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Comparing Nest Eggs: How CPP Reform Affects Retirement Choices

Reforms underway to the Canada Pension Plan (CPP) mean higher penalties for opting to receive CPP before age 65 and greater rewards for delaying take-up until after 65. Once the interaction of these adjustment factors with the tax system is taken into account, however, some Canadians will still have financial incentive to retire early.

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The Study In Brief

Important changes are now underway to Canada Pension Plan "adjustment factors" that will increase the penalty for those who retire before age 65, and will raise the amount of additional CPP benefits available for those who delay retirement beyond 65.

We aim to understand how changes to the pension adjustment factors affect incentives for retirement and the resources available for consumption. Although the precise effect of the new pension adjustments will depend on several individual attributes and decisions, their impact on financial resources can be inferred more generally from examining typical cases.

Accordingly, we simulate the flow of CPP benefits for a stylized individual retiring at different ages. Once the benefit is calculated, we discount the entire stream of future benefits back to the current age to get the net present value of the flow—a measure of the pension wealth contained in the lifetime flow of benefits—for each potential retirement age. Another way to think about the pension wealth measure is that it demonstrates the total amount of consumption afforded by the flow of pension income. If the pension wealth profile is flat across retirement ages, this means an individual's total lifetime consumption possibilities are not changed by his or her retirement-timing choice.

We find that the reforms have steepened the age profile of discounted total benefits across retirement ages. Retire early and an individual receives less; retire later and he receives more than before the reform. However, we find that the size of the gain (or loss) from the new adjustment factors depends critically on the receipt of the income-tested GIS benefit.

The new pension adjustment factors have moved in the right direction, but still fall short of offering many Canadians who retire at different ages the same value for their CPP benefits. In particular, those affected by the GIS clawbacks continue to face substantial financial disincentives to working longer. The simplest remedy would be to sever the link between work after age 60 and lower future GIS payments by exempting the actuarial-adjustment portion of the CPP earned by delaying retirement past 60 from GIS clawbacks.

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Important changes to the Canada Pension Plan (CPP) came into force on January 1, 2011. Among amendments to the Canada Pension Plan under Bill C-51 (40th Parliament, 2nd Session) were higher benefit penalties for opting to receive CPP before age 65 and greater rewards for delaying CPP take-up until after 65, phased in over several years through gradual changes to CPP "pension adjustment factors."

These adjustments aim to make the CPP more actuarially fair in the sense that individual decisions to retire early or late would leave the financial sustainability of the plan unaffected. By making it more profitable to delay CPP take-up and less profitable to retire early, they also encourage workers to work longer in life, in line with their longer life expectancy.

CPP income, however, is taxable and can trigger clawbacks of income-tested government benefits – such as the Guaranteed Income Supplement (GIS) – administered through the tax system. The interaction of pension adjustment factors with the tax system has been shown to significantly raise the incentive to retire early, especially for lower income seniors (Milligan 2005, Milligan and Schirle 2008).

This *Commentary* examines how the new adjustment factors being phased in will affect retirement incentives, and concludes that recipients of GIS, which is entirely clawed back at an income of $16,368, will continue to face a significant financial penalty to working longer. Other retirees, such as those with employer-provided pensions, will see these financial disincentives greatly reduced or removed.

Background

The Canada Pension Plan has facilitated early retirement since 1987 through the offer of an adjusted pension as early as age 60. However, the method for calculating the adjustments remained the same for 25 years—even though life expectancy has continued to lengthen at a very rapid pace.[1] These increasingly out-of-touch pension adjustments paid overly-generous pensions for early retirees, and shortchanged those who wanted to work longer.

Important changes now underway will update the adjustments for prospective retirees by increasing the penalty for those who retire before age 65, and by raising the amount of additional CPP benefits available for those who delay retirement beyond 65 (see Box 1).[2]

We would like to thank members of the C.D. Howe Institute Pension Policy Council, as well as Finn Poschmann and Daniel Schwanen, for helpful comments and suggestions.

1 A 60-year old man in 1987 could expect about 18.7 more years of life; just 20 years later in 2007 this life expectancy from age 60 had reached 22.1 years. This represents a rate of growth of about 2 months of life per year elapsed.

2 In this *Commentary* we do not discuss other amendments to the Canada Pension Plan under Bill C-51, which included removing the Work Cessation Test for those who opt for their retirement benefit prior to age 65 and easing the general drop-out provisions (see Office of the Chief Actuary 2010).

Box 1: Changes to the Pension Adjustment Factors

Individuals receive a full (unadjusted) pension if they take up their CPP benefits at age 65. For early take-up of the CPP retirement pension, the downward pension adjustment factor is increased from 0.5 percent to 0.6 percent for each month between CPP take-up and age 65. Under the old rules, a 60 year old would have his full pension discounted by 60 months × 0.5 percent = 30 percent. Under the new rules, this changes to 60 months × 0.6 percent = 36 percent. The new downward adjustment formula will be phased in over a five-year period, which started January 1, 2012.

For later take-up of the CPP retirement pensions, the upward pension adjustment factor is increased from 0.5 percent to 0.7 percent for each month between CPP take-up and age 65. Under the old rules, a 70 year old would have his full pension increased by 60 months x 0.5 percent = 30 percent. Under the new rules, this changes to 60 months × 0.7 percent = 42 percent.

The new upward adjustment will be phased in over a three-year period, which started January 1, 2011.

We aim to understand how changes to the pension adjustment factors affect incentives for retirement and the resources available for consumption. Although the precise effect of the new pension adjustments will depend on several individual attributes and decisions, their impact on financial resources can be inferred more generally from examining typical cases.

Accordingly, we simulate the flow of CPP benefits for a stylized individual retiring at different ages. Once the benefit is calculated, we discount the entire stream of future benefits back to the current age to get the net present value of the flow—a measure of the pension wealth contained in the lifetime flow of benefits—for each potential retirement age. Another way to think about the pension wealth measure is that it demonstrates the total amount of consumption afforded by the flow of pension income. If the pension wealth profile is flat across retirement ages, this means an individual's total lifetime consumption possibilities are not changed by his or her retirement-timing choice.[3]

We find that the reforms have steepened the age profile of discounted total benefits across retirement ages. Retire early and an individual receives less; retire later and he receives more than before the reform. However, we find that the size of the gain from the new adjustment factors depends critically on the receipt of the income-tested GIS benefit.

Discussion and Analysis

Our simulations make use of a simplified model of an individual to provide a clear demonstration of how the new pension adjustments affect retirement incentives. Our individual is male, from Ontario, and began his career at age 24. This worker enjoyed relatively high earnings during his career, making

3 Office of the Chief Actuary (2003) analyzes actuarial adjustments. Their model emphasizes a "collective" concept of actuarial neutrality that focuses on keeping the plan's aggregate finances unchanged at different retirement ages. In contrast, our focus here on individuals is motivated by the desire to understand how individual incentives and choices are affected by different pension adjustment rules. Any impact on plan finances of different retirement choices is an externality unlikely to be considered by the individual. Importantly, our concept of pension wealth can account for income taxes and any interaction with the Guaranteed Income Supplement.

contributions based on the Year's Maximum Pensionable Earnings (YMPE) each year. The individual is now age 60 and needs to decide when to retire and take up CPP benefits.[4] We consider potential retirement ages between 60 and 70. For ease of discourse, we call him Joe.

The high earnings assumption allows us to ignore drop-out provisions in the CPP benefit formulas, which reduce benefits for years with no contributions, so that at age 60 Joe is expecting the maximum monthly CPP benefit. The importance of drop-out provisions, high and low earnings, and other aspects of the CPP benefit formulas have been examined previously by Milligan and Schirle (2008).

If retiring at age 65, Joe would expect to receive $960 per month (based on 2011 CPP rates) and this monthly benefit would be indexed to inflation going forward. If retiring earlier than 65, Joe's monthly benefit is adjusted downward using the pension adjustment factors. Under the old rates of adjustment (0.5 percent per month), the maximum benefit Joe could receive at age 60 was $672 per month. Under the new adjustment rates (0.6 percent per month), Joe can receive $614 per month. If retiring later than 65, Joe's monthly benefit is adjusted upward. At age 70, the old adjustment rates would have provided Joe a monthly CPP benefit of $1,248. The new adjustment rates will provide Joe with a monthly CPP benefit of $1,363 at age 70.

We also consider how these benefits add up over Joe's lifetime, using the pension wealth measure. Future benefits are discounted and we account for male life expectancy based on 2007 mortality rates.[5] Retirement is considered for ages between 60 and 70, from the perspective of Joe at age 60.

We examine three cases:

1. In the first, we do not account for taxes and simply discount the gross CPP benefit flow back to age 60 for each retirement age.

2. For the second case, we account for income taxes and income-tested government-benefit clawbacks.[6] We also assume Joe receives $20,000 of employer-provided pension income. This extra income makes Joe ineligible for any benefits from the income-tested Guaranteed Income Supplement.

3. Finally, in the third case we remove the $20,000 of pension income and observe the significance of the Guaranteed Income Supplement.

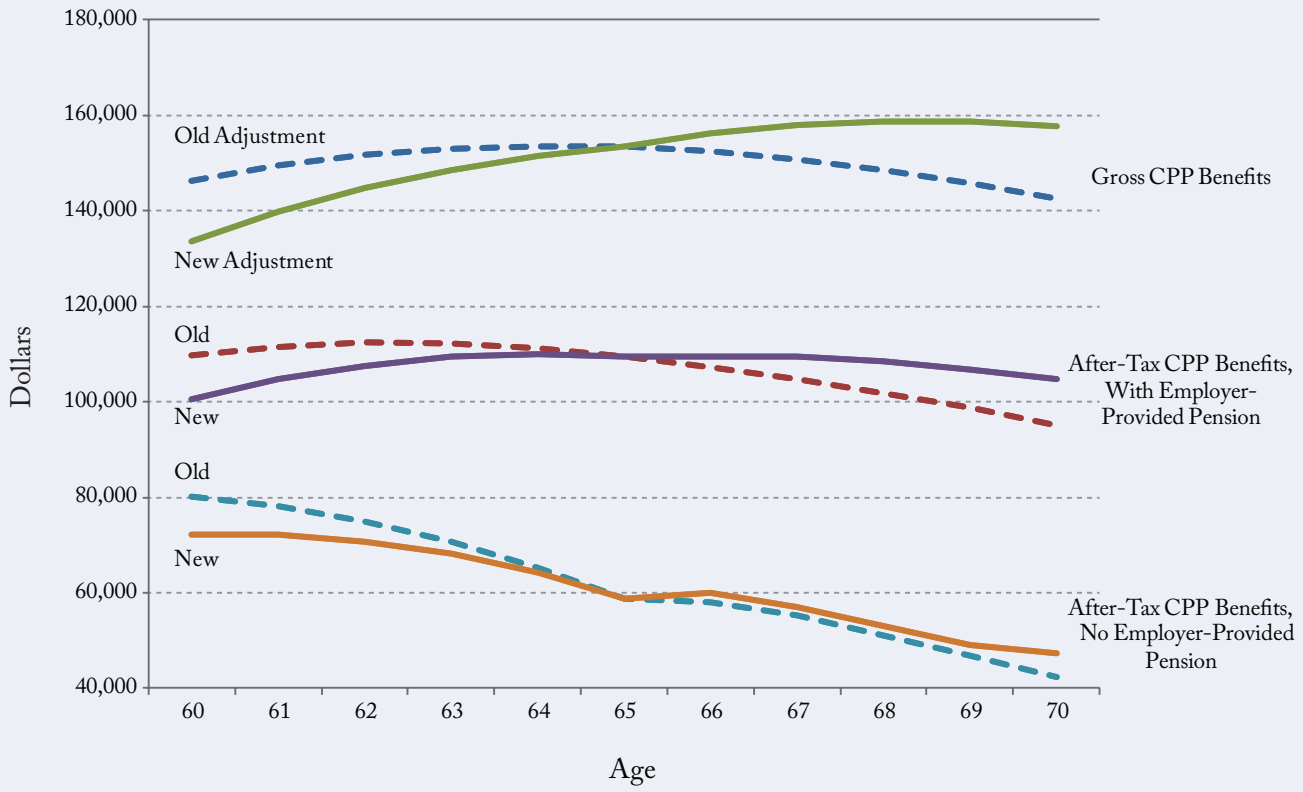
We present all three cases in Figure 1, with separate lines representing the old and the new pension adjustment factors.

4 Elimination of the Work Cessation Test implies these are now separate decisions for all workers, but we are abstracting from this. Note also that the new legislation allows for additional contributions to increase future CPP benefits.

5 We assume a real discount rate of 1.78 percent, based on the average Real Return Bond (RRB) yield from 2006 to 2010, an inflation rate of 2 percent, and nominal average industrial wage growth of 2.3 percent based on average YMPE growth from 2000-2011. Mortality rates were taken from the Canadian Human Mortality Database at http://www.prdh.umontreal.ca/BDLC. Note that the use of female life expectancy would change results slightly. In particular, pension wealth would be higher given longer life expectancy among women. Note we account for CPP contributions by the employee if a person continues to work, but not the mandatory contributions made by an employer. Note also that a higher discount rate and/or accounting for employer contributions would reduce our estimates of pension wealth at each retirement age, with larger reductions for later retirement ages – but these effects would be felt equally in all scenarios, therefore not altering our basic conclusions.

6 We account for federal and provincial personal income taxes that would have been paid on CPP income, as well as the negative effect of CPP income on federal and provincial income-tested benefits such as the federal GIS, the Ontario Guaranteed Annual Income System(GAINS), and sales tax credits.

Figure 1: Discounted Present Value of CPP Benefits, by Age of Retirement



Source: Authors' simulation model.

Case One: Gross CPP Benefits

For the first case, Joe would receive $153,386 in gross CPP benefits over his expected lifetime if he initiated his pension at age 65.[7] The benefit at age 65 is not affected by any changes to the pension adjustment factors, so both the "old" and the "new" lines must cross at age 65. With the new pension adjustment factors, Joe loses $12,527 in pension wealth for retirement initiated at age 60. However, the slope of the pension wealth profile is steeper with the new factors than with the old ones, implying that there is a greater gain to delaying retirement with the new adjustment factors. The larger upward pension adjustment factor for later retirement leads to a gain of $15,189 in pension wealth for retirement initiated at age 70.

7 Recall this result assumes work cessation at age 65. If, instead, Joe had ceased to work and make CPP contributions at age 60 and initiated his CPP pension at age 65, he would receive $147,293 in gross CPP benefits over his expected lifetime. Although amounts differ, modeling scenarios where Joe ceases to work at 60 but delay take-up of CPP would produce effects similar to those shown in Figure 1, therefore not altering our basic conclusions.

Case Two: After-Tax CPP Benefits, With Employer-Provided Pension

The second case considers after-tax pension profiles with employer-provided pension income. Under the old pension adjustment factors, the after-tax pension profiles indicate that Joe had few incentives to delay retirement past age 64 since pension wealth steadily declined for delayed retirement. The new pension adjustment factors improve the incentives to delay retirement. The difference between after-tax pension wealth at early and later retirement ages is noticeably smaller than the difference for gross pension wealth. The gross pension wealth profiles with the new pension adjustment factors indicate a wealth gain of $24,049 for delaying retirement from age 60 to age 70. After tax, with the new pension adjustment factors, Joe would gain $9,280 by delaying retirement from age 60 to age 64. If he further delays retirement, however, he still begins to lose CPP wealth, albeit at a much more gradual pace than under the old rules.

Case Three: After-Tax CPP Benefits, No Employer-Provided Pension

Finally, we consider a situation where Joe does not have any market-based income in retirement other than his CPP benefits.[8] As such, every dollar that Joe receives as CPP benefits reduces his GIS benefits – and, to a lower extent, payments from other government programs such as Ontario's GAINS – because of the income-tested clawbacks. For each year that Joe delays retirement, he gains in CPP benefits due to the pension adjustment factors as before. However, every extra dollar in CPP benefits received because of delayed retirement ends up reducing the GIS payment by 50 cents. This strong interaction between the CPP and the GIS effectively undercuts the power of the pension adjustment factor to properly adjust for later retirement. The resulting CPP pension wealth profiles decline under both the old and new pension adjustment factors, meaning that early retirement pays higher total lifetime benefits than later retirement.

We summarize these results in Figure 2, which shows the change in pension wealth from delaying retirement from age 60 to age 65. Under the new rules, the gain is larger for two cases and the loss smaller in the third. However, this gain is not enough to bring the case without an employer-provided pension out of the negative range.

Conclusion

Our analysis has examined how the new pension adjustment factors now being phased in will affect the incentive to retire. By increasing the pension adjustment factors, there is a greater discount to early retirement and increased benefit to later retirement. This means the new pension adjustment factors decrease the incentive to retire early.

For those without other sources of income and who collect the Guaranteed Income Supplement, the profile of pension wealth slopes sharply downward, meaning that pension wealth is maximized with retirement at age 60. For those with other sources of income, however, the new pension adjustment factors have somewhat flattened the slope of after-tax pension wealth profiles.

The new pension adjustment factors have moved in the right direction, but still fall short of offering many Canadians who retire at different ages the same value for their CPP benefits. In particular,

8 Nearly 34 percent of Old Age Security recipients also receive some GIS. This makes our third case very relevant for a significant portion of the Canadian population.

Figure 2: The Gain in Pension Wealth for Delaying Retirement from Age 60 to 65

Source: Authors' simulation model.

those affected by the GIS clawbacks continue to face substantial financial disincentives to working longer. As proposed before (Milligan 2005, Milligan and Schirle 2008), the simplest remedy would be to sever the link between work after age 60 and lower future GIS payments. This could be achieved by exempting the actuarial-adjustment portion of the CPP earned by delaying retirement past 60 from GIS clawbacks.

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The C.D. Howe Institute launched the Pension Papers in May 2007 to address key challenges facing Canada's system of retirement saving, assess current developments, identify regulatory strengths and shortfalls, and make recommendations to ensure the integrity of pension earnings for the growing number of Canadians approaching retirement. The Institute gratefully acknowledges the participation of the Policy Council for the program.

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