming choices for CPP/QPP is to adjust the terminology and framing of information. This includes shifting the reference point from age 65 to age 70 for CPP (or 72 for QPP) in communication materials and expressing the impact of the benefit adjustments as a loss of income relative to the benefit at the maximum age.

Adjust the timing of communications. While financial incentives and general financial education may not be effective, more focused and better-timed education that is intentionally tied to an intended behaviour can markedly improve financial decision-making performance (Johnson et

al., 2013; Fernandes et al., 2014). Another step, therefore, is to adopt more deliberate communications, timed and designed to cater to people's psychological biases, recognizing their needs and desires.

Research suggests individuals may become more impulsive as retirement approaches (Bidewell et al., 2006) because people put much more value on their short-term financial self and have a more challenging time making sacrifices for their future self — known as the "present bias"[16]. People can make far-sighted plans for the distant future, but without putting a plan in place, they tend to be more impulsive when the moment arrives to forgo short-term gratification. As a result, a 50-year-old is more likely than a 59½-year-old to consider a plan that imposes a financial sacrifice for their future 60-year-old self.

Recognizing this natural bias, evidence-based solutions have been developed to encourage people to consider their retirement choices earlier. For example, pre-commitment financial strategies, such as the "Save More Tomorrow" plan discussed below, enhance self-control by establishing future financial plans well before the actual decision is made (Thaler & Benartzi, 2004).

With this in mind, the right time to send communication material is several years before age 60, when there is time for participants to adjust their strategies for exiting the labour force and other retirement financial planning choices. The key is to boost participants' decision-making capacity, not to nudge them toward a premature decision, by ensuring they know their entitlements and choices well in advance of making this significant, permanent decision. For example, the SSA began sending "Thinking of Retiring" inserts that include Social Security's program rules for early and delayed uptake (The United States Social Security Administration, 2019). "Receiving this insert each year for 7 years before the earliest entitlement age may urge individuals to think more clearly about the most important aspects of retirement (for example, having enough money to live comfortably in one's older years), without allowing the fleeting excitement of retirement to cloud their judgment" (Knoll, 2011, p. 25). As already noted, QPP has taken the lead by sending out letters every four years, beginning at age 48.

Support more careful, analytical thinking. By receiving appropriate educational material earlier, people can be encouraged to slow down and move from impulsive to analytical thinking, which is less likely to be influenced by biases and errors (Kushniruk, 2001; Kahneman, 2011). More careful thinking can help people overcome the biases that naturally lead to choosing more money now over secure, lifelong pension income in the future. For example, Bateman et al. (2018) found individuals who put more effort into their financial decision-making were more inclined to select lifetime annuitized income over short-term, accessible savings.

Shift attention toward age 70/72. Similar to the choice of defaults in pension plan design, the reference age is an important feature of CPP/QPP communications and a powerful tool for improving claiming decisions. Intentional framing can highlight the age 70/72 claiming opportunity by adopting the solutions proposed to Challenge #1, as well as carefully crafting the message about the loss of benefits. This could be done by flipping the

[16] See the introduction paper of this series, MacDonald (2024), for a full discussion and supporting literature.

narrative from "you are eligible to take CPP/QPP at age 60" to "CPP/QPP is a pension that provides a maximum benefit automatically starting at age 70/72, but you can choose to take it early with reduced payments." For example, Brown et al. (2016) found that leading with an older age in the claiming-age discussion resulted in a later intended age to start claiming benefits.

Use social norms. As Sunstein (2014) explained, "One of the most effective nudges is to inform people that most others are engaged in a certain behaviour. Such information is most powerful when it is as local and specific as possible ('the overwhelming majority of people in your community pay their taxes on time')" (p. 586). In cases where most people are not doing the desired behaviour — such as delaying their CPP/QPP benefits — Sunstein suggested "it can be helpful to highlight not what most people actually do, but instead what most people think people should do" (ibid). Policymakers could invoke social norms by pointing to the recent trend toward later claiming age in their communications to encourage greater reflection[17]. Reinforcing statements could include: "During the last decade, more and more people who can afford to wait are delaying their pensions until after age 65. In fact, the number of participants starting their pensions at age 70 has grown dramatically!" Such statements could cite current statistics.

Create engagement through storytelling. Policymakers can also raise awareness of longevity risks and support the mental preparation needed to make informed, long-term decisions through stories, testimonials and vignettes — such as the vignettes "Bonnie, Fred and Keith" in Service Canada's Retirement Hub (Service Canada, n.d.-c). (Forthcoming paper Step #5 explores such interventions.)

Create opportunities to pre-commit to a later claiming date. A powerful nudge in participant communications that ties together the research already presented — particularly the power of defaults — is to adopt pre-commitment interventions. As noted above, one of the early success stories of applying behavioural economics to retirement financial planning was *"SAVE MORE TOMORROW (SMarT)"* in Thaler & Benartzi (2004), which proposed that employees would save more by working with, rather than against, their psychological biases — such as being overly optimistic about the future, devaluing their future financial needs and inertia — by committing ahead of time to save a portion of future pay raises automatically to their pension plan.

Many CPP/QPP participants claim benefits early because of natural psychological biases that undermine their ability to focus on the long-term implications of their decision. As presented by Thaler & Benartzi (2004)[18], addressing mistakes driven by psychological and behavioural biases similarly requires

[17] While the literature has generally supported the value of using social norms, there are some mixed findings as they relate to complex financial decisions — see Alonso-García et al. (2021) for further discussion.

[18] Thaler & Bernatzi (2004, p. 166) explained *"For whatever reason, some employees at firms that offer only defined contribution plans contribute little or nothing to the plan. In this paper, we take seriously the possibility that some of these low-saving workers are making a mistake. By calling their low-saving behavior a mistake, we mean that they might characterize the action the same way, just as someone who is 100 pounds overweight might agree that he or she weighs too much. We then use principles from psychology and behavioral economics to devise a program to help people save more. The program is called Save More Tomorrow (or SMarT), and the basic idea is to give workers the option of committing themselves now to increasing their savings rate later, each time they get a raise."*

psychological and behavioural interventions. The science behind the proven "SMarT" model, which continues to be widely adopted[19], could be applied to the CPP/QPP claiming choices:

- CPP/QPP participants could first be properly informed about their full range of options, adopting the boosts and nudges given throughout this paper series — including the critical details associated with each option, as discussed in the next section.
- Via their revised letter, they would be encouraged to tentatively pre-commit (i.e., during their early 50s) to the age at which they would like to claim their CPP/QPP benefits, with the option to change their mind. This could be only a mental exercise; however, writing down that age and sharing it with CPP/QPP administrators could make it more effective.

This approach creates a mental pathway participants are likely to follow due to factors such as the status quo bias (Samuelson & Zeckhauser, 1988). The participant can then plan their finances with deliberate care and attention, with sufficient time to contemplate this complex decision, rather than leaving it to the last minute when impulsive, short-sighted thinking tends to take over.

Inform pensioners with disabilities of their entitlement to a postponed pension. A related concern is the need to inform all participants of their entitlement to a postponed pension — regardless of their disability status. Currently, CPP disability benefits expire at age 65, and the retirement pension starts automatically, offering a seamless transition of benefits with no interruption. The QPP has a similar automatic transition at age 60 for its disability pension.

However, automatic enrollment may or may not be in the participant's best interests. For example, the disability might be linked to shortened life expectancy, making immediate claiming a better option. In other instances, a long-standing disability can leave participants without the financial resources to maintain their living standards in retirement, meaning they may need higher pension income. These individuals should have the option to use their RRSPs, if they have any, or other remaining resources to bridge a period without CPP/QPP benefits in exchange for a larger lifetime pension, just like the rest of CPP/QPP participants. Either way, the choice needs to be presented and explained.

Bring in the power of the Canada Revenue Agency (CRA). Another underutilized opportunity is to leverage the annual notice of assessment (NOA) from CRA to make it easier for people to register for a My Service Canada Account (MSCA) and monitor their record of CPP/QPP contributions, accrued pension entitlements, and options.

[19] In Spain, for example, García & Vila (2020) found that this behavioral intervention significantly increased voluntary saving.

BOOSTS: Supplying Empowering Information

The problem: CPP/QPP participants do not currently receive the information they need to make an informed decision about when to claim benefits.

As discussed in the introduction paper in this series, MacDonald (2024), deciding when to claim CPP/QPP benefits is complex. Fortunately, the benefit formula is one dimension of this complex decision that can be addressed. As discussed in this section, CPP/QPP administrators can support more informed decision-making by ensuring that participants can see how much their CPP/QPP benefit will change depending on when it starts and how that change will affect their overall financial situation.

Challenge #3: Estimates of future CPP/QPP benefits lack accuracy and poorly inform the claiming choice

As discussed in Box C, Service Canada and Retraite Québec send statements to participants that include the participant's record of contributory earnings for the period ending December 31 of the most recent year for which contribution data is available, along with estimates of future CPP/QPP benefits at alternate claiming ages. Participants also have access to the Canadian Retirement Income Calculator (Government of Canada, n.d.) and the Retraite Québec Pension Estimator (Retraite Québec, n.d.-c), which they can use to project CPP and QPP benefits at a user-specified claiming age.

While these communications and tools lay the foundation for more person-centric support, when it comes to helping someone understand the advantages of delaying claiming benefits, these estimates are of limited value.

Service Canada's online Canadian Retirement Income Calculator can model OAS, CPP and private pension benefits, but it is not connected to participants' personal data through their My Service Canada Account (MSCA). Therefore, to get a more precise benefits estimate, participants must register for MSCA first, request a Personal Access Code (usually sent by regular mail in a letter), and then obtain access to their Statement of Contributions (SOC) and a pension estimate that can be loaded manually into the Canadian Retirement Income Calculator. This is a cumbersome process for participants.

Moreover, Service Canada's pension projections lack accuracy. The projections only reflect the age age-adjustment factors and post-retirement benefits. Computing the CPP/QPP benefit for alternative claiming ages depends on various personal and economic factors, as well as the detailed provisions of CPP/QPP legislation. Box D reviews the many factors needed to more accurately estimate future CPP/QPP benefits — most of which are currently overlooked by Service Canada's and Retraite Québec's estimates and projection tools. Appendix A reviews these and other factors, and how they can produce conclusions about claiming age that differ from conclusions based on age adjustments alone.

As ESDC's internal evaluation explained: "Individuals must have personalized information such as how much they have contributed to the Canada Pension Plan

over the contributory period and what their estimated benefit is in order to understand how this benefit amount might be affected by the various pension provisions including the age when they begin their pension" (ESDC, 2019, p. v).

The personalized computation is far beyond the capacity of participants and even most professional advisors. Experts who attempt to provide personalized advice are severely challenged by the complex CPP/QPP rules and the detailed earnings information required to perform accurate calculations[20]. Often, they are forced to fall back on undifferentiated advice or estimates from the CPP/QPP administrator's Statement of Contributions that do not look beyond the age-adjustment factors.

Mainstream software packages used by financial advisors typically do not have the functionality to accurately compute the increase in benefits associated with alternative future claiming ages. Limited commercial services have arisen from this gap in communication and support from CPP/QPP administrators.

Doug Runchey, for example, is a retired career employee with the CPP administration who has applied the knowledge he gained while in the Income Securities Program branch to commercially advise other retiring participants on the timing of claiming CPP benefits, answering questions such as the following:

- "Should I start taking my CPP at age 60? at 65? At 70? How much can I expect to receive?"
- "I stayed at home for 10 years to raise my children. How will that affect my CPP benefit?"
- "I'm over age 65 and still working. Should I keep contributing to the CPP?"
- "I'm divorced. If I apply to split my CPP pension credits with my ex-spouse, how will our benefits change?"
- "I'm receiving a survivor's benefit. How will that affect my CPP benefit?"
- "I can no longer work due to a disability. Should I apply for an early CPP retirement pension?"[21]

CPP/QPP participants should not have to pay a fee to get the information they need about their pension entitlements to answer these basic questions. Government estimates need to reflect all of the factors that can materially affect future pension amounts.

Box D: The Complex CPP/QPP Claiming Calculation

Participants can claim retirement benefits as early as age 60, and as late as age 70 for CPP and 72 for QPP. The amount of CPP/QPP at various future dates is a complicated calculation that must be done on a case-by-case basis. The claiming age affects benefit levels in multiple ways:

[20] Even with third-party help, this information is not available in a downloadable format suitable for use in a third party's system, so it is not convenient for use in the online calculators provided by employers, robo-advisors and financial institutions.

[21] Taken from Mr. Runchey's website (DR Pension Consulting, n.d.). A similar service is offered by Jason Yee — see Finepoint Solutions, n.d.

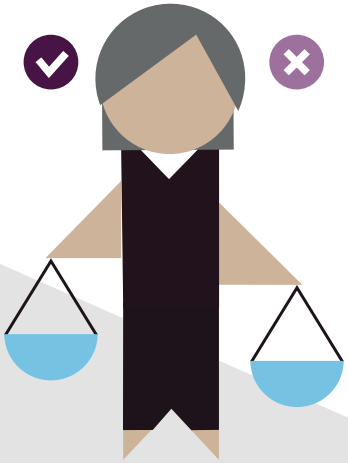
1. **Age adjustments:** First and foremost, actuarial adjustment factors are applied according to the age when payments start.
2. **National wage growth during the deferral period:** The financial incentives to delay benefits are often (but not always) higher than what is communicated to the public due to the role of national wage growth in determining CPP/QPP benefit levels each year. The reason is, the benefit calculation at the time of claiming is based on the CPP/QPP's average national wage metric (the Maximum Pensionable Earnings Average), which usually grows faster than inflation (MacDonald, 2020).
3. **Contributions during the deferral period:** CPP/QPP pensions are calculated based on earnings throughout a participant's "contributory period." The advantage of deferring can be higher or lower, depending on earnings and contributions (or lack thereof) during the deferral period, how they compare to the person's earnings history (including the effect of child-rearing dropout years), and how that advantage compares to the post-retirement benefits that accrue after the pension has started (see next point). However, the impact can't be generalized and needs to be calculated on a case-by-case basis.
4. **Post-retirement benefits:** Individuals who continue to work and contribute after they claim CPP/QPP will earn "post-retirement benefits" in the CPP or a "retirement pension supplement" in the QPP (unless they are over age 65 and opt to suspend contributions).
5. **Survivor pension:** Survivor benefits payable to a participant's spouse are not affected by the participant's claiming age, but a survivor pension can affect the participant's retirement benefits.
6. **Other considerations:** An assessment of the tradeoffs involved in selecting a claiming age will need to take into account special circumstances, including:
   - **a.** Contributions to both the QPP and CPP;
   - **b.** Disability pension eligibility;
   - **c.** Immigration to or emigration from Canada and social security agreements with other countries; and/or
   - **d.** Credit splitting from a past marriage breakdown.

The difficulty arises when participants expect to be affected by some of the complicating factors discussed in Appendix A but delaying claiming could still be in their best interest. For example, MacDonald (2020) found that "even with personal circumstances that are conventionally understood to favour taking benefits early — such as having zero earnings after age 60 and no remaining dropout room — the advantages of delaying are still substantial on account of the large financial incentives underlying the age-adjustment factors" (p. 10).

While accurate and relevant information empowers decision-making, unreliable or incomplete information forces people to

take mental shortcuts (Simon, 1955).[22] The major issue is that the absence of accurate information not only limits decision-making capacity, but it can also encourage mental shortcuts and biased thinking whenever those complicating considerations arise. Individuals and those advising them may know that circumstances like zero earnings after age 60 and insufficient dropout room will reduce the financial advantages of delaying benefits — but without knowing exactly how those factors will affect them, it's easy to use them as an excuse to disregard the advantage of delaying. This tendency is known as "availability bias": a mental shortcut that relies on immediate examples to evaluate a complex decision (Tversky & Kahneman, 1973). As noted in the introduction and discussed further in Box G below, information gaps also have the perverse effect of leading to overconfident, poorly informed decisions.

Another significant concern is that this information gap emboldens "solutions aversion," where those in a position of influence can downplay the problem if they do not like the solution (Campbell & Kay, 2014). For instance, a person in a position of influence might oversimplify the CPP/QPP claiming calculations to avoid encouraging the retiree to draw on savings to delay CPP/QPP benefits.



[22] For further discussion, see Box G in MacDonald (2024).

Solution #3: Comprehensive online "Basic" benefits estimator hosted by CPP/QPP administrators

According to ESDC's recent report, the two most frequently asked questions to CPP administrators are the benefit amounts and advice on the right time to claim the CPP benefits (ESDC, 2019). "Given the complexity of the Canada Pension Plan Retirement Pension, clients expect the government to better support them in making informed and optimal decisions by more proactively providing sufficient information" (ibid, p. 40).

Given the size of the CPP/QPP pension system and its importance for Canada's ageing population, CPP/QPP administrators should make fundamental information available to all participants as a basic service of a pension plan administrator. At a minimum, participants should have the means to simply and easily estimate their anticipated CPP/QPP benefits and the effect of alternative claiming ages. CPP/QPP administrators should provide the means for the participant to calculate the effect of alternate dates via a publicly available online tool, reflecting their individual circumstances and all the features outlined in Box D. According to results from the 2018 Government of Canada website poll by ESDC on "Canada Pension Plan and Old Age Security Deferral Awareness," four out of five respondents said they would like an online calculator to estimate pension amounts at different ages (ESDC, 2020).

Box E: Key Features of a "Basic" Estimator

Calculations for projected CPP/QPP benefits would need to go substantially beyond reporting on the conventional basic actuarial adjustment factors and incorporate the relevant elements, including the following:

- Current values for key inputs, such as year's maximum pensionable earnings (YMPE) and realistic assumptions for the future;
- Personalized earnings and contribution history data linked directly from government records, along with recent and future earnings (i.e., in the deferral period) as estimated by the participant;
- Dropout provisions, including information on child-rearing years provided by the participant;
- Post-retirement benefits and contribution choices after age 65 for those who contemplate continuing to work (see Box F);
- Spouse's actual or expected retirement benefits and impacts on survivor benefits;
- Phase-in of CPP/QPP enhancements;
- Optional overrides to address special circumstances, such as years worked outside of Canada and social security agreements; and
- The ability to clearly see a side-by-side comparison of benefits payable at alternative claiming ages.

To achieve this, calculations must be made on a case-by-case basis, tailored to a person's actual earnings history and future expectations. Box E outlines the key features of a "Basic" online estimator.

It's important to note that while a more accurate estimate can be achieved by better reflecting the key factors of the benefit calculation, any online pension estimator will still rely on explicit assumptions about the future[23]. Managing user expectations involves effectively communicating the uncertainties tied to assumptions and results. Disclaimers included in the output should address the reasons for potential differences between estimates and actual results. Users can also be guided to explore different inputs on the online estimator to understand their impact.

As will be discussed in Box I, accessibility, trust and ease of use are keys to the success for such tools. For example, the Canadian Retirement Calculator could be transferred into the secure My Service Canada Account (MSCA), where it could load personal CPP

[23] For example, before benefits can be paid, the CPP or QPP administrator must validate and purify the data record and resolve issues arising from special circumstances. Even after benefits begin to be paid, CPP/QPP benefits may be adjusted once tax returns for the current and prior year are assessed and records are transferred from the tax department to the plan administrator.

Box F: The New Reality of Working Longer and CPP/QPP Benefit Choices

With the ongoing trend of people working past age 65, CPP/QPP participants are increasingly facing not just two choices (claim now or delay) but three:

i. Delay claiming CPP/QPP benefits, thereby potentially improving their earnings record and taking advantage of the adjustment factors.

ii. Claim CPP/QPP benefits immediately but continue to make mandatory contributions until age 65 and choose to continue contributing to the CPP while working past age 65, thereby gaining post-retirement benefits (in the CPP) or retirement pension supplements (in the QPP).

iii. Claim CPP/QPP benefits immediately, make mandatory contributions until age 65 and elect to suspend contributions after age 65.

The potential accrual of post-retirement benefits complicates that evaluation of options even further, and accurately capturing the implications of alternative "career earnings and contributions" is even more important during the age 60-70 period. For example, as demonstrated in the "Keith" example in the Retirement Hub (Service Canada, n.d.-b), switching from the first choice to the second choice at some point between ages 65 and 70 could be a good option.

Statements of Contributions automatically. This tool would help participants to start exploring different options of claiming CPP at different ages or working longer (including Post-Retirement Benefits) and other "what if" questions (see Box F).

An accessible online calculator has multiple advantages. Not only would it provide guideposts for those looking for answers, but it would also signal to those not looking for answers that perhaps they should be, which was recognized as a major issue for CPP participants (see Box G). It also improves long-term financial decision-making. Bateman et al. (2016; 2018) found that more informed individuals tend to choose annuitized lifelong income at retirement over savings, while the opposite is true for those who are overconfident in their financial abilities. Evidence from Australia further finds that computer-based retirement income projections increase engagement and motivate behaviour (Smyrnis et al., 2019). This is important because survey results have already demonstrated the lack of engagement among participants on this key decision (MacDonald, 2024).

Overall, having access to a comprehensive, accessible and user-friendly online calculator — together with communication and support — can boost a person's competencies and encourage them to invest time, seek help and take action. Without the necessary basic information, psychological biases are more likely to influence decisions. Moreover, if the alternatives are unknown or uncertain, people tend not to make any decision at all, disproportionally sticking with the status quo (Samuelson & Zeckhauser, 1988).

Box G: The Power of Computer-based Financial Calculators: Knowing is Half the Battle

Providing participants with accessible tools for understanding their options is a critical first step to better financial planning practices around CPP/QPP claiming. Getting basic information on CPP/QPP benefit claiming not only provides the information required to make informed choices, but it also signals to people that they may need more help than expected on an otherwise very complicated decision.

For example, Johnson et al. (2013) tested the ability of people to choose the most cost-effective health care policies by asking questions such as: Can they do this? Do they know how well they are doing? Can decisions be improved by addressing the psychological barriers? Do people know if they are making good decisions? "This is important because if people know that they are not doing well, they could seek assistance, potentially remedying their poor performance. If people are unaware of their inadequate performance, simply providing access to assistance will not improve their decision-making" (p. 2).

They found the decisions had substantial room for improvement. "Without any intervention, respondents perform at near chance levels and show a significant bias… Financial incentives do not improve performance, and decision-makers do not realize that they are performing badly." (p. 1).

The recent ESDC evaluation found the same issues apply to CPP participants, which similarly lead to excessive confidence and uninformed decision-making:

> The Canada Pensions Plan Retirement Pension Survey found that a majority of people surveyed applied before the age of 65 thus incurring lifelong reductions in their pension benefit. A large majority (87%) of survey respondents also reported that they fully understood the impact of their starting age on the amount of their monthly benefit. However, when taking a closer look at this issue, focus groups found that many clients simply 'don't know what they don't know.' [For example, focus group evidence indicates some clients mistakenly think the Retirement Pension should be enough to live on.]
>
> For example, they noted a lack of information about pension details, and about their personal situation, resulting in many people not applying for provisions that may increase their pension entitlement if eligible. Therefore, they possibly may not be making optimal decisions regarding when to begin their pension.
>
> Furthermore, for many clients, their main considerations for beginning their pension before age 65 include health, quality of life, uncertainty about personal life expectancy, immediate financial need, and a sense that the difference in monthly benefit was not worth waiting to apply… **Evidence indicates that very few clients actually know with any specificity what the difference in their monthly benefit is if they retire earlier than age 65.** (emphasis added; ESDC, 2019, pp. 40-41)

Research points to the value of properly framed information together with more sophisticated tools to solve these issues. **Johnson et al. (2013) found that by introducing a smart default with an online calculator, the respondents' selection of the optimal choice improved to levels on par with those of highly trained MBA students from Columbia University.** "This last result suggests, perhaps, that because calculators provide a justification for the default, they increase the transparency of their selection... It also suggests that providing just-in-time education along with calculation and choice aids produces better performance. (p. 5).

The advantages of a more accurate estimate can extend beyond deciding when to claim CPP/QPP benefits. It can help a participant understand the value of working longer (see Box F), the importance of additional retirement savings and the level of life insurance a couple may need to purchase to supplement their expected CPP/QPP survivor pension. It would also be a credible tool for the financial services industry to help clients and for workplace pension plan administrators to improve retirement financial education for their members.

Challenge #4: Even an accurate CPP/QPP benefit estimate is insufficient

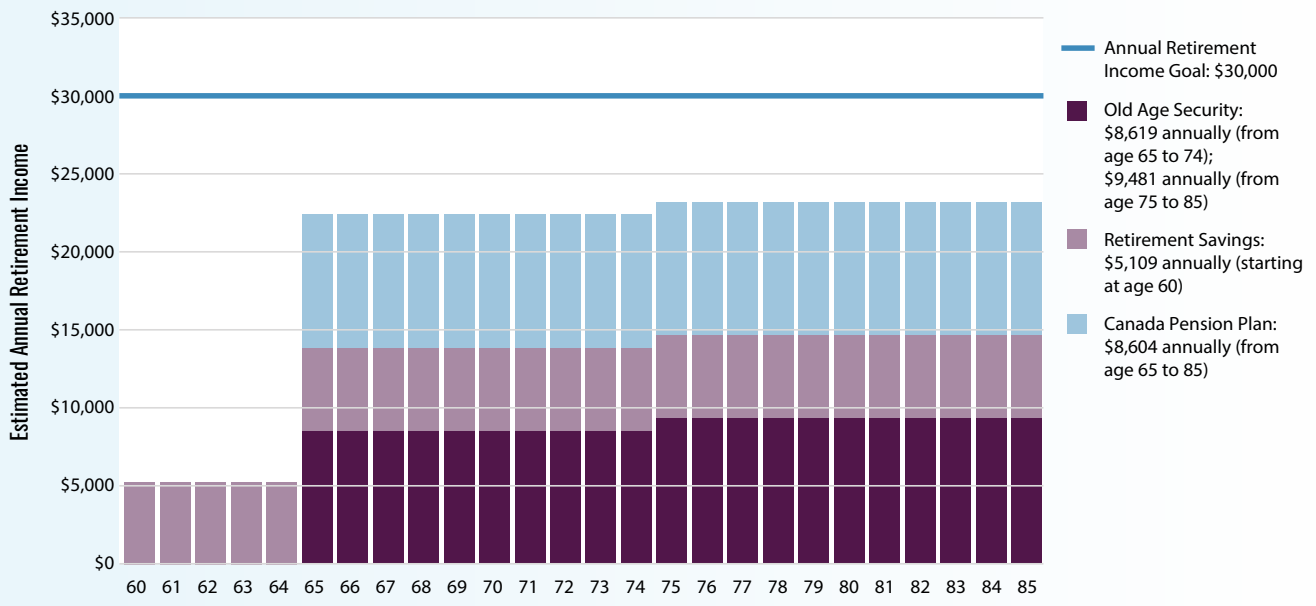
The challenges to providing online retirement financial planning calculators that are genuinely useful to informing CPP/QPP claiming decisions go beyond having more accurate CPP/QPP benefit estimates.

In Canada, for example, free online financial-projection tools are plentiful. Typically, users of these tools enter information about their financial situation and assumptions about the future, and they are provided with deterministic projections of net worth and gross income. The tools are intended to be useful for answering questions like, "Am I saving enough for retirement?" or "Where will my income come from after I retire?" A sample of the results from the Service Canada projection tool (Canadian Retirement Income Calculator) appears in Figure 2 below.

Retirement calculators like this one are relatively easy to create and use. The graphs and other results they provide are easy to interpret. However, these calculators have limited use when evaluating the tradeoffs involved in CPP/QPP claiming. How they are designed and presented subtly nudges participants toward early claiming in several ways.

1. These deterministic projections treat retirement savings and lifelong pension income identically when, in reality, they have fundamentally different risk profiles (see paper Step #1, MacDonald et al. [2024a], for a full discussion on this topic). This problem is best understood in the context of the NIA visualization of the Canadian Retirement Income Framework (Figure 3). This visualization makes a clear distinction between the foundation layers (OAS/GIS, CPP/QPP, workplace pensions and annuities), which provide guaranteed lifelong monthly income to meet routine expenses, and the spending buckets (such as RRSPs), which provide flexible, liquid funds to meet non-routine expenses. In contrast, the output of a deterministic calculator makes a "projected" stream of withdrawals from an RRIF look just as safe as a guaranteed indexed pension like CPP/QPP.

Figure 2: Sample Output from Canadian Retirement Income Calculator

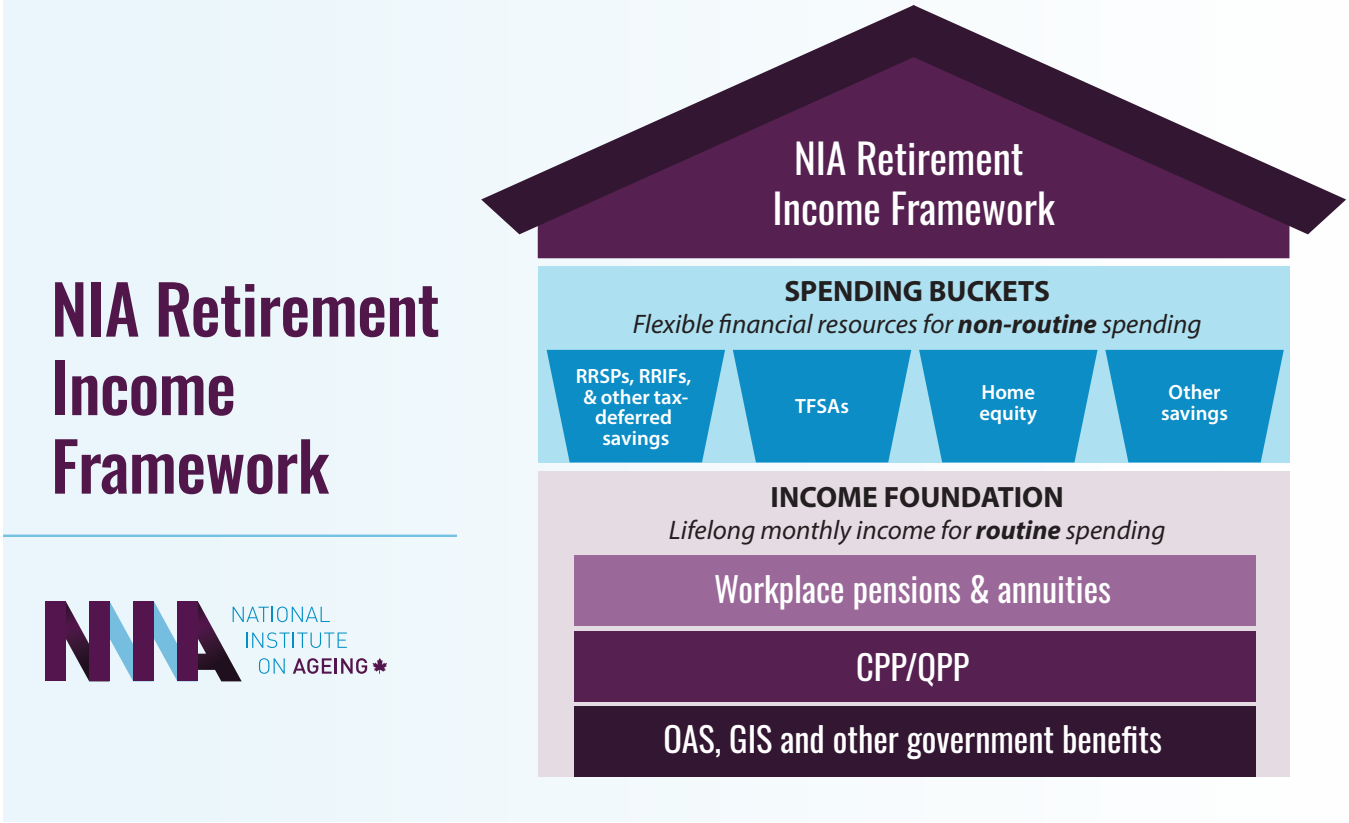


2 In addition to projections of annual retirement income like the one in Figure 2, online calculators often provide a projection of the RRSP account balance and other similar funds, excluding the current monetary value associated with future pension income. If a retiree defers CPP/QPP by drawing on their RRSP savings to fill the income gap during the deferral period, this shifts wealth from the spending buckets to the foundation layers in Figure 3. However, by not capturing the increase in the projected lifetime value of CPP/QPP benefits, these online calculators make it seem like the retiree is simply drawing down their wealth in the short term with no clear benefit.

3 The range of ages included in graphs and other tool outputs is usually too short. This time horizon is often described as "life expectancy" rather than "maximum plausible lifetime," suggesting that it's okay to overlook the risk of outliving one's savings (see papers Steps #2 and #3 in this series for a review of the dangers of centring retirement financial planning on life expectancy statistics [MacDonald et al., 2024b; MacDonald & Chandler, 2024]).

4 In addition to the elements that nudge the focus away from the long-term implications of shifting money between the income foundation and the spending buckets, the default inputs (life expectancy, rates of return and a CPP/QPP claiming age of 60 or 65) can compound the problem by anchoring users to these assumptions.

Figure 3: NIA's Redefined Visual of the Canadian Retirement Income System



Source: Figure 1 (MacDonald et al., 2024a).

Another major weakness of free online financial projection tools is that they present gross benefits (before taxes and government transfers). The Canadian retirement income system incorporates inflows and outflows from multiple tax and social benefits programs, and a change in one income flow can trigger repercussions in others. For instance, deferring CPP/QPP benefits reduces income in the short term and increases it in the long term. However, since CPP/QPP benefits are included in net income for tax purposes, the claiming age can affect taxes and eligibility for income-tested government benefits such as OAS and GIS.

Participants are less interested in the gross CPP/QPP benefits than they are in what it means for them at the end of the day to finance their living standards: how much CPP/QPP benefits they will have to spend after filtering through Canada's complex tax and social benefit system. The outcome depends on personal circumstances. To understand these implications, participants need to see the effects of the claiming age on the income they will have to spend net of taxes and social transfers ("spendable income"). Appendix A explores the taxes and income-tested benefits that affect these aspects of the claiming decision.

For example, an increase in CPP/QPP benefits for a low-income individual is offset by the income-tested clawbacks in the GIS benefit calculation. As a result, claiming early can increase GIS benefits substantially. While there might still be an advantage to deferring CPP/QPP a few years past age 60 (if the individual can afford to do so), the advantage will be

smaller, and it will take more years to pay off. As another example, an individual who is still working and earning a high income will see a significant portion of CPP/QPP benefits lost to income taxes and will find deferring CPP/QPP until after retirement to be even more attractive once the decision is presented in terms of spendable income.

When it comes to supporting participants to make more informed retirement financial decisions, there is a tension between supplying information versus providing financial advice, which raises many questions. What is the role of governments in helping ordinary citizens understand their retirement financial future? Where is the boundary between the responsibility of a plan administrator to inform, educate and raise awareness, and the responsibility of an individual to seek out the expert advice they need? What is the role of financial institutions and professional advisors? Which aspects of claiming decisions can be supported through online tools and resources, and which should only be attempted through individualized financial planning and advice?

One major issue in sorting out how to inform participants of the impact of CPP/QPP claiming on their lifetime "spendable income" is the diversity of their financial circumstances. Currently, Service Canada and Retraite Québec attempt to serve all participants through projections of CPP/QPP benefits that:

1. Lack key ingredients in their estimation (Box D and Box E);
2. Ignore crucial components of the Canadian tax and transfer system that will have significant impacts on the value of those benefits for many participants (Appendix A); and
3. Cannot capture the potential range of consequences of risky investments, because of the projections' deterministic approach.

When analyzing the impact of public policy on older adults, there is a natural divide between affluent and non-affluent retirees. In the financial service industry, there is a corresponding divide based on a retiree's personal savings (that is, the size of the portfolio of investable funds). This paper proposes two distinct and complementary solutions that disentangle the needs of these two categories of participants:

- **A "Beyond the Basics" projection tool provided by government; and**
- **Industry-sponsored retirement financial planning tools and advice.**

Solution #4a: "Beyond the Basics" Government-Sponsored Projection Tool

We propose that a government-sponsored projection tool be designed primarily for participants who will rely on their income foundation (CPP/QPP, OAS, GIS and possibly workplace pensions) to provide their spendable income.

In addition to providing basic information about CPP/QPP benefits and options, as discussed in Solution #3, the government administrators of CPP/QPP are in the best position to calculate the spendable income ordinary citizens can expect to receive from the public elements of Canada's retirement income system. This approach supports the needs of underserved, vulnerable participants, as discussed below. And by explicitly excluding the projection of taxable income from the drawdown of investments, it avoids

the need for sophisticated modelling — the most serious flaw in deterministic projections — while preserving the appeal of simple yet effective visualizations of future spendable income and enabling a user-friendly tool.

Box H presents the key qualities of a "Beyond the Basics" CPP/QPP/OAS/GIS benefit-projection tool that Service Canada and Retraite Québec (or another government agency) could provide. A retirement calculator incorporating government benefits and the tax-and-transfer system environment in which they operate will generate meaningful answers to retirement transition questions, including when to claim CPP/QPP benefits *and* OAS.

Box H: Key Features of a "Beyond the Basics" Projection

In addition to the key features outlined in Box E, calculations for projected spendable CPP/QPP benefits should incorporate the following elements:

- Ability for the user to input other income flows at a household level (sources, amounts, etc.)
- Integration of the taxes, tax credits and transfers administered by the CRA (e.g., OAS and GIS, GST credits and the clawback of these benefits based on household net income) and key provincially administered supplements to GIS (e.g., Ontario GAINS, Alberta seniors' benefit).
- Year-by-year estimate of household spendable income by source and the change in household spendable income attributable to alternative claiming ages for CPP/QPP and OAS. Ideally, the projection period would highlight a reasonable range (such as the 25th to 75th percentile) for the user's personalized life expectancy. The projection period should extend to age 110, to visually balance the consequences of living longer than expected with the (equally unlikely) consequences of dying prematurely.
- Only the income foundation (CPP, OAS, GIS and any pensions or annuities the individual chooses) should be included in the projection, as this is the most important consideration for non-affluent retirees. Attempting to include a net worth projection and its decumulation largely invalidates a deterministic projection when intended for CPP/QPP claiming decisions.[24]

Information from an online tool like the one described in Box H would generally be sufficient to support claiming decisions for households relying primarily on government benefits. Beyond fulfilling its role as administrator, this tool supports the government's public responsibility to protect financially vulnerable older adults:

1. **Less need for complex financial planning:** Less affluent participants do not have large investment funds or other complexities of personal finance requiring the services

[24] See Box C in paper Step #1, MacDonald et al. (2024a), for a discussion on why portraying the savings drawdown behaviour for a population cannot be done in a single deterministic projection.

of an accountant, estate planner or investment broker. Half of 55- to 64-year-olds approach retirement with less than $10,000 in tax-deferred retirement savings, and only 16% have savings of $200,000 or more (Healthcare of Ontario Pension Plan, 2023). While they may have enough savings to consider delaying CPP/QPP benefits if it proves financially advantageous in their particular circumstances, they do not have enough money in their RRSP or other tax-deferred savings to dramatically alter their income tax situation. Because they are less dependent on private savings and more protected by the Canadian retirement income system, they are less affected by future financial risks, such as variability of investment returns[25], where personal financial planning helps provide guidance.

2 **Greater need to understand the implications of GIS clawbacks:** While low-income older adults have less need for complex financial forecasting, they are much more impacted by the GIS and other income-tested benefits (see Appendix A). As a result, a "Beyond the Basics" tool that calculates spendable income is arguably even more relevant for them. Most low-income Canadians will need to claim benefits as soon as they retire, and helping them understand the financial penalties in the GIS program of having additional taxable income (like that from CPP/QPP pensions) is critical to maximizing their financial well-being.

3 **Supporting more financially vulnerable populations:** As explained in the introduction of this paper series, MacDonald (2024), policymakers need to be mindful of serving less affluent older adults with regard to retirement financial planning. First, access is an issue for less affluent retirees who want unbiased personal financial planning services (Iannicola & Parker, 2010). Second, the potential consequences of poor financial decisions can be much more severe for this group, because a reduction in spendable income for less affluent retirees not only means a reduction in living standards, but it can also leave them unable to pay for basic needs. Last, financially disadvantaged individuals are more influenced by the financial advice they get and how it is framed (Brown et al., 2016; Franklin et al., 2019; Perez-Arce et al., 2023), making them even more susceptible to this gap in "basic" CPP/QPP information and a public priority in terms of financial decision-making support. In ESDC's 2018 online survey on "Canada Pension Plan and Old Age Security Deferral Awareness," two-thirds of respondents did not correctly understand CPP deferral, and this lack of informed awareness was even more significant for those with less income (ESDC, 2020).

This "Beyond the Basics" projection tool will also serve CPP/QPP participants who are not financially vulnerable but do not have the kinds of spending buckets that usually require the services of investment advisors and estate planners. One example is participants with significant wealth in the form of home equity or TFSA savings to provide for inheritances or unpredictable one-time expenses, but who do not rely on the drawdown of tax-deferred or taxable investments for routine spending. Another example is members of workplace pension plans who will not rely on savings to finance their retirement other than as a possible bridge to delay CPP/QPP and OAS benefits.

[25] MacDonald & Osberg (2014) found the combination of CPP/QPP, the income-tested GIS and the progressive income-tax system substantially shield Canada's older population from financial market volatility.

So far, this paper has discussed the features of a tool that allows Canadians to accurately forecast their CPP/QPP pension and how it will affect their living standards. The success of such a tool will, however, depend on how the intended users are encouraged to engage with it and how it is incorporated into their financial planning. Box I reviews these considerations. The government is ideally positioned in many of these respects: credible, unbiased, and universal access.

Box I: The Other Half of the Battle: Using Computer-based Financial Calculators

Janice Holman, CFA, CFP, personal correspondence, August 16, 2024

Based on my 25+ years of experience working with Canadians on capital accumulation plans (CAPs), as well as the work over the past decade to build an ideal financial planning tool for plan members that incorporates many of the items included in this paper, there is one important finding: just because you build it, it doesn't mean "they" will come. Even the best tools will be ineffective if they are not incorporated into everyday life events.

There is a significant range of usage of retirement calculators. For example, in 2023, a review of retirement calculator usage at three of Canada's largest CAP recordkeepers showed a significant range — from 14% of members on the low end to 55% on the high end. Factors affecting these statistics include the following:

- **Incorporation of the retirement calculator into other key events** — such as enrolling in a plan or conducting a nudged annual review — dramatically increases usage.
- **Proactive nudges encourage users to use the tool** — for example, highlighting a key personal fact, such as, "You have not yet set a retirement goal; find out if you are on track" or "You haven't logged on in over a year; see how your retirement has changed."
- **Automated inputs** help users understand that many of the complex calculations and assumptions that need to be performed are done within the tool, and the experience will be easy, accessible and accurate.
- **Easily digestible information**, through graphs or illustrations, significantly increases the likelihood of usage.
- **A reliable and trustworthy source (see below)** — including who the tool is provided by, and the user's understanding of how the information will be used and possibly shared — increases adoption.
- **Positive encouragement to use the tool has an impact**, such as highlighting what it will help them with personally, the value it will provide and its ease of use.
- **Tools need to be comprehensive**, since those that provide very siloed information (or only advise on a very narrow focus) tend to have less value to members, as results are not

put in context or do not incorporate other significant pieces of information affecting the user's decision-making.

- **Energy and resources must be put into promotion**, as awareness is key for any tool to gain users. Continued encouragement for tool usage must highlight the tool's value to the user.
- **Accessibility is a key to healthy adoption**. Any tool must be easily usable on a portable device or through an app. The use of desktop tools continues to fall, and information on the go through handheld devices is replacing it.

Finally, I can't stress enough how much trust is a major factor in the use of financial calculators and the adoption of the results they provide. In a survey Eckler Ltd. conducted in 2019, 90% of Canadians said the most important attribute of financial education is that it is "unbiased" (Eckler Ltd., 2019).

Solution #4b: Better retirement income planning tools for participants with savings

Retirees who rely heavily on financial investments in retirement will need professional support from the financial services industry. These professionals will need to interpret the information provided by the government. With better data supplied by the government estimator, industry experts can undertake more accurate individualized analyses, and give better advice on investment and tax strategies.

In the case of households with significant wealth seeking a "comfortable retirement" with monthly spending well above what can be achieved through government benefits and workplace pensions, only the basic information on CPP/QPP and OAS entitlements will be needed as a starting point for analysis. Choices concerning claiming age and other sources of retirement income should be made in the context of a thorough analysis of investment risk/return tradeoffs and competing financial objectives. Marginal effective tax rates — including the social benefit recovery tax or "OAS clawback" — will be a significant factor in this analysis. Financial planners and others who advise on these matters will make recommendations concerning claiming age in the context of an overall financial plan.

To improve on the status quo, Canada's largest pension-industry advocacy organization, the Association of Canadian Pension Management (ACPM), proposed a list of key features of computer-based retirement income modelling tools (Box J) to recommend regulatory guidance for CAP members. Fundamentally, the ACPM recommendations relating to CAP participants also represent a complete and sound foundation for the kind of support wealthier Canadians need when making choices around the CPP/QPP claiming age[26].

[26] ACPM also emphasized the need for Canadians to have access to unbiased financial advice: "People who work with advisors tend to manage their wealth more effectively than those who do not. Canadians need access to qualified, objective advice with transparent fee disclosure. ACPM recommends that all jurisdictions in Canada implement legislation that defines regulated areas of practice and titles for professionals working in retirement and financial planning; not unlike legislation that exists for legal, accounting and other professionals. Transparency on compensation should also exist." (ACPM, 2022, p. 35).

Box J: Industry Recommends Post-Retirement Financial Planning Modelling Tools

From a report by the Association of Canadian Pension Management: *Decumulation 2.0: Converting retirement savings to lifetime income — A prescription to help Canadians navigate their retirement income needs.*

Post-retirement computer-based financial planning modelling helps CAP (Capital Accumulation Plans) members and retirees assess how long each savings account may last and the likelihood that basic income needs will be satisfied for the remainder of the member's life.

While the retirement industry provides modelling tools that provide good decision support for CAP members during the enrolment and accumulation phase, there is a growing need for the development of robust modelling tools to support and guide decision-making for CAP members who are exiting their CAP (or starting retirement income from within their plan) and throughout the retirement income phase. Many attributes of the best modelling tools for decumulation modelling include the following:

1. User friendly, with clear, meaningful and customizable output;
2. Allow for differing assumptions about the economic environment — assumptions for capital market expectations (including potential market shocks), inflation and interest rates that are (a) robust and continually revisited; and (b) employed in a stochastic framework to enable a distribution of outcomes[27];
3. Investment returns that are on a net of fee basis and spending needs that are expressed in "real" or inflation-adjusted dollars, which would have a significant impact on the modelled results and the guidance provided;
4. Have the ability to model spendable income rather than gross income, thereby accounting for federal and provincial income tax, government-provided income-tested benefits and other age-specific provisions such as income splitting and minimum and maximum withdrawals for various forms of savings;
5. Include appropriate initial personal financial conditions, including financial assets (RRSP, TFSAs, non-registered savings), housing equity, and outstanding debts (mortgages, car loans, and/or consumer debt);
6. Have the ability to adjust annual retirement lifestyle costs and/or annual cash needs that

[27] J. Holman cautioned that plan members' expectations of future results can significantly differ from most professionals' expectations. For example, the longstanding Benefits Canada CAP Member Survey historically finds that members expect to earn 15% to 17% on their investments annually, far above long-term expected returns (Paterson, 2019). Holman suggested it would be better for returns and economic factors to be calculated based on knowing an investment portfolio's allocations and using professionally provided future estimates. She suggested giving different scenarios (optimistic, pessimistic, etc.), where the tool, and not the user, determines the different economic inputs (inflation, rates of return). For example, a newly released pension calculator by the Public Service Pension Plan provides up to five scenarios of pension-claiming timing, allowing the user to choose the assumption about future salary growth based on preset options. It also provides a cumulative lifetime pension based on gender and average life expectancy (Public Service Pension Plan, n.d.). (J. Holman, personal correspondence, August 16, 2024)

may vary for different phases of retirement, including late-life and end-of-life transactions (such as late life health care and tax consequences for estates);

7 Provide flexibility to model retirement income needs and drawdown scenarios for a "household" rather than an individual-member basis;

8 Provide guidance on developing a longevity assumption for the retiree (and any spouse), taking into account current health status, marital status, family longevity and income, and the ability to perform scenario analysis on outcomes under different longevity assumptions;

9 Include government income-estimating tools or the ability to modify CPP/QPP entitlements for a member and their spouse based on actual benefits earned as well as impacts on annual incomes for different start dates;

10 Provide flexibility to model adjusted retirement income needs and drawdown strategies following the death of a spouse;

11 Have the ability to capture certain "retirement spending shocks" for sensitivity of the retirement income plan;

12 Have the capacity to identify and test alternative drawdown strategies, and compare how the consequences from one strategy compare to those for another strategy; and

13 Address individual differences in terms of goals, which includes not just risk tolerances, but also personal discount rates, need for predictability versus ability to make income adjustments over time, attitudes regarding estates and legacies, etc.

ACPM Recommendation: Regulatory guidance regarding CAP decumulation should direct CAP sponsors and providers to make modelling tools covering points 1 through 12 above available to their members (included in the plan expenses paid by plan members), with point 13 being of additional benefit. (ACPM, 2022, p. 20)

Some of the key advantages of CPP/QPP pensions are their protection against longevity, inflation and investment risk (see Step #2, MacDonald, et al. [2024b]). However, demonstrating these protective features to the general public has proven to be difficult. Academic research often reports on risk using a spectrum of graphics and technical summary statistics, while mainstream advice may not deal with risk other than "best/worst case" scenarios (a practice that can severely exaggerate or undermine risk implications). For those in a position to provide personalized financial planning, helping clients understand, appreciate and manage financial risk is a strategic opportunity to add value.

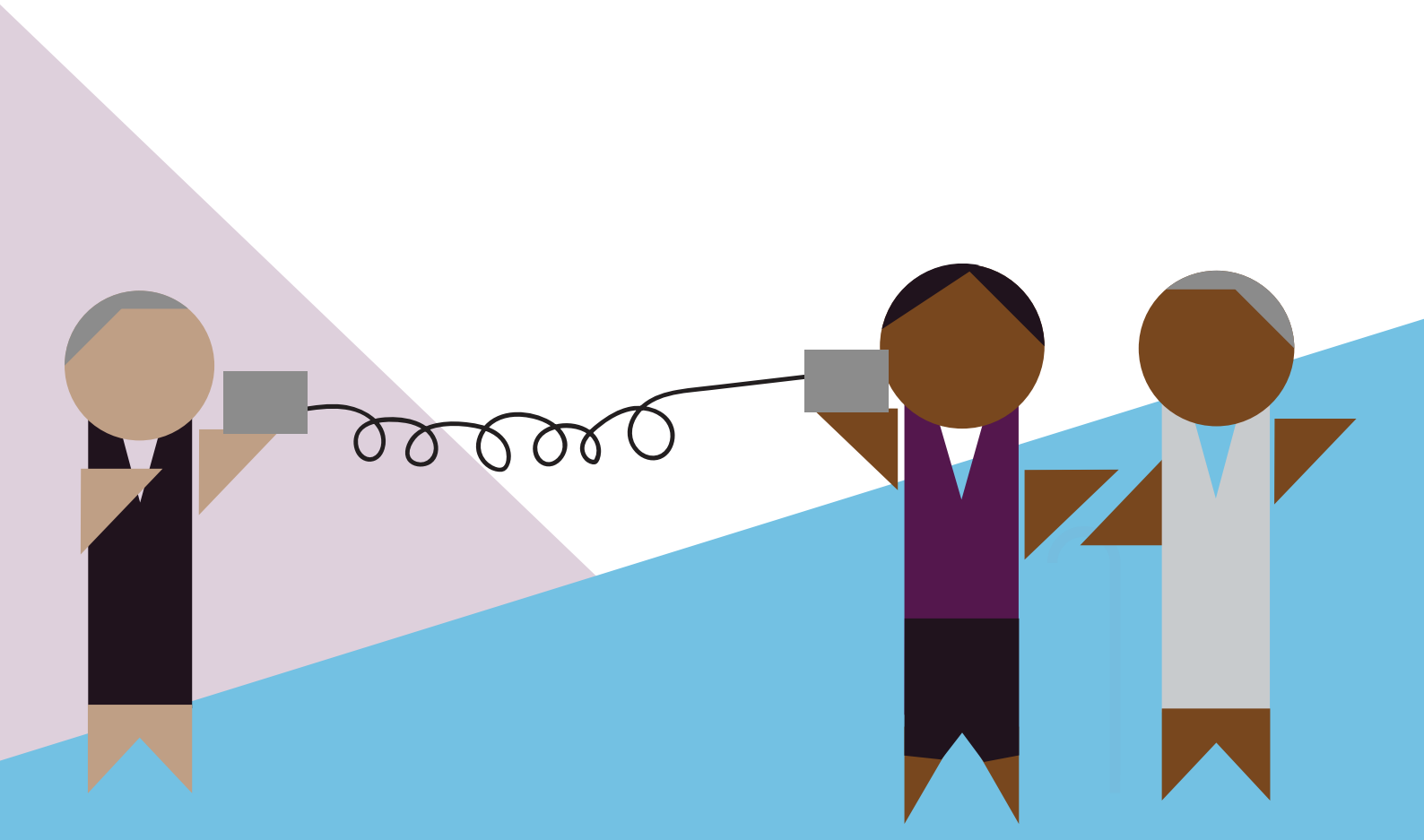
For example, Canadians with significant tax-deferred retirement savings face substantial uncertainty on their future "marginal effective tax rates": the combined effects of income taxes, GIS and OAS clawbacks, and other income-tested government benefits (Chandler, 2022). Advice on the optimal strategy for drawing down savings during retirement must incorporate a wide spectrum of potential investment return outcomes and the associated range of marginal effective

tax rates. Simply using middle-of-the-road assumptions about investment returns can fail to anticipate both the high rates of taxation that will arise if returns are favourable and the high rates of recovery of income-tested benefits if investment returns are unfavourable (MacDonald & Osberg, 2014). This same challenge affects the CPP/QPP claiming decision. It is difficult to confidently predict what marginal effective tax rate will apply to CPP/QPP payments in the distant future when taxable income is highly dependent on returns on risky investments.

Conclusion

This paper reviews the issues and gaps in current CPP/QPP communications that can contribute to poorly informed decisions to claim early. Drawing on research and evidence, we propose ways that Service Canada and Retraite Québec can improve their practices by enhancing their current communications and developing more sophisticated online tools to provide CPP/QPP participants with the right information, in the right way, at the right time.

Industry stakeholders can support these efforts by adopting the insights and suggestions provided throughout this paper. They also have a role to play in helping those who depend on them engage with these better tools when (and if) they become available.



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Appendix A: The CPP/QPP Delayed Benefit Calculation: More than Age Adjustments

Deferring a CPP/QPP pension involves forgoing an immediate pension in exchange for a larger pension later. For those with sufficient savings, this represents a transfer from the spending buckets to the income foundation of their retirement income framework. For others, it involves working longer or sacrificing short-term consumption or debt repayment.

But before these personal aspects of the claiming decision can be evaluated, CPP/QPP participants need a clear idea of how much larger their delayed pension will be relative to the more immediate pension they are giving up. While the age-adjustment factor is the most consequential variable, it is far from the only one. Other complicating factors can increase or decrease the incentive to delay. We divide them into two broad categories:

1. CPP/QPP rules that affect the amount of the pension; and
2. taxes and social program rules that affect the amount of income available for the retiree to spend.

This appendix details some of these complicating factors. However, this is not a complete explanation of current CPP/QPP, tax and social program eligibility rules. Its purpose is to highlight some variables that can impact the evaluation of alternative claiming ages, to emphasize the complexity of the calculations. It demonstrates why plan participants and others who are in a position to influence claiming decisions but who are not specialists in CPP/QPP rules should not be responsible for calculating the effect of a claiming-age decision on monthly income[28].

The Complicated CPP/QPP Pension Calculation

Components of CPP and QPP Pensions

A participant's retirement pension consists of four parts:

1. The base CPP/QPP benefits for the contributory period that began in 1966 or the participant's 18th birthday — 25% of their Average Monthly Pensionable Earnings (AMPE);
2. Enhanced benefits associated with the increase from 25% to 33.33% for the contributory period that began in 2019 — 8.33% of their First Additional Monthly Pensionable Earnings (FAMPE);
3. Enhanced benefits associated with the contributions in excess of each Year's Maximum Pensionable Earnings (YMPE) up to the Year's Additional Maximum Pensionable Earnings for the contributory

[28] Additional information on the relevant workings of CPP/QPP is included in "Appendix B: When (Potentially) Not to Delay CPP/QPP" in the introduction paper in this series — MacDonald (2024). Authoritative sources include, (i) The Canada Pension Plan (chapter C-8 of the Revised Statutes of Canada); (ii) An Act respecting the Quebec Pension Plan (chapter R-9 of the Consolidated Statues of Quebec), (iii) Government of Canada website (Service Canada, 2024a) and (iv) the Quebec website (Retraite Québec, n.d.-b). Details and additional analysis of the combined effect of taxes and income-tested social support programs can be found in Petit & Tedds (2020) for British Columbia, the Disposable Income Simulator (SRD) and related documentation (Chaire de recherche sur les enjeux économiques intergénérationnels, 2022) for Quebec, and Chandler (2022) for Ontario, Alberta and British Columbia.

period that began in 2024 — 33.33% of their Second Additional Monthly Pensionable Earnings (SAMPE); and

4. Post-retirement benefits (PRBs) attributable to contributions that were made after the date the participant claimed their retirement benefits.

The age-adjustment factors are applied after the four parts of the pension have been calculated:

- If CPP benefits start before age 65, payments decrease by 0.6% per month (or 7.2% per year), up to a maximum reduction of 36% at age 60.
- If CPP benefits start after age 65, payments increase by 0.7% per month (or 8.4% per year), up to a maximum increase of 42% at age 70. There is no further advantage to starting benefits after the maximum age.

The same applies to the QPP, except that (1) the QPP early-adjustment factor is between 0.5% and 0.6% per month (depending on the ratio of the participant's AMPE to the maximum); (2) the retirement can be postponed up to two additional years, to a maximum increase of 58.8% at age 72; and (3) the age adjustments do not apply to PRBs.

Dropout Provisions

AMPE, FAMPE and SAMPE are calculated by averaging the adjusted pensionable earnings over the respective contributory period. For the AMPE (only), some years are dropped out. "Dropout" refers to the general provision that allows an individual to exclude the lowest 17% of their lifetime earnings from the CPP benefit calculation (or 15% for the QPP). At age 65, for example, a participant has a contribution period of 47 years (from age 18 to 65) with at least eight years (CPP) and seven years (QPP) of low earnings that can be excluded. The benefit is, therefore, based on the best 39 years of earnings for CPP and 40 years for the QPP. There are additional dropout provisions for child-rearing and periods of receiving a CPP/QPP disability pension. Dropout provisions are not combined with years of low contributory earnings after age 65 to reduce AMPE.

Post-Retirement Benefits

If individuals continue to work and contribute to CPP/QPP after their retirement pension has started, they (and their employer) will be required to continue contributing, and they will earn additional increases (PRBs) based on those contributions. Once they are 65, they can opt out of contributions and PRBs (one calendar year at a time).

PRBs in the CPP are 1/40 of the pension determined using the participant's contributory earnings (before deduction of the $3,500 YBE) and the age adjustment factors. PRBs are called "retirement pension supplements" in the QPP and are 1/50 of the pension determined using the earnings on which the participant made contributions (after deduction of the $3,500 YBE) and, as noted above, without any age adjustment.

Administration of Pensions for Interprovincial Migrants

For dual contributors (individuals who have contributed to both CPP and QPP), the program administrator for their province of residence at retirement will determine the total pension from both plans. The CPP and QPP reconcile payments for their portions of benefits seamlessly for the participant.

CPP/QPP Rules Impacting the Claiming-Age Decision

Complicating Factor #1: Differences in Indexing for New Pensions and Pensions in Pay

The annual indexing of a pension after it has been claimed ("pensions in pay") is linked to the increase in the annual average Consumer Price Index (CPI) (measured from November to October of the prior year compared to November to October of the second-prior year). In contrast, new pension benefits are determined using the YMPE, which is adjusted to the average industrial wage growth, and depends on a person's pensionable earnings history. (Specifically, the YMPE for each year is adjusted in January for the increase in average wages, measured from July to June of the prior year compared to July to June of the second-prior year. When the retirement pension is calculated, all past earnings of a contributor are revalued to a present-dollar value by comparing the average of the YMPEs in the year of retirement and the previous four years to the YMPE in the year when the pension starts.)

Since indexing of pensions and participants' earnings records is applied by calendar year, there is a bump in the real value (after inflation) of new pensions at the beginning of each year. MacDonald (2020) found that the incentives to delay CPP have historically been greater than the public-facing description based on age adjustment factors alone: between 2012 and 2019, for example, the actual adjustment for a 10-year delay was 183%, which generated a 137% real (after inflation) increase in monthly benefits (rather than 121.9% as shown in Table 1).

Although the difference between wage growth and inflation is usually positive and increases the incentive to delay, this is not always the case. For further discussion of a decrease in real CPP pensions, see Vettese (2022).

Almost all of the underlying data in this calculation is known well before the official announcement of the new year's YMPE and the pension increase rate. This means the benefit of claiming CPP/QPP in January rather than December can be anticipated in time to consider it when early claiming decisions are made. See Yee (2023) for an explanation of a methodology that can be used to estimate next year's YMPE.

While short-term bumps in real pensions from one calendar year to the next are reasonably predictable, forecasting the extra value of deferring over longer periods (such as from age 60 to 70) requires an assumption based on a longer-term view. See OCA (2022) for its development of an assumption about future increases.

Complicating Factor #2: Additional Years with No Contributory Earnings Can Drag Down AMPE

The contributory period usually begins at age 18 and ends when the CPP pension starts. Deferring CPP claiming extends a participant's contributory period. If they already have multiple years with no earnings (for example, because they were living and working outside Canada), they won't be able to drop out the additional years, and their AMPE will go down (or will not go up as much due to increases in the five-year average YMPE). This can dampen the value of the age adjustments.

As already noted, participants who are age 65 or older and cease employment can delay taking CPP to age 70 and QPP to age 72

without impacting their base benefits — that is, the pension calculated after age 65 can't be lower than when calculated at age 65. On the other hand, lower earning years (including non-contributory years) between age 60 and 65 can reduce the AMPE in the first part of the CPP/QPP retirement pension if the retiree has insufficient dropout room.

Evaluation of claiming choices must be based on the aggregation of separate calculations for the four parts of the retirement pension. Dropout considerations only apply to the base benefits (under the 25% formula). Additional years with contributory earnings always improve FAMPE and SAMPE (at least during the 40-year phase-in period). Therefore, the different parts can move in different directions.

Complicating Factor #3: Additional Years with Contributory Earnings Do Not Necessarily Improve AMPE

If the participant has already worked and made maximum contributions for most of their contributory period, more years of contributions before claiming their retirement pension will not increase the AMPE. However, the adjustment factors will still apply. MacDonald (2020) examined this scenario and still found the delay attractive.

Post-retirement contributions will give rise to PRBs for contributors who claim their pension while still employed. This reduces (but does not eliminate) the increase in pension due to the age-adjustment factors.

Complicating Factor #4: Participants Can Change Their Minds

Participants can cancel their decision to claim CPP up to 12 months after starting the benefit. Participants over age 65 can claim CPP/QPP benefits retroactively (up to 11 months plus the month they apply). In some instances, this has the effect of moving benefits from one tax year to another, potentially saving taxes and avoiding clawback of OAS, GIS or other income-tested benefits (discussed below). It also enables participants uncertain of their current year's earnings to wait and see without losing the opportunity to claim early.

Complicating Factor #5: Survivor Benefits

Survivor benefits payable to a participant's spouse are not affected by the participant's claiming age. If a participant dies and has not yet taken their CPP/QPP benefits, then the survivor benefit is calculated based on the participant's AMPE, FAMPE and SAMPE at that time, with no actuarial age adjustments.

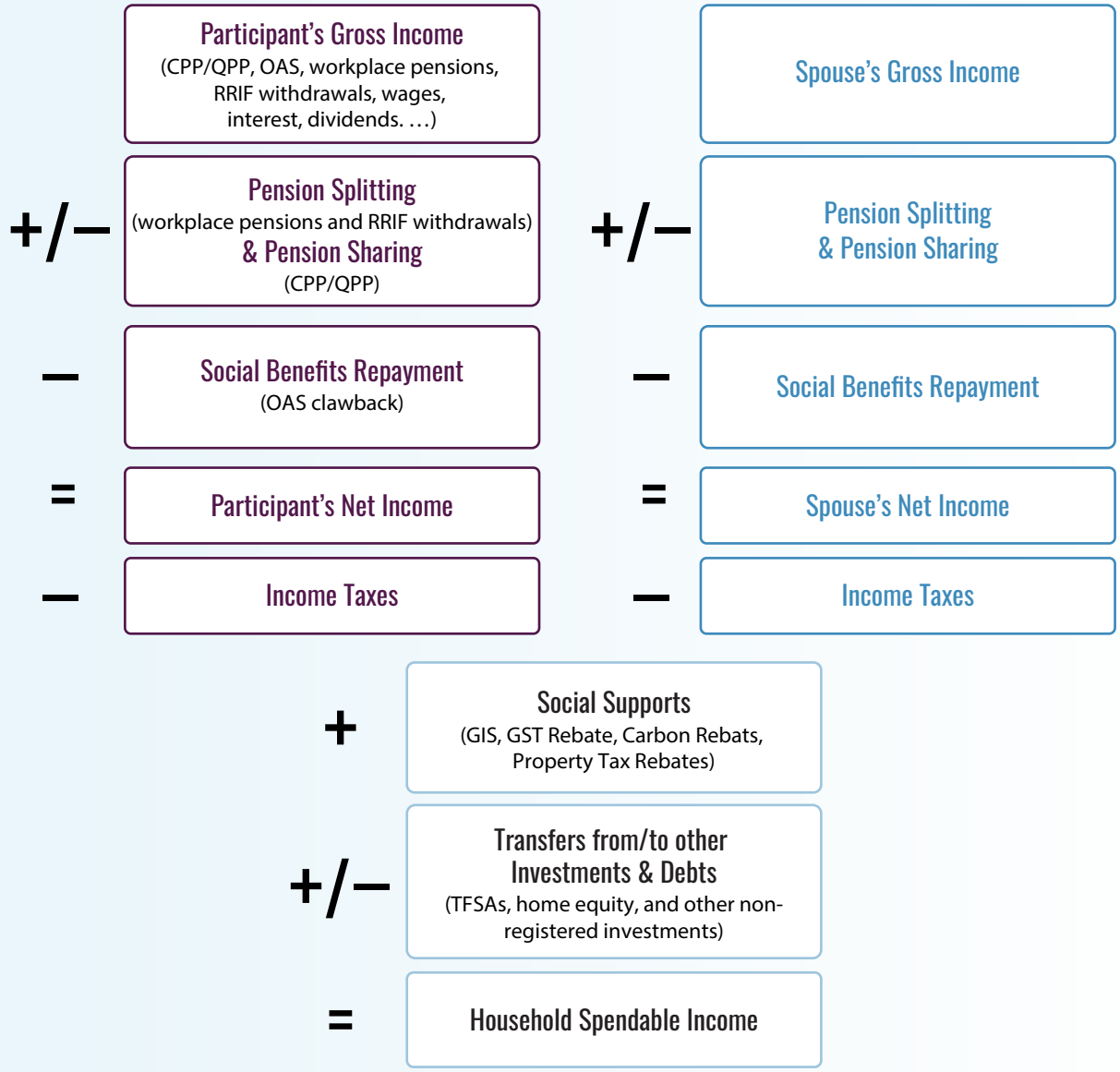
Receiving a survivor pension can, however, affect the participant's retirement benefits. The effect is particularly significant if the participant is under age 65 and receiving a survivor's pension. As a rule, it would be unwise to claim CPP/QPP before age 65 while receiving a survivor's pension.

A participant's retirement pension can also be affected after age 65 if they claimed their retirement pension earlier than age 65 and are affected by the upper limit on combined survivor and retirement pensions (Runchey, 2023). This effect marginally reduces the value of deferring.

Tax and Social Benefit Rules Impacting Spendable Income

To properly evaluate the claiming decision, one must understand how different sources of income and income-related government taxes and programs affect a household's spendable income, now and in the future. Figure 1A below illustrates this.

Figure 1A: From Gross Income to Spendable Income



Note: GIS = Guaranteed Income Supplement; OAS = Old Age Secturity; RRIF = Registered Retirement Income Fund; GST = Goods & Services Tax; TFSA = Tax-Free Savings Account.

The impact of taxes and government social benefits on household spendable income can be critical when evaluating the CPP/QPP claiming-age decision. The combined effect of all impacts is called the "marginal effective tax rate" (or METR). This section reviews some circumstances in which METR can impact the decision to delay a CPP/QPP pension.

Implications of Marginal Effective Tax Rate for Evaluation of Claiming-Age Decision

In general terms, the METR can have a positive, negative or neutral impact on the claiming-age decision:

- **Neutral:** In some circumstances,

alternative claiming ages can be evaluated based on the monthly pension payable under CPP/QPP rules, with no regard to the taxes that will be paid on the monthly pension or the effect of the pension on income-tested government benefits. For example, participants who wish to maintain the same lifestyle regardless of the claiming-age decision can finance lifestyle costs during the months before claiming through withdrawals from an RRSP. In that case, taxable income (and therefore spendable income) is the same (see MacDonald et al. [2020] for such an analysis).

- **Negative:** If the METR that will apply to a delayed pension is higher than the METR that will apply to near-term pension payments, this detracts from the incentive to defer CPP/QPP.
- **Positive:** Conversely, if the METR will be lower in the long term (for example, for someone who is still working), then the incentive to defer is even greater.

This section discusses some circumstances that fall in the negative and positive scenarios.

Complicating Factor #6: Guaranteed Income Supplement and Other Low-Income Supports

The introduction to this series (MacDonald, 2024) included *Appendix B: When (Potentially) Not to Delay CPP/QPP*, which reviewed the financial disincentives for low-income older Canadians to delay claiming CPP/QPP benefits. Combining GIS repayments with provincial GIS top-ups and income-tested subsidies for older adults can generate an effective marginal tax rate well over 50% for every dollar of taxable income, making waiting beyond age 60 to claim CPP/QPP benefits unfavourable.

This issue is not particular to the CPP/QPP program itself, nor its deferral incentives, but it is the design of the Canadian retirement income system that features strong financial disincentives for low-income older adults to increase any taxable income past age 65 — including CPP/QPP benefits, employment earnings, workplace registered pension benefits, and RRSP/RRIF withdrawals.

> The concept of an effective tax rate comes up in discussions of the "poverty wall" that can prevent individuals on social assistance from rejoining the workforce. The loss of government benefits from earning a modest amount of income can exceed the employment income, particularly after taking account of childcare, commuting costs and other employment-related costs. The total loss of government benefits that prevents participation in the labour market is described as the "participation tax rate" (Milligan, 2020). It is constructed from "Marginal Effective Tax Rates" — the taxes payable on one extra hour of work as a percentage of the wage for that hour.
>
> Similarly, supports for low-income seniors can create a "retirement saving wall" — a disincentive to start retirement saving or an incentive to wind down all available tax-deferred retirement income in order to take full advantage of government support programs. (Chandler 2022, p. 10)

A further complicating feature of this system is that the GIS and similar social support programs are based on household income, not the net income of each recipient individually. Therefore, the marginal effective tax rate must be assessed based on household income in the evaluation of CPP/QPP claiming-age options.

Complicating Factor #7: OAS Claiming Age and Clawback

OAS benefits are income-tested like the GIS, except the income thresholds are much higher and based on individual rather than household income. However, affected individuals often have opportunities for pension income splitting, so evaluation at the household level is still required.

OAS benefits are reduced by 15 cents for every dollar of individual net income that exceeds a threshold ($90,997 in 2024 [Government of Canada, 2024]) until the OAS is reduced to zero. Full OAS payable at age 65 will be eliminated completely when net income reaches $148,065 (ibid). The upper limit of the clawback range is higher if OAS was postponed or the recipient is over age 75. Individuals who lived in Canada for less than 40 years when they claimed their OAS receive a smaller benefit, so the upper limit of their range will be lower.

OAS is included in taxable income so the clawback of spendable income for every dollar of additional income from another source like CPP/QPP is less than 15 cents. For example, if the marginal tax rate is 33% and the OAS clawback applies, then the effect of the clawback on an additional dollar CPP/QPP benefits is to reduce additional spendable income from 67 cents to 57 cents ((100% - 33%) x (100%-15%) = 57%).

Currently, 5.3% of OAS recipients are subject to partial repayment, and an additional 2.6% are subject to full repayment (OCA, 2023). Managing the CPP/QPP claiming age along with OAS claiming age and RRIF withdrawals can be an effective way to preserve partial OAS benefits and improve secure, lifelong, spendable income.

Complicating Factor #8: Opportunities for Couples to Reduce METR are Lost on the First Death

Couples who receive a significant portion of their combined retirement income through pensions or RRIF withdrawals will have considerable latitude to optimize pension income splitting. They can also "bounce" their RRIF income up and down, collecting OAS in some years and not others. The METR can change with the loss of these tax-saving opportunities after the first death. For example, the OAS clawback may only be triggered by the CPP/QPP pensions during the couple's joint lifetime.

Complicating Factor #9: Changes in Income Tax Bracket

Basic income taxes are progressive, with higher tax rates applied at higher income levels. Some individuals will experience changes in their income tax bracket over their lifetime, such as:

- a decrease after retirement from high-income employment;
- an increase after commencement of RRIF withdrawals (no later than age 71) or when minimum withdrawal rate increases accelerate after age 90;
- an increase or decrease due to major changes in an individual's spending buckets (for example, exceptionally good or bad investment performance, purchase or sale of a residence, or relocation to a jurisdiction with higher or lower taxes).

To the extent that these changes can be anticipated and are large enough to affect the increase in spendable income from a delay of CPP/QPP benefits, they will affect the incentive to delay.

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