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**Strengthening Fairness and Funding
in the Canada Pension Plan:
Is Raising the Retirement Age an Option?**

**Martin Hering
Thomas R. Klassen**

SEDAP Research Paper No. 263

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Strengthening Fairness and Funding in the Canada Pension Plan: Is Raising the Retirement Age an Option?*

Abstract: This paper seeks to contribute to a forward-looking debate on possible reform options for the Canada Pension Plan (CPP) and the Quebec Pension Plan (QPP). Even though it focuses on the CPP, most of its analysis applies to the QPP as well since the two programs are largely identical. This paper does not provide a broad survey of all possible reform options, but rather analyzes one vital option that has received insufficient attention in previous debates: raising the normal retirement age from 65 to 67 years. A discussion of this option is warranted not only because it could prevent future financing problems in Canada's public pension insurance programs, but also because it could improve fairness across generations. The significant increase in life expectancy raises the question of whether the current retirement ages of 60 years, for earliest CPP and QPP benefits, and 65 years, for full benefits, are too low. Should future generations pay for the longevity increases of the current generation of workers, or should current workers share the costs by retiring at a later age? We conclude that raising the normal age from 65 to 67 years—and the earliest age from 60 to 62 years—is a financially effective, intergenerationally fair, and politically acceptable option for improving the CPP and for addressing the QPP's problems. We suggest that the option of raising the retirement age needs to be discussed well before longevity increases or funding problems occur and that a broad consultation with stakeholders and citizens would be an essential part of a debate on raising the retirement age in Canada.

Keywords: pension systems, pensions, retirement, retirement age, life expectancy, Canada

JEL Classifications: H53, H55, J20, J26, J32, L38

Résumé: Le présent document vise à contribuer à un débat prospectif sur les options de réforme possibles du Régime de pensions du Canada (RPC) et du Régime de rentes du Québec (RRQ). Même si notre analyse se concentre plus particulièrement sur le RPC, la plupart des observations s'applique aussi à la RRQ puisque que ces deux programmes sont largement identiques. Ce document ne présente pas une étude exhaustive de toutes les réformes potentielles se limitant à une option importante qui n'a pas reçu l'attention qu'elle mérite dans les débats antérieurs: reculer l'âge de la retraite de 65 à 67 ans. Examiner cette option se justifie pour deux raisons. D'une part, elle pourrait empêcher les problèmes de financement futur des programmes de pension publics d'assurance du Canada et d'autre part elle pourrait améliorer l'équité intergénérationnelle. L'augmentation significative de l'espérance de vie pose la question de savoir si l'âge de la retraite anticipée à 60 ans, pour commencer à toucher des allocations partielles du RPC et du RRQ, et de 65 ans, pour toucher les allocations complètes, sont trop bas. Les générations futures devraient-elles porter l'entièreté du fardeau financier lié à l'augmentation de l'espérance de vie des travailleurs de la génération courante ou cette dernière devrait-elle partager les coûts en prenant sa retraite à un âge plus avancé? Nous concluons que le relèvement de l'âge normal du départ à la retraite de 65 à 67 ans (et de la retraite anticipée de 60 à 62 ans) est une option financière efficace, équitable et politiquement acceptable pour l'amélioration la situation actuelle du RPC et s'attaquer aux problèmes du RRQ. Nous suggérons que l'option du relèvement de l'âge de la retraite soit discutée bien avant que l'espérance de vie n'augmente ou que l'on rencontre des problèmes de financement et qu'une vaste consultation avec les parties prenantes et les citoyens constitue un élément essentiel du débat sur le relèvement de l'âge de la retraite au Canada.

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Introduction

In 1997, the federal and provincial governments made important changes to the social insurance programs in Canada's retirement income system, the Canada Pension Plan (CPP) and the Québec Pension Plan (QPP). The two programs are twins: they have similar provisions—pension benefits equivalent to 25 percent of pensionable earnings at the normal retirement age of 65 years—their administration is fully coordinated, and they are increasingly integrated due to rising labour mobility.¹ To guarantee the financing of CPP and QPP benefits in the future and to achieve fairness across generations, federal and provincial policymakers decided on a rapid increase of employers' and employees' contribution rate, which they would raise from 5.6 percent to 9.9 percent and keep constant for current and future generations. To achieve the goal of stable contributions and to secure the CPP and the QPP's fiscal stability in the face of an aging population, they planned to run surpluses and increase the programs' reserve funds to about 25 percent of plan liabilities (Federal Provincial and Territorial Governments of Canada 1996; Régie des rentes du Québec 1996).

Despite the attempt to fix the CPP and QPP's problems in the long term, fiscal sustainability and fair intergenerational burden sharing will become important issues on the Canadian policy agenda in the next few years. We see four main reasons for a new debate on reforms of the CPP and the QPP. First, the QPP is in financial trouble: if the contribution rate of 9.9 percent is maintained, the plan will have depleted its reserve fund by about 2050 and, if no

¹ For example, the proportion of QPP beneficiaries who had also contributed to the CPP during their careers has rapidly increased in the last 20 years and is expected to continue to increase in the future. In 1990, only 7 percent of new QPP beneficiaries had made contributions to the CPP. By 2007, their share had more than doubled, reaching 16 percent. In recent years, about 25 percent of Québec employees had made contributions to both the QPP and the CPP (Régie des rentes du Québec 2008b, 16-17).

other measures were to be adopted, would have to raise its contribution rate to 12.5 percent (Régie des rentes du Québec 2008b, 15). Second, unless the reform of the QPP is coordinated with that of the CPP, the QPP's financing problems could threaten the parity of the two programs, which is one of their founding principles (Simeon 1972, 57-59). Third, even though the CPP does not have similar medium-term financing problems, pressures for adjustments could emerge in the next decade. Since the difference between the current contribution rate and the minimum contribution rate required to finance the CPP is less than 0.1 percentage points, unexpected adverse shifts in key conditions, such as life expectancy, employment, wage growth, and investment returns, could force the federal and provincial governments to make changes to the CPP. Unlike the QPP, the CPP has a fail-safe mechanism that leads to automatic contribution increases and benefit reductions if policymakers do not agree on changes (Little 2008, 248-250). Thus, even if it had only a relatively minor financing shortfall, the CPP would face strong political pressures for reform in order to avoid the automatic—and unpopular—contribution increases and benefit cuts. The CPP reserve fund losses due to the sharp decline of equity markets in 2008 (CPP Investment Board 2009a, 2009b)—more than \$23 billion, or about half of the CPP's annual expenditures—could create a predicament in the future. Fourth, without reforms, higher life expectancy will lead to an unintended and significant expansion of pension benefits, since retirees receive the same benefits over a longer period of time, and thus to much higher costs. Canadians now live considerably longer than policymakers expected when they reformed the CPP and QPP in the late 1990s (Régie des rentes du Québec 2008b, 16). It is estimated that by the middle of this century, men and women who retire at age 65 will live, on average, until age 87 and 89, respectively. The latest projections of life expectancy at age 65 in 2050 are thus 3.5 years and 1.4 years higher for men and women respectively than those made

during the last round of reforms in the late 1990s (Office of the Chief Actuary 2007, 45, 1997, 22).

This paper seeks to contribute to a forward-looking debate on possible reform options for the CPP and the QPP. Even though it focuses on the CPP, most of its analysis applies to the QPP as well since the two programs are largely identical. This paper does not provide a broad survey of all possible reform options, but rather analyzes one vital option that has received insufficient attention in previous debates: raising the normal retirement age from 65 to 67 years.² A discussion of this option is warranted not only because it could prevent future financing problems in Canada's public pension insurance programs, but also because it could improve fairness across generations. The significant increase in life expectancy raises the question of whether the current retirement ages of 60 years, for earliest CPP and QPP benefits, and 65 years, for full benefits, are too low. Should future generations pay for the longevity increases of the current generation of workers, or should current workers share the costs by retiring at a later age? We suggest that the option of raising the retirement age needs to be discussed well before longevity increases or funding problems occur. Since workers need time to adjust their retirement plans, governments have to announce a change of the retirement age many years in advance of the implementation this policy. In the United States, the decision to increase the retirement age from 65 to 67 years was made in the early 1980s, but the implementation began only in 2000 and will end in 2024. In recent years, other countries have made similar decisions: in 2006, the United Kingdom decided to increase the normal age of retirement gradually from 65

² In the mid-1990s, the option of raising the retirement age was discussed by federal officials such as David Dodge, Ministry of Finance, and by academics such as Robert L. Brown, University of Waterloo (Little 2008, 108-110). In recent years, a number of researchers analyzed the possibility of increasing the retirement age (Townson 2006; Le Goff 2003; Brown 2002; Laurin 2009).

to 68 years, and, in 2007, Germany adopted an increase of the normal age from 65 to 67 years and of the earliest eligibility age from 62 to 63 years. The transition to a higher retirement age will be completed in 2046 in the United Kingdom and in 2029 in Germany. In both countries, the retirement age increase was the key response to unexpected longevity increases.

In our view, it is time to review this option in a debate about changes that need to be made to the CPP and QPP. The deliberation we propose about what the CPP and QPP might look like in the future should be broader than the reform debates of the 1990s and the recently launched consultations on changes to the CPP and QPP (Régie des rentes du Québec 2008b; Federal Provincial and Territorial Governments of Canada 2009b). It should consider not only the two key pension reform options, changes to contributions and to benefits, but also a third key option: changes of the earliest and normal eligibility ages. Specifically, as noted earlier, any debate needs to examine if the current ages, which were introduced in the mid-1960s and mid-1980s, are too low.

This paper analyzes whether raising the retirement age from 65 to 67 years would be a financially effective, intergenerationally fair, and politically acceptable option for improving the funding of the CPP. It is divided into five sections: the first section examines both the key policy challenges that arise from the rapidly aging population in Canada and some of the policy reforms that governments have recently implemented to encourage later retirement; the second section outlines the main elements of the existing retirement income system and analyses how current retirement ages in pensions have arisen and particularly how early retirement came to be institutionalized; the third section, drawing on the experience of other nations and new actuarial

projections that the authors requested from the Office of the Chief Actuary, examines whether raising the age of earliest and normal retirement in the CPP, currently 60 and 65 respectively, is an effective option for improving fiscal sustainability; the fourth section discusses the role of raising the retirement age in improving fairness across generations; and the fifth section examines whether citizens would support a retirement age increase even though they preferred to retire early, and what policymakers could do to make a retirement age reform more acceptable. The paper concludes that a serious and informed debate of retirement age in public pensions is in the best interest of Canadians.

Key Policy Challenges in an Aging Population

With the leading edge of the large baby boom generation (people born between 1946 and 1965) now reaching age 60, the Canadian population is aging very rapidly due to lower fertility rates and increasing life expectancy. At present, a record one in seven Canadians is 65 and older. This ratio is projected to increase to one in three-and-a-half over the next 25 years (Statistics Canada 2007b, 7). As seen in Figure 1 below, the demographically unique baby boom generation, whose members are presently between 43 and 63 years, will shape retirement patterns for the next several decades. It should be noted that today individuals at age 65—the traditional marker of old age and retirement during the past several decades—are expected to live longer than they ever have before (Statistics Canada 2007b, 7). Canadian women who are currently 65 years old can expect to live another 21.4 years, and men another 18.2 years, throughout most of which they will be healthy (Statistics Canada 2009a, 12). Life expectancy at age 65 has increased

significantly since 1966, the year in which the CPP and QPP were created. As seen in Figure 2, over the past 40 years, life expectancy at 65 has grown by more than 5 years for both men and women. Over the next four decades, the Office of the Chief Actuary projects an increase of life expectancy at age 65 of 2.6 years for males and 2.2 years for females. However, life expectancy in 2050 may well be higher than it is in this best estimate projection. In another, less likely, scenario the Chief Actuary projects that life expectancy increases by more than 4 years for both men and women (Office of the Chief Actuary 2007, 45). In addition, longevity is expected to continue to improve, likely by an additional year, between 2050 and 2075 (Office of the Chief Actuary 2007, 121).

There are numerous policy challenges presented by a rapidly aging population. Two key challenges are (1) the fiscal sustainability of public pensions and (2) the withdrawal of many workers from the labour force during a relatively short period of time. In addition, in pension systems in which the normal retirement age is fixed, increasing life expectancy creates challenges for maintaining intergenerational fairness, which will be discussed in the fourth section of this paper.

The central policy challenge is to ensure the fiscal sustainability of public (and indeed private) pensions. Because of a more rapid than expected increase in life expectancy and lower than projected wage growth, the QPP is already not sustainable in the long run (see Figure 3), and must make reforms to stabilize long-term funding (Régie des rentes du Québec 2007, 46). The 2008 consultation paper released by the Régie des rentes du Québec, which pays the pensions, noted that the reserve fund of the Québec Pension Plan will be depleted by about 2050:

The actuarial report as at 31 December 2006 shows that the QPP's funding situation is increasingly worrisome. At that date, the QPP reserve was \$33 billion. The Plan is ready to face the retirement of the baby boom generation, which will occur from 2010 to 2030. However, the current contribution rate of 9.9 percent will not ensure stable, long-term funding. According to the projections in the actuarial report, beginning in 2011, a portion of the Plan's investment income will have to be used to cover the difference between cash outflows and contributions. The reserve will be completely depleted in 2051 (Régie des rentes du Québec 2008b, 15).

In early 2009, the Régies des rentes reported that its portfolio declined by 26 percent in 2008, falling from \$35 billion to \$26 billion. This might lead to a depletion of the reserve fund in 2037, more than a decade sooner than previously projected (Régie des rentes du Québec 2009). The decline was a result of equity market losses incurred in 2008 by the Caisse de dépôt et placement, which invests the Québec Pension Fund contributions (Caisse de dépôt et placement du Québec 2009). In light of the demographic and wage growth trends as well as the equity investment returns of the Québec plan, it is almost certain that adjustments will have to be made to the provincial scheme. If the long-standing policy of ensuring that both plans provide similar benefits and have similar contribution rates were maintained, any reforms of the Québec Pension Plan would impact the Canada Pension Plan as well.

With regard to the Canada Pension Plan, the 2006 actuarial report by the Office of the Chief Actuary states that the pension plan in its current form is "financially sustainable over the long term" (Office of the Chief Actuary 2007, 12). In 2009, the federal and provincial finance ministers' triennial review confirmed that the CPP is financially sound (Federal Provincial and Territorial Governments of Canada 2009a). As seen in Figure 3, the contribution rate of 9.9 percent is sufficient for paying benefits and for building a reserve of about 5.5 years of

expenditures, which is equivalent to 25 percent of liabilities. However, the report notes that this judgement rests on a number of assumptions—with regard to wage growth, investment returns, or life expectancy for example—which cannot be predicted with certainty in the long run. As the report explains, there are a number of economic and demographic scenarios in which the CPP could be in a situation of either having to raise the contribution rate from 9.9 percent to more than 10 percent or make other policy changes (Office of the Chief Actuary 2007, 41-60). For example, the actuarial projections of the CPP indicate that investment returns of negative 10 percent over two years would make the plan unsustainable and necessitate policy reforms. During the 2009 fiscal year, the return was a negative 18.6 percent (CPP Investment Board 2009b), thus raising the possibility—should investment returns remain below those projected and not be counterbalanced by unexpected favourable developments—that the next actuarial report, to be released in 2010, would show that either the contribution rate, the benefits or the eligibility conditions needed to be adjusted.

Fiscal sustainability is an issue not only for the CPP and QPP but also for Canada's other pension programs. With regard to the Old Age Security program, the ratio of expenditures to the gross domestic product will increase by nearly 50 percent over the next two decades, from 2.2 percent at present to a high of 3.1 percent in 2030, as the number of beneficiaries for the basic pension more than doubles (Office of the Chief Actuary 2008, 10). As these payments are made from general tax revenues, federal politicians will need to determine the degree to which such an increase is warranted and sustainable, and whether there are policy reforms that might be needed (Brown 2002, 24-27). With regard to employer pension plans, equity market declines in 2008 caused the funding of employer-defined benefit pension plans to reach very low levels by the end

of that year, and to decrease the value of assets in defined contribution plans dramatically. In Ontario, where the majority of Canadian employer pension plans are registered, the median solvency ratio for defined benefit plans was expected to decrease from 93 percent to 77 percent in 2008 (Financial Services Commission of Ontario 2009, 5). One expected result of this is that, if market conditions remain depressed, at least for the next several years, and possibly longer, higher pension contributions may be required for defined benefit plans, and retirement may be delayed for members of defined contribution plans whose savings will be less than anticipated (Daw 2009).

The second policy challenge in an aging population is the withdrawal of a large number of workers from the labour market (Policy Research Initiative 2004). With individuals typically exiting the workforce between the ages of 55 and 64, there have never been so many people close to retirement. The number of people in the 15-24 age group (that is, those about to enter the labour market) to those in the 55-64 age group (those approaching retirement) was 1.1 in 2006, compared to 2.3 in 1976 (Statistics Canada 2007a, 12). According to Statistics Canada population projections, in about a decade, people at the age where they can exit the labour force may outnumber those entering it (Statistics Canada 2007a, 12). Projecting labour force demand is notoriously difficult as it varies from region to region and from sector to sector. In addition, demand for labour can fluctuate dramatically based on short-term economic and other conditions, such as those generated by technological progress. Nevertheless, given the aging population that will cause widespread exit of workers from the labour market, and the relatively smaller number of younger workers entering the labour force, it is reasonable to expect that labour shortages will be more common in the future than in the past. In any case, as noted by the federal government's

Skills Research Initiative, population aging is likely to cause an “increased scarcity of labour, relative to capital, thus resulting in an increase in wage rates relative to the return on capital” (Industry Canada and Policy Research Directorate Human Resources and Social Development Canada 2008, 3). In fact, all Statistics Canada projections show that the overall labour force participation rate will decline over the next two decades, if continued into the future. The increase in the participation rate of older workers over the last decade will delay by a few years the decline in the participation rate but will not reverse it (Martel et al. 2007, 3.8). Historically, immigration has been the prime policy tool used to address skills shortages and to increase the size of the labour force. However, the scale of the upcoming wave of retirements means that increasing immigration will not be able to reverse the falling participation rate (Kerr and Beaujot 2005; Martel et al. 2007). Consequently, the Standing Senate Committee on Banking, Trade and Commerce concluded in its 2006 report that:

[R]ecognizing the labour shortages that might occur with population ageing, workers should have incentives to remain in the labour market and to increase the nature and level of their labour market activity, if they so choose. At a minimum, any disincentives should be removed... While we recognize that the labour force participation rate of older workers has increased over time as relatively more older workers are educated, healthy and want to work... the Committee believes that the proper incentives would increase their labour force participation even further (Canada Standing Senate Committee on Banking Trade and Commerce 2006, 20).

One strategy to address both policy challenges—to sustain fiscal sustainability of public pensions and to ensure a sufficient level of labour-force growth—is to increase retirement ages. Policymakers have taken steps to provide workers with the option, and incentives, to retire later (Gillin et al. 2005). Provincial governments have eliminated contractual mandatory retirement at age 65—Québec and Manitoba did so in the 1980s, and the remaining provinces in the time since

2005.³ The only province that continues to permit contractual mandatory retirement is New Brunswick, but this only as part of a *bone fide* pension plan. In all provinces, retirement at a specific age is permissible if it is shown to be a *bone fide* occupational retirement. Only employees in industries within federal jurisdiction continue to face mandatory retirement due to provisions under the *Canadian Human Rights Act*.⁴ However, the 2008 report of the federal expert panel on older workers recommended that legislation be amended to eliminate contractual mandatory retirement (Expert Panel on Older Workers 2008, iii). In the 2007 federal budget, the Canadian government proposed to permit an employer to pay a partial pension to an employee and simultaneously to provide that employee with further pension benefit accruals. The measure, which became effective in 2008, applies only to employees aged 55 and over who are entitled to an unreduced pension. This effectively allows part-time work arrangements for some older workers. In the same budget, the federal government began to allow individuals to contribute to their private retirement savings plans up until the year they turn 71, as opposed to 69. Finally, the government introduced a tax credit for low-income individuals and families with employment earnings. This has encouraged paid work for low-income earners aged 65 and over, thus reducing the work disincentive effect of the Old Age Security program. The 2008 report by the federal Expert Panel on Older Workers recommended more measures to extend working lives.

Specifically:

From the broad perspective of benefiting society and the economy as a whole, increased labour force participation and attachment by older workers stands to increase national income, lessen fiscal pressures on governments caused by a shrinking tax base, and alleviate dependency and expenditures on public programs for older individuals. In the labour market, increased participation can alleviate labour shortages and result in a higher standard of living for older individuals who

³ Nova Scotia is the last province to do so, with legislation taking effect in July 2009.

⁴ The federal government has eliminated mandatory retirement for its own employees in the 1980s. However, the armed forces and RCMP continue to have some mandatory retirement provisions.

continue to work... Both individuals and employers can benefit significantly. Workers would have improved career opportunities and retirement options, and employers would benefit from the increased output that would result from greater labour force participation of experienced workers (Expert Panel on Older Workers 2008, 33).

The Panel recommended that “the federal, provincial and territorial governments work together to undertake and implement changes to the tax and pension systems which would remove systemic barriers and disincentives to work, with the aim of achieving a program design that provides choices and flexibility for older workers who wish to participate in the labour force and earn income” (Expert Panel on Older Workers 2008, iii). In 2009, the federal and provincial finance ministers made a number of proposals for improving flexible retirement provisions in the CPP and for allowing workers to combine pensions and work, including a removal of the requirement for individuals to either stop working or significantly reduce earnings before receiving their benefits and an increase of pension adjustments for late pension receipt (after the age of 65) from 6 percent to 8.4 percent per year (Federal Provincial and Territorial Governments of Canada 2009b).

Although it is too early to judge the effect of the reforms undertaken to date, there is some evidence that retirement plans of older workers are incorporating later retirement dates than they did in past decades. This will be discussed in detail in section 5 of this paper. In almost all cases, more workers planned to work later in 2007 than was the case in the early 1990s (Schellenberg and Ostrovsky 2008, table 1). The shift in preferences is relatively small, although it is what would be expected as most workers continue to wish to retire sooner rather than later. A survey conducted in December 2008 revealed that 48 percent of employed Canadians believe they will work beyond age 65 (Perry 2009). Policies to increase retirement age must counteract a

two-decade-long term trend toward earlier retirement. Indeed, as seen in Figure 4, until the early 1980s the median retirement age in Canada was 65. It then declined steadily to about 61 years until the late 1990s and has since fluctuated around that age. Between 2000 and 2008, the median age of retirement in the public sector was about 3 years lower than it was in the private sector: 59 years versus 62 years (Statistics Canada 2009b). A review of how early retirement came to be institutionalized is the focus of the next section.

Retirement Age Rules in Canada's Pension Programs

Canada's income security system is composed of public and private pillars: those in retirement receive income from several sources, no single one of which is on its own sufficient to provide for an adequate income (Canadian Institute of Actuaries 1995). Each pension program has unique retirement age provisions. Below, the Canada Pension Plan, the Old Age Security Program, occupational pensions, and individual (registered) retirement plans are analyzed with regard to eligibility ages. Historically, in Canada and in other nations, age 70 or even 75 has been the age at which elderly individuals become entitled to income security. Indeed, Germany, the nation which was first in the world to adopt an old-age social insurance program, in 1889, set the eligibility age at 70. Newfoundland's old age pension, begun in 1911, set age 75 as the minimum age to receive benefits (Finkel 2007, 106). Canada's *Old Age Pension Act*, in force from 1927 to 1952, set the pensionable age at 70. In the 1950s, when the *Old Age Security Act* was implemented, 70 continued to be the age when recipients were eligible for full benefits (Guest 1997, 137). In the Canada Pension Plan, introduced in the mid-1960s, the age for payment of

benefits was gradually reduced from 70 years to 65 years over a five-year period. At the same time, the age to receive Old Age Security payments was likewise reduced to 65. In its initial proposal for creating the CPP, the federal government planned to maintain the normal retirement age of 70 in the OAS and apply the same condition to the new earnings-related program. It wanted to offer only an early retirement option from age 65 with permanent benefit reductions of about 6 percent per year (Bryden 1974, 145). Party competition in the House of Commons, especially proposals of the NDP and the Cr ditistes for reducing the retirement age to 65 years, convinced the Liberal government to lower the normal retirement age gradually (Bryden 1974, 150-151). As a result, age 65 became the accepted marker for exit from the labour market and entry into old age, primarily because of these two federal income support programs.

In 1984, QPP benefits became payable as early as at age 60—a policy that was implemented for the CPP in 1987. However, for each year of retirement before the normal age of 65 years, benefits are reduced for the rest of a pensioner’s life by 6 percent per year (by 0.5 percent per month). As result, if the pension is started at age 60, the monthly payment is 30 percent lower than if it had been put off till age 65. The size of these adjustments was actuarially neutral when the early retirement option was introduced in the 1980s, but is now too low for the CPP (Office of the Chief Actuary 2003). A similar formula applies after age 65 with the result that delaying the pension by a year increases payments by 6 percent. There is no financial benefit in delaying the pension after the age of 70. In 2009, the federal and provincial finance ministers proposed to increase the benefit reduction for early pension receipt from 6 percent to 7.2 percent per year and to raise the benefit increase for late pension receipt from 6 percent to 8.4 percent per year (Federal Provincial and Territorial Governments of Canada 2009b). The cessation-of-work

rule under the Canada Pension Plan requires those aged 60 to 64 to stop working for the month before and after they start receiving the benefit, or earn a very low income (less than the monthly maximum CPP pension payment) during these two months. Once in receipt of CPP benefits, individuals can resume employment or increase their employment wages without this affecting the pension amount. However, workers cannot resume contributions to the Canada Pension Plan on any future earnings from employment. The cessation rule represents an impediment to the gradual withdrawal of workers from the labour force (Expert Panel on Older Workers 2008, 45; Policy Research Initiative 2004, 34-35). By requiring workers to make QPP contributions while receiving a pension and by providing a pension supplement for each year of contributions, the Québec government, in 2009, removed this barrier to phased retirement (Régie des rentes du Québec 2008a). In 2009, the federal and provincial finance ministers proposed to remove the work cessation test in 2012 (Federal Provincial and Territorial Governments of Canada 2009b).

The Old Age Security program forms the other half of public pensions in Canada. It is an almost universal flat-rate pension financed from general tax revenues, which provides a modest income beginning at age 65 for all citizens and permanent residents who have lived in Canada for at least 10 years since age 18. Individuals who have lived in Canada for less than 40 years receive a reduced pension, with each year of non-residency reducing the payment by 2.5 percent. A component of the Old Age Security program – the Guaranteed Income Supplement – provides additional money, on top of the basic pension, to low-income seniors. This secondary payment is sufficient to bring recipients (just) above the poverty line.

About 35 percent of the workforce is covered by employer-sponsored (registered) pension plans—a percentage that is declining. Coverage is highest in the public sector and in large firms with a unionized workforce. About 80 percent of plan members are in defined benefit plans, although there has been an increase in defined contribution plans relative to defined benefit plans over the past two decades (Gunderson 2007, 3-4; Baldwin 2007, 14-19; Morissette and Ostrovsky 2006). Registered plans receive preferential tax treatment: employers are able to deduct contributions to occupational pension plans as a business expense when calculating income subject to income tax; returns earned within the plan are sheltered from taxation; and employees deduct their contributions from taxable income. The total value of the tax which is foregone because of the preferential tax treatment given to occupational pension plans is large, exceeding \$13 billion per year in 2005 (Finance Canada 2008, 19). This amount excludes provincial tax expenditures on retirement programs. These plans, particularly those with defined benefits, contain considerable incentives for early retirement (Gunderson 2007). Retirement age rules in these plans are influenced by both federal and provincial legislation. The federal *Income Tax Act* permits full pension benefits to be paid (1) at age 60, or (2) after 30 years of service regardless of age, or (3) when age and the number of years of service add up to 80 (Hall 1996, 155-156). The *Income Tax Act* requires that full pension benefits be paid no later than age 69, but, in many provinces, pension standards legislation specifies a normal retirement age of 65 or 66. In most provinces, pension legislation gives employees the right to retire up to 10 years before the normal retirement age, usually as early as at age 55 (Kaplan 2006, 272-278). The *Income Tax Act* requires a reduction of early retirement benefits of at least 3 percent per year which is very low compared to that of 6 percent per year required for CPP and QPP benefits. The codification of the tax regulations for the plans, and the early retirement provisions, was undertaken in the 1980s

and early 1990s when there was fast labour-force growth, relatively high unemployment and restructuring linked to NAFTA. Thus, there was strong demand to accommodate existing, negotiated early-retirement arrangements. For example, the federal government made special rules for workers in public safety occupations, such as police officers and fire fighters, allowing them to receive full pensions at age 55 or after 25 years of service. In addition, under certain conditions, it allowed special early retirement benefits for workforce-downsizing programs (Kaplan 2006, 279-280; Canada Revenue Agency 1992).

Research has shown that there are no financial incentives to increase pension benefits further, for workers in many defined benefit plans to continue to work past a particular age (Schirle 2008; Pesando and Gunderson 1988; Pescarus and Rivard 2005). For example, pensions may often be paid at age 50, with some workers eligible for full pensions by age 55. In many cases, workers who can receive full pensions at age 55 find that further increases in benefits for additional years of employment will not adequately compensate for the years of foregone pension payments. As a result, about 20 percent of employees retire before the age of 60, with a peak at age 55. Almost 80 percent of retirees who receive occupational pension benefits before age 60 opt for early CPP or QPP benefits at age 60 (Wannell 2007a, 13-15). Individual registered retirement savings plans (RRSPs) create additional early retirement incentives. They provide a means for individuals to save for retirement with preferential tax treatment. Contributions to RRSPs are, to a defined limit, deductible from taxable income, and increases in the value of the plan assets are not taxed. As there is no earliest retirement age, funds may be withdrawn at any time from a plan, but income taken is then taxable. In other nations, individual retirement savings accounts may generally not be withdrawn before retirement or a specified age (for example, age

65 for the KiwiSaver program in New Zealand) or are subject to a penalty tax (for instance, the 10-percent for individual retirement accounts in the United States).

In summary, Canada has a multi-pillar pension system in which most employees depend on a combination of income from public and private pension schemes (including savings via individual registered retirement savings plans) for maintaining their standard of living in retirement. In the public system, there are early retirement options in the CPP and QPP. The CPP's work cessation rule limits the possibility of a gradual withdrawal from employment. In the private pension system, Canada has generous tax subsidies, both for occupational and for personal pensions, but few regulatory restrictions with regards to retirement age and early retirement benefits. The codification of tax regulations for these plans in the 1980s and 1990s provided for numerous early retirement pathways, especially for defined benefit plans. Individual (tax-supported) savings also provide considerable incentives for early retirement by not incorporating either an age floor or penalties for early withdrawals.

Does Raising the Retirement Age Improve Fiscal Sustainability?

Since an increase of the retirement age both reduces expenditures and increases revenues, it is the most effective option for responding to the financing pressures generated by population aging. Even relatively small changes to the retirement age lead to large improvements in the fiscal sustainability of pension systems: according to an estimate by the OECD, the effect of an

increase of the effective retirement age by about one year is similar to that of a reduction of the pension benefit level by about 17 percent (OECD 2001, 164). Thus, if policymakers wanted to strengthen fiscal sustainability and prevent an increase of the contribution rate, raising the retirement age would be an attractive option, especially if they also wanted to limit or even avoid benefit cuts. A growing number of countries, including the United States and EU member states, have considered this option and studied its potential effects on pension finances. They have found that a retirement age increase significantly contributes to improving fiscal sustainability. If this measure were implemented in Canada, it would have a similar effect: data that the authors requested from the Chief Actuary of the Canada Pension Plan shows that increasing the retirement age significantly strengthens the sustainability of Canada's public, earnings-related pension program.

The European Union, which conducted the most extensive studies on the effectiveness of a retirement-age increase, found that "a one-year increase in the effective retirement age would correspond to absorbing, on average, about 20 percent of the expected increase in pension expenditure in 2050" (European Commission and European Council 2006, 7). Thus, a large retirement-age increase could by itself solve the problem of costs rising due to population aging. In addition, the EU's studies showed that the effectiveness of a retirement age increase depends on whether or not governments are able to avoid an increase in the benefit level during the additional years of employment. If employees did not accrue any new pension entitlements, a five-year increase of the effective retirement age would be sufficient to cover the entire costs of demographic change in most of the EU member states (European Commission and European Council 2006, 55). This results almost equally from a reduction in the number of beneficiaries

and from an increase in revenues. Depending on the pension systems' design features, a five-year increase in the effective retirement age would reduce pension spending by between 3 and 5 percent of GDP in 2050 (European Commission and European Council 2006, 55), which is equal to the average projected expenditure increases in OECD countries (OECD 2001).

The United States, Germany, and the United Kingdom conducted detailed analyses of the effects of an increase of the statutory retirement age on pension finances. Since governments in all three countries wanted to avoid both benefit cuts and tax increases, they were particularly interested in the effects on contribution rates and spending levels. Their projections showed that an increase by two, three, or four years would significantly reduce the projected increase of the contribution rate or pension spending in percent of GDP. The U.S. General Accounting Office has estimated that, if approved by politicians, a gradual increase of the normal retirement age from 67 to 71 years, which would be completed by 2065, would reduce the projected increase of the contribution rate by about 1.4 percentage points and thus reduce the projected funding shortfall in the Social Security program by more than 70 percent (General Accounting Office 1999, 7). The German government has estimated that its gradual increase in the normal retirement age from 65 to 67 years between 2011 and 2029 will reduce the contribution rate by 0.6 or 0.7 percentage points in 2030 and by 1 percentage point in 2050 (Sachverständigenrat Wirtschaft 2006, 246). The UK government has projected that its gradual increase in the state pension age from 65 to 68 years will reduce state pension expenditures, which amounted to about 6 percent of GDP in 2006, by almost 1 percentage point of GDP by 2050 and thus partly offset the costs of legislated improvements of coverage and benefits (Department for Work and Pensions 2006b, 194).

Like in other OECD countries, in Canada a retirement-age increase would be exceptionally effective for improving the fiscal sustainability of public, earnings-related pension programs. Projections that the authors requested from the Chief Actuary of the Canada Pension Plan show that a gradual increase of the normal retirement age from 65 to 67 years (and of the earliest retirement age from 60 to 62 years) between 2012 and 2023 would reduce the CPP's minimum contribution rate, which was 9.82 percent in 2006, by almost 0.8 percentage points. The minimum contribution rate is the lowest rate that is sufficient for achieving the program's key goals—the payment of CPP benefits, the building and maintenance of a reserve equivalent to about 25 percent of plan liabilities, and the full funding of new or enhanced benefits—and that can be held constant in the very long term. The minimum contribution rate is a very important number: if it rises above the legislated rate of 9.9 percent, federal and provincial governments are forced to consider changes to the CPP. If they cannot reach an agreement on reforms, which requires the consent of the federal government and two thirds of the provinces representing at least two thirds of Canada's population, the following changes take effect automatically: the legislated contribution rate is increased and pension benefits, which are normally increased every year in line with changes in the consumer price index, are frozen for three years. If the minimum contribution rate is lowered from 9.82 to 9.06 percent, a retirement age increase from 65 to 67 years would create a significant buffer between the minimum and the legislated contribution rate. Thus, unfavourable demographic and economic developments— such as a higher than expected increase in life expectancy, a slower than expected growth of wages, and lower than expected investment returns—would have a much smaller impact on the sustainability of pension finances

and would reduce the likelihood that federal and provincial governments come under pressure to make difficult policy changes on short notice.

Since the QPP does not have a fail-safe mechanism that puts policymakers under pressure, a small increase of the lowest stable rate—which is called steady state rate in the case of the QPP—to a level above the legislated rate of 9.9 percent does not lead to immediate reforms. The Régie de rentes proposes reforms only if the steady-state rate exceeds the legislated rate by more than .3 percentage points in two consecutive actuarial reports (Régie des rentes du Québec 2007, 15). A difference of more than .3 percentage points means that the QPP's funding level would decline to less than 10 percent of plan liabilities, which is equivalent to about 2 years of expenditures (Régie des rentes du Québec 2008b, 15). In addition, since the full funding of new or enhanced QPP benefits is not a requirement, the QPP's steady-state rate is a less demanding indicator of fiscal sustainability than the CPP's minimum contribution rate. Since the steady-state rate exceeded the legislated rate by 0.4 and 0.64 percentage points in the 2003 and 2006 reports, the Régie de rentes has proposed two changes to the QPP that would restore fiscal sustainability: first, an increase of the legislated contribution rate by 0.5 percentage points and, second, a reduction of pension benefits for employees with less than 40 years of contributions, which would lower the steady state rate by about 0.3 percentage points. These changes would close the sustainability gap which, in 2008, was estimated at 0.8 percentage points (Régie des rentes du Québec 2008b, 21). An increase of the retirement age from 65 to 67 years would be an alternative solution, but it was not considered in the Régie des rentes' 2008 consultation paper. Even though we do not have detailed projections on the effect of an age increase on the QPP's long-term funding, we expect that it would allow policymakers both to maintain existing pension

benefits and to avoid a significant contribution-rate increase. An approximate evaluation by the Régie des rentes showed that a gradual increase of the normal retirement age from 65 to 67 years (and of the earliest retirement age from 60 to 62 years) between 2011 and 2022 would reduce the steady-state rate by about 0.5 percentage points (Personal Communication 2008).⁵ It would thus be a very effective measure for reducing the QPP's long-term funding gap, which amounted to 0.8 percentage points in 2008 and has likely increased since because of the negative impact of the financial crisis on the QPP's finances.

In order to assess the effectiveness of a retirement age increase in the CPP, we asked the Chief Actuary to estimate the impact of an increase of both the normal retirement age and the earliest retirement age by 2 years. Thus, the normal age would increase from 65 to 67 years and the earliest age from 60 to 62 years. In addition, we proposed that the age increase by 2 years would begin only in 2012 and occur gradually over a period of 12 years, i.e. by 2 months per year (see Table 1). Thus, employees who reach the age of 60 years in 2012 would be eligible to receive an actuarially reduced pension at age 60 years and 2 months and a full pension at 65 years and 2 months; those who reach age 60 in 2023 would be eligible to retire at 62 years with a reduced pension and at 67 years with an unreduced one. It should be noted that the four main variables and assumptions in this projection—(1) an age increase by 2 years, (2) an increase of both the normal and the earliest retirement ages, (3) the start of implementation in 2012, and (4) a gradual increase by 2 months per year—could be changed. For example, one could increase the

⁵ Most of the differences between the projected impact of raising the retirement age for the CPP and the QPP result from the following two differences: first, since pensioners who work are required to contribute to the QPP but not to the CPP, the revenue gain from a retirement age increase in the QPP is smaller than in the CPP; and second, unlike our projection for the CPP, the Régie des rentes' projection for the QPP assumed that the maximum age to which disability benefits are payable would not be gradually increased from 65 to 67 years (Personal Communication 2009).

normal retirement age without an increase of the earliest retirement age (Laurin 2009, 4-5) or consider an increase of the length of the contribution period for a full pension as a possible alternative to an increase of the normal and earliest retirement ages (Régie des rentes du Québec 2008b, 29-32). We chose these variables and values because they are similar to those proposed in the federal and provincial governments' 1996 *Information Paper for Consultations on the Canada Pension Plan* (Federal Provincial and Territorial Governments of Canada 1996, 35-36) and were used in one or more of the countries that successfully raised the retirement age.⁶ Specifically, the US and Germany raised the normal retirement age by 2 years; Germany raised the earliest retirement age when it increased the normal age and was able to limit the delay in the implementation of the age increase to a few years; and the US, Germany, and the UK raised the age gradually over a longer period of time.

Even though the retirement age increase would be implemented gradually over a relatively long period of time, its impact on the CPP's finances would be significant (see Table 2): the minimum contribution rate would be reduced from 9.82 to 9.06 percent; the difference between the minimum contribution rate and the actual contribution rate of 9.9 percent would increase from less than 0.1 percent to about 0.8 percent. Since a retirement age increase would create a cushion for the CPP, the existing contribution rate of 9.9 percent could likely remain unchanged even if demographic and economic conditions were more unfavourable than expected. Recent experience has shown that the CPP is very sensitive to changes in demographic and economic factors. In the 2006 report, the Chief Actuary had to revise its best-estimate

⁶ In the 1996 consultation paper, the federal and provincial governments considered an increase of the normal retirement age from 65 to 67 years and of the earliest retirement age from 60 to 62 years. They suggested a delay of between 5 and 10 years before making these changes and a transition period of either 6 or 8 years (i.e. an increase of 3 or 4 months per year).

assumptions regarding the life expectancy of males from 17.6 years to 19.3 years and of females from 21.6 years to 22 years (Office of the Chief Actuary 2007, 15), which increased the minimum contribution rate from 9.77 to 9.91 percent (Office of the Chief Actuary 2007, 40). Fortunately, this increase was counterbalanced by “[b]etter than anticipated economic experience, especially investment performance, labour force participation and employment data, over the period 2004 to 2006” (Office of the Chief Actuary 2007, 61). The minimum contribution rate thus remained below the legislated rate of 9.9 percent. If the growth in life expectancy had coincided with lower than expected economic conditions, the minimum contribution rate would likely have exceeded the legislated rate and thus have triggered either a new pension reform or automatic changes to both the benefit level and the contribution rate.

Since the difference between the minimum contribution rate and the legislated contribution rate is very small, unexpected changes in future demographic and economic conditions could create pressures for reforming the CPP. The 2006 actuarial report showed that under an older population scenario, which assumes a life expectancy at age 65 in 2050 of 23.9 years for males and 26.6 years for females (instead of 21.9 years for males and 24.2 years for females in the best-estimate scenario), the minimum contribution rate could increase to 10.7 percent (Office of the Chief Actuary 2007, 45). In addition, the report showed that a lower than expected growth of wages could increase the minimum contribution rate to 10.4 percent (Office of the Chief Actuary 2007, 45) and that even a temporary deviation from the expected investment returns could have a significant effect on the contribution rate: “[i]n the case of an equity return of -10 percent in 2009 and 2010, the minimum rate would increase above the legislated rate of 9.9 percent from 9.82 to 9.98 percent” (Office of the Chief Actuary 2007, 50).

A retirement age increase would not change the sensitivity of the CPP to unfavourable demographic and economic developments, but it would likely prevent an increase of the minimum contribution rate above the level of 9.9 percent.

Even though it is possible that future demographic and economic developments will be much worse than expected, it is more likely that they will be largely in line with the Chief Actuary's best estimate assumptions about population aging, retirement behavior, wage growth, investment return, etc. If the Chief Actuary's most likely scenario turned out to be correct, a retirement age increase from 65 to 67 years would either significantly improve the funding of the CPP, assuming that the contribution rate and the benefit level remained unchanged (see Table 2), or enable federal and provincial policymakers to increase benefits, lower the contribution rate, or both. If the contribution rate were kept at 9.9 percent and benefits were not increased, the CPP's assets in 2075 would be equivalent to 17 years of its program expenditures. This would make a significant difference: if the retirement age were kept at 65 years, the CPP's assets would be equivalent to only 6.5 years of expenditures. Put differently, the plan's funding would grow from about 30 percent to more than 75 percent of liabilities. Our projections show that the beneficial financial effects of a gradual retirement age increase would result from both lower expenditures and higher contribution revenues (see Table 2). For example, in 2050, CPP expenditures would be almost \$15 billion dollars, and revenues close to \$5 billion higher, than if the retirement age remained at 65. Program spending would decrease because on average retirees would receive their benefits for a relatively shorter period of time, and contribution revenue would increase because employees and employers on average would pay contributions for a relatively longer period of time.

In our projections, we assumed that employees would delay their retirement by 2 years and used the same assumptions regarding retirement rates that the Chief Actuary used in the 2006 actuarial report on the Canada Pension Plan (see Appendix). Specifically, we expected that about 40 percent of workers retire at the earliest retirement age, about 30 percent at the normal retirement age, about 20 percent between the earliest and normal retirement ages, and less than 5 percent after the normal retirement age. The assumption that a very high proportion of workers—about 40 percent—chooses to receive an actuarially reduced CPP benefit at the earliest possible age primarily reflects the role of private retirement income sources, especially occupational pensions, in employees' retirement decisions (Wannell 2007b, 2007a). The assumption that employees would change their behavior significantly and delay their retirement by 2 years allows us to estimate the potential size of the effect of a retirement age increase. If employees did not delay their retirement by as much as we assumed, the impact of an age increase on the minimum contribution rate and on the level of funding would be smaller than that shown in our estimates. In other words, the effectiveness of a retirement age increase from 65 to 67 years depends in part on a change in workers' retirement behavior. Even though an increase of eligibility ages would certainly lead to savings because employees would have to postpone their receipt of CPP benefits at least until age 62 and would receive reduced benefits if they retired before age 67, it would not force employees to wait until age 67. For example, a worker who had planned to retire at age 65 could still retire at that age if he or she accepted a permanent actuarial reduction of his or her pension by 12 percent. In this case, the retirement age increase from 65 to 67 years would reduce spending but would not increase contribution revenues. Even though we do not know how Canadians would respond to an increase of the retirement age, we know from past experience in Canada and other OECD countries that there are two ages at which a very large proportion of

employees retire: the earliest and the normal eligibility age (Gruber and Wise 1999, 2004; Wannell 2007a). These eligibility ages shape not only employees' incentives, but also their expectations regarding the conventional retirement age. The earliest and the normal retirement age are thus important focal points (Brown 2006; Hurnard 2005). In addition, we know from economic research that employees' retirement behavior can be significantly changed by an increase of the earliest and normal retirement ages (Gruber and Wise 2007; Baker et al. 2003). According to a recent study, an age increase from 65 to 68 years in Canada's retirement income system would have an important incentive effect on employees' retirement behaviour (Baker et al. 2007).

Does Raising the Retirement Age Improve Fairness across Generations?

The sustainability of pension programs in an aging population can be secured by either an increase of revenues or a reduction of expenditures. The CPP and the QPP, which are partially pre-funded programs, offer four different options for responding to the cost pressures generated by population aging: (1) a contribution rate increase, (2) a benefit cut, (3) a retirement age increase, (4) a reduction of reserves. A combination of two or more options is possible. These options have different effects on generational equity. If higher pension expenditures are covered by either a contribution rate increase or by a reduction of reserves, younger and future generations pay for most of the costs of population aging. If the growth of pension spending is reduced by a benefit cut, the costs of demographic change are mostly borne by older and retired generations. A retirement age increase distributes the costs of population aging more evenly

between the older, younger, and future generations. Since it reduces the number of years in retirement, pension expenditures are lower; and, since it increases the years in employment, contribution revenues are higher. Thus, a retirement increase leads to a more balanced distribution of the costs of population aging than either a contribution rate increase or a benefit cut do.

When policymakers make decisions about improving the sustainability of the CPP and QPP, they are faced with these distributional questions. First, who should pay for the fiscal consequences of lower fertility and longer life expectancy? Second, should younger and future generations bear the costs of population aging because they will likely be wealthier than older generations and thus be able to afford paying a higher proportion of their wages? Third, should older generations pay a large part of the additional costs because their longer life is one of the key reasons for growing pension expenditure? A distributional criterion that was developed by economist Richard Musgrave could serve as an attractive guideline for Canadian policymakers: the “fixed relative position” criterion (Musgrave 1986; Myles 2002; Schokkaert and Van Parijs 2003). In order to distribute the costs of population aging fairly across generations, policymakers need to decide whether the present distribution of financial resources between the working and the retired generations is fair. If they regard the existing level of benefits that pensioners receive as fair, they could follow Musgrave’s fixed relative position rule to ensure that the financial position of retirees relative to the working population remains the same in the face of cost pressures from demographic change. Pensioners may lose some of their benefits, but they would lose neither more nor less than younger generations. Musgrave argues that “[a] viable system calls for an intergeneration contract that provides for a fair sharing of the risks caused by

uncertain future changes in productivity and population growth” and offers the fixed relative position criterion as an equitable solution to this problem (Musgrave 1986, 116). Since Musgrave’s rule divides the costs of population aging fairly across generations, it can be seen as a just and acceptable compromise solution for aging societies. Its main alternatives, a shift of the entire costs either to the younger generations or to the older ones, would be less desirable and likely not acceptable to the generations that would have to bear the burden (Brown et al. 2001). A third alternative, the imposition of the costs of lower fertility, the key driver of population aging, on generations that produce a low number of children (Sinn 2000, 402-406, 2005, 34-37), would likely be even less acceptable than the other alternatives.

Musgrave’s rule advises policymakers to avoid one-sided measures that cause either the younger or the older generations to pay for the entire costs of population aging. This issue arises in pay-as-you-go pension systems, which are based on a contract between generations, but not in fully funded systems in which each generation finances its own retirement. Since the CPP and the QPP, which are only partially prefunded, rely primarily on pay-as-you-go financing, this issue applies to these programs also. Two pension reform approaches are not consistent with the fixed relative position criterion: (1) a pay-as-you-go pension system with a defined benefit level, a fixed retirement age, and a variable pension contribution rate that is increased whenever more revenues are needed; and (2), a pay-as-you-go pension system with a permanently fixed contribution rate, a flexible retirement age, and variable benefits that are reduced when a fiscal deficit occurs. The first approach is the classic social insurance approach found in many countries with a defined-benefit, pay-as-you-go pension system (OECD 2007, 21-30; Weaver 2004), and the second is the new notional defined contribution (NDC) approach taken by a

growing number of countries, such as Sweden, Italy, and Poland, that reformed their traditional defined-benefit systems in recent years (Holzmann and Palmer 2003). Musgrave calls these one-sided solutions the “fixed replacement rate” model and the “fixed contribution rate” model. Since they fix one of the key pension reform options, they are unable to maintain the relative position of workers and retirees over time. In the classic defined benefit approach, younger and future generations lose more than older ones, and in the new notional defined contribution approach, older generations lose more than younger and future ones.

Since Musgrave’s distributional rule permits a wide range of choices, its application is difficult. Even though it precludes a *permanent* lock-in of either the benefit level or the contribution rate, it does not rule out *temporary* goals or ceilings for the benefit level and the contribution rate. The decisions made in Canada in the 1990s are a good example: policymakers sought to keep the CPP and QPP contribution rates at below 10 percent of wages and to maintain them at that level for the foreseeable future (Little 2008, 187-189). But since both the CPP and QPP legislations allow the contribution rate to rise in case of unexpected funding shortfalls, the 10 percent level is only a temporary ceiling (Régie des rentes du Québec 2008b, 21-23). In addition, policymakers considered whether the level of benefits provided by the CPP—25 percent of wages—should be reduced. Even though they decided against a reduction of the replacement rate and thus reinforced the long-established level of 25 percent, the fact that this option was considered shows that the level of CPP benefits is not permanently locked in. Recent debates in Ontario and Québec on increasing the CPP and QPP’s replacement rate also show that the level of pension benefits is changeable (Régie des rentes du Québec 2008b, 49; Ontario Expert Commission on Pensions 2008, 187-188). The question of whether retirees should pay an

equal share of the costs of population aging cannot be answered once and for all because it depends on the degree to which the existing distribution of resources between retirees and the working population is considered fair (Brown et al. 2001). In practice, the fairness of the level of pension benefits relative to employees' wages is subject to reconsideration, and policymakers' decisions regarding a fair distribution of the costs of population aging cannot be separated from these periodic reviews. Thus, there is no simple formula for applying Musgrave's fixed relative position rule; several combinations of measures are compatible with it.

Policymakers who seek to apply Musgrave's distributional rule need to take both past changes and possible future changes into account. Specifically, they need to assess whether past changes either led to the desired distributional effects or need to be corrected, and whether changes that would either reinforce past decisions or correct unexpected distributional effects could be made in the future. Put differently, Musgrave's rule requires not only that policymakers utilise pension reform options flexibly at any given point in time, but also that they maintain a high degree of flexibility in the long run. The CPP and QPP reforms in the 1990s fulfilled this requirement. Even though the contribution rate increase from 5.5 to 9.9 percent, which mostly affected younger generations, was by far the most significant measure, it was complemented by small cuts of benefits which affected both retirees and older workers. In addition, a large part of revenues from the contribution rate increase was not used for financing the benefits of existing pensioners, but rather stored in a reserve fund for future use. This increase in the pre-funding of pension benefits benefited younger generations because it prevented a large and sudden increase of the pension contribution rate in the future. These measures partially differed from past changes, which had led to a decline of pre-funding and higher contribution rates, and preserved

flexibility for future corrections or reinforcing changes, such as a benefit cut, a contribution rate increase, a retirement age increase, and a reduction of reserves.

Which future CPP and QPP reforms would fulfill the requirements of the Musgrave rule? An answer to this question would require a decision on the fairness of the existing level of CPP and QPP benefits. Since the coverage, security, and adequacy of occupational pensions has declined in recent years, public pension benefits will likely need to play a more important role for future retirees than it will for current ones. Thus, in the next round of pension reform, a reduction of the benefit level would seem even less fair than it did in the 1990s. In fact, in 2009, the federal and provincial governments began to study options for increasing pension coverage and adequacy in Canada, including a new national plan that would supplement the CPP and QPP. In addition, the Ontario, British Columbia, and Alberta governments considered the creation of supplemental pension plans at the provincial level (Chase and Carmichael 2009; Chase 2009b). In the next round of reform, policymakers are thus likely to make a decision similar to that made in the last round of reforms: protect the CPP and QPP benefit level of 25 percent in order either to maintain or to increase the fairness of the existing distribution of financial resources between the retired and the working generation. The second decision policymakers would need to consider making is whether past reforms should be reinforced, maintained, or corrected: specifically, would an increase of the contribution rate from 9.9 percent to more than 10 percent be fair or would it need to be avoided? Or should the previous increase from 5.5 to 9.9 percent be partly reversed? Regardless, two issues are clear: first, a reduction of the contribution rate is politically very unlikely, even if it were to improve equity between generations; and second, policymakers are unlikely to support a significant increase of the contribution rate since, in the

mid-1990s, the level of 10 percent was seen as a threshold that should not be crossed (Little 2008, 185). Thus, a minor increase of the rate might be considered fair, especially if this largely ruled out additional future increases, but a large rate increase of one percentage point or more would be seen as giving rise to an unfair distribution of the costs of population aging across generations. Thus, even though a contribution rate increase could be a part of the solution in the next round of CPP and QPP reforms, it will likely need to be complemented by other measures. For example, the Régie de rentes has proposed that the funding gap of the QPP be filled both by an increase of the contribution rate by 0.5 percentage points and by a reduction of benefits, which would lead to savings of 0.3 percentage points (Régie des rentes du Québec 2008b, 21).

If policymakers rule out both benefit cuts and a significant contribution increase, they would likely consider the third option for improving the sustainability of pensions: an increase of the retirement age. They briefly considered this option in the mid-1990s, but did not use it (Little 2008, 108-110). A decision to raise the retirement age would meet the requirements of Musgrave's rule for two reasons: first, since it reduces the need to increase the contribution rate in future rounds of reform, it increases policymakers' flexibility both in the short term and in the long term, enabling them to distribute the costs of population aging more equitably—the smaller the contribution rate increase in the next round of reform, the greater the ability to increase the contribution rate in future rounds of reform; second, a retirement age increase is an ideal instrument for maintaining the relative position of workers and retirees because it combines features of a contribution increase and a benefit cut. For example, if the eligibility age of pensions is increased by one year, workers on average pay contributions for up to one additional year and retirees on average receive their pensions for one year less. Thus, both younger and

older generations pay a share of the costs of population aging. As Gøsta Esping-Andersen and John Myles pointed out, raising the retirement is thus “one logical ingredient in a Musgrave-inspired fixed relative position model” (Esping-Andersen and Myles 2006, 853).

A retirement age increase improves fairness across younger and older generations but could reduce equity within each generation of retirees (UK Pensions Commission 2005, 338-340). Since employees with low incomes have a shorter life expectancy than those with medium and high incomes, they are currently disadvantaged because they are eligible for retirement at the same age as the latter. When the retirement age is increased by the same number of years for all income groups, low income employees are even further disadvantaged. In Canada’s multi-pillar pension system, in which both public and private pensions play an important role, this concern is magnified. Most employees with medium or high incomes have occupational pensions, which allow retirement at a much earlier age than the CPP and the QPP eligibility age, often as early as 55 years (Wannell 2007b, 7). Many employees who have this option use it, especially if they have also built up significant personal pension savings. In 2000, about 40 percent of recent pensioners retired before the age of 60 (Kieran 2001, 6). Employees with low incomes do not have this option because they rely almost entirely on public pension programs. A possible outcome of a retirement age increase by two years is that low income employees work until age 67, but many medium and high income employees, especially in the public sector, continue to retire at age 55 (Kieran 2001, 6). Thus, a concern for maintaining equity within each generation of retirees would require policymakers to address these unintended and undesirable distributional consequences of a retirement-age increase. Two possible policy responses exist to address this: an increase in the earliest retirement age in occupational pension schemes and better public

pension benefits for employees with low incomes. In Germany, an increase of the earliest occupational pension age from 60 to 62 years was an important component of a comprehensive retirement-age reform. In the United Kingdom, the retirement age increase from 65 to 68 years was combined with a reduction of the number of qualifying years to receive a full pension—a policy which will especially benefit women—and a better indexation of the income-tested Pension Credit and the basic State Pension.

Would Citizens Support a Retirement-Age Increase?

Since citizens' preferences for early retirement are strong, a retirement age increase is an unpopular reform measure. As observers point out, "early retirement is an ideal to which most Canadians aspire" (Schellenberg 2004, 32). In the 2002 General Social Survey (GSS), older workers between ages 45 and 59 were asked at which age they would like to retire if they could choose (Schellenberg 2004, 30-31). Two thirds answered that that they would like to retire before age 60. The average age at which they would like to retire was only about 57 years, which is almost 5 years below the average actual retirement age in Canada. The findings from interviews with focus groups from across Canada were similar to those from the GSS: many participants regarded 'Freedom 55' as "both a personal and a cultural ideal" and "viewed the idea of working past 65, or even 60, as somewhat sad or tragic" (Policy Research Initiative 2004, 19). Could citizens' opinions regarding retirement be changed? Opinion polls from Canada and the EU suggest that public-opinion changes are possible.

If Canadians had to choose between a higher retirement age and a higher contribution rate, which option would they prefer? Even though there is good data on the Canadians' retirement preferences, little is known about their preferences for, and acceptance of, major pension reform options such as a contribution increase, benefit cuts, and a retirement age increase. Since citizens strongly prefer early retirement, it is likely that they would be opposed to the possibility of raising the retirement age. Asked by the Policy Research Initiative whether they would oppose or support raising the normal eligibility age of the CPP/QPP and the OAS from 65 to 67 years, more than two-thirds of focus group participants answered that they would be opposed, and only a fifth of respondents supported an increase of the retirement age by two years (Policy Research Initiative 2004, 43). This finding is similar to the results of a German survey which asked citizens whether they approved or disapproved of a gradual increase of the retirement age from 65 to 67 years: about 80 percent disapproved and only 20 percent approved. Most importantly, Germans' disapproval was largely independent of their party identification (Forschungsgruppe Wahlen 2006). The Policy Research Initiative's survey found that Canadians' opposition to increasing the contribution rate was almost as strong as their opposition to raising the retirement age. More than 60 percent of focus group participants objected to raising taxes to pay for social programs such as the CPP, and only about 20 percent supported this measure (Policy Research Initiative 2004, 44). However, we do not know whether representative surveys would lead to the same results and whether citizens would show less opposition to a retirement age increase if they had to make a difficult choice between a contribution increase, a benefit cut, and a retirement age increase.

Surveys that were conducted by the European Union in 2001 and 2004 provide very good insights into public sentiment regarding the options for pension reform and, specifically, regarding the option of increasing the normal retirement age (European Commission 2004, 2005). Since the differences in citizens' opinions throughout the EU member states were relatively small, the findings from the EU's surveys are likely relevant for Canada and for other countries. When asked whether they agreed or disagreed with the proposal to raise the age of retirement, more than two-thirds of European citizens disagreed and only a about a quarter of respondents agreed (see Table 3). This finding is almost identical to that from the Canadian focus groups. In the same survey, Europeans were asked whether "current pension levels should be maintained even if this means raising taxes or contributions?" More than two-thirds accepted higher taxes or contributions, and only a fifth disagreed with this proposal. In addition, EU citizens were asked whether "contribution rates should not be raised even if this meant lower benefits?" More than half of respondents disagreed with the proposal, and thus found contribution rate increases acceptable, and only a third was for stable contribution rates. These findings suggest that, if Canadians were confronted with a difficult choice between a contribution increase and a benefit cut, they might not object as much to a contribution rate increase as the Policy Research Initiative's focus group study found.

How would citizens choose if they had to find a solution for the financing problems of pension systems and if each option involved clear trade-offs? A 2004 survey conducted by the European Union shed light on this question. Citizens were presented with three options and could choose only one as the most acceptable solution. The first choice was to "work and contribute for longer" and implied that pension benefits and the contribution rate would stay the

same; the second was to “maintain the current retirement age and increase your social security contributions,” and the third to “maintain the current retirement age and accept that you will receive less.” Faced with these choices, about a third of respondents, which included both employed and non-employed (mostly retired persons), opted for higher contributions and stable benefits (see Table 4). Less than a fifth regarded a higher retirement age as the most acceptable option. The solution that was mentioned least often was lower benefits and a stable retirement age. About one third of respondents found either none of these options or only a combination of all three acceptable. The option of increasing social security contributions was the most acceptable one, and this supports the findings of the EU’s 2001 survey. However, the 2004 survey showed that citizens’ choices are not as clear-cut as one might expect: many respondents found it difficult to make a choice, a significant share of respondents saw a retirement age increase as the most acceptable solution, and only a small proportion of citizens accepted benefit cuts as a measure for maintaining the retirement age. These findings suggest that citizens may not be as strongly opposed to a retirement age increase as it is often believed if they understand the trade-offs well. In addition, the UK government experienced that the more citizens know about the reform options, the more they accept the proposal to raise the retirement age. Many of the more than 6,500 British citizens who participated in the National Pensions Debate of 2006 changed their opinion on the retirement age option after several hours of deliberation of the following reform options: benefit cuts, tax increases, higher employer contributions, higher personal savings, and longer work. At the beginning of the debate, only 42 percent of participants agreed with the statement that people will have to work longer to solve the problems of the pension system. But by the end, participants’ support for a higher retirement age had increased to 57 percent (Department for Work and Pensions 2006a, 24).

Survey results from the European Union and the United Kingdom provide key insights into the views of the public on the issues of intergenerational fairness and of equity within generations of retirees. The EU's surveys show that workers and pensioners have strikingly similar attitudes, which suggests that intergenerational fairness is not a major concern for most citizens. In the EU's 2001 survey, the percentages of workers and pensioners who approved or disapproved of pension reform options were almost identical (see Table 4). Workers showed almost as much support for a contribution rate increase as pensioners, even though this measure shifts the costs of population aging to workers. In addition, even though pensioners would not be affected by a retirement age increase, they were as much opposed to it as workers. The EU's 2004 survey, which presented difficult choices to respondents, confirmed that the opinions of employees and of the non-employed, most of whom are pensioners, are quite similar. A large percentage of both employed and non-employed persons found a contribution rate increase to be the most acceptable solution, and only a small share of both groups chose a retirement age increase as their most preferred option (see Table 5). A focus group study from the United Kingdom, which explored public opinion on the unequal effects of a retirement age increase on low-income and high-income employees, found that most participants were not concerned about this issue. Even low-income participants, who would be disadvantaged by a retirement age increase due to their shorter life expectancy, tended to show "acceptance of such inequalities as a fact of life" (Institute for Public Policy Research 2005, 50-51). Thus, citizens' opinions on pension reform options seemed to be rooted in a general preference for stable benefits and early retirement.

Could policymakers persuade Canadian citizens that increasing the retirement age is both an effective and a fair option for reforming the CPP? Recent findings from the General Social Survey (GSS) suggest that the retirement expectations of Canadian workers are changing and that later retirement is becoming more acceptable. Older workers, between ages 45 and 59, were asked the following question: “At what age do you plan to retire?” (Schellenberg and Ostrovsky 2008). The answers to this question are a good indicator of Canadians’ actual retirement behavior (Schellenberg 2004). A comparison of the results from 2002 with those from 2007 shows that fewer older workers plan to retire before age 60 and that more plan to postpone retirement until after age 60 or 65 (see Table 6). These changes in retirement plans are most pronounced among workers who are between 45 and 54 years old. The most visible change is that the share of older workers who plan to retire at 65 years or later has increased by 5 percentage points within the age group of 45 to 49 years. Even though these changes in retirement plans are relatively small, they show that, within only a few years, citizens’ opinions regarding the desirability of working longer can change. Citizens’ opinions regarding the possibility and desirability of working until 65 years or even 67 years are likely influenced by recent and expected changes in retirement and employment trends. It is possible that the opinion change between 2002 and 2007 was in part caused by the change in the participation rate of older workers between the ages of 55 and 64, which increased from 53 to 59 percent between the mid-1990s and 2007 (Marshall and Ferrao 2007, 5-11).

Since an increase of the retirement age from 65 to 67 years would lead to a change of employment and retirement trends, it is likely that it would also lead to a gradual acceptance of the measure. Even those who are not immediately persuaded by arguments for retiring later are

likely to accept a higher retirement age if the retirement behavior of their friends, family members, and colleagues is altered (Institute for Public Policy Research 2005, 11). As the Policy Research Initiative pointed out in its report, the plans of older workers seem “fluid and open to influence” (Policy Research Initiative 2004, 27). Citizens may not like a retirement age increase in pension plans, but are likely to accept it little by little after it has been adopted, especially if policymakers facilitate the transition to a higher retirement age. As noted earlier in the report, in the past several years, a variety of policy reforms have provided opportunities and incentives for later retirement. In addition, there are a number of measures that could make a retirement age increase more acceptable.

The experiences of Germany and the United Kingdom, which have raised the normal age to 67 and 68 years, show that policymakers are able to design and implement reforms that increase the acceptance of a retirement age increase. In both countries, the age increase had three clear goals: the preservation of the level of benefits, the limitation of tax increases, and the fair distribution of the costs of growing life expectancy across generations (Department for Work and Pensions 2006b; CDU/CSU and SPD 2006). British and German policymakers argued that public pension benefits were barely adequate and should thus not be reduced. In addition, they wanted to limit the size of tax increases that were necessary for maintaining adequate benefits in an aging population. The United Kingdom sought to keep spending on pensions at below 8 percent of GDP, and Germany decided to keep the pension contribution rate at below 22 percent of wages. The cost reductions resulting from the retirement age increase made the achievement of these tax and benefit goals possible. In addition, the age increase from 65 years to 67 and 68 years improved fairness among generations. The UK Pensions Commission argued that, in the

face of growing longevity, the normal retirement age “should rise in some way in proportion to life expectancy” (Hills 2006, 126). The German Social Security Commission proposed that the projected increase of life expectancy between 2000 and 2030—2.6 years for men and 3.1 years for women—should be partially compensated by a retirement age increase of 2 years (Bundesministerium für Gesundheit und Soziale Sicherung 2003, 82).

The most important policy measures that increased citizens’ acceptance of the retirement age change in Germany and the United Kingdom were a delay of the implementation and a long transition period: in order to give citizens time to adjust while still working, Germany decided to start the implementation of the age increase in 2011, four years after the adoption of the pension reform law; the United Kingdom will begin implementation only in 2024, almost two decades after the approval of legislation to raise the retirement age. In both countries, the transition period from age 65 to a higher age will be very gradual: in Germany, the 2-year increase of the retirement age will be completed in 2029 and thus take 18 years—the age will be increased by 1 month per year over the first 12 years and by 2 months per year over the last 6 years of the transition period (CDU/CSU and SPD 2006, 2); in the United Kingdom, the 3-year increase will be phased in gradually over a period of 22 years and will thus be fully implemented only in 2046—in each decade, an age increase of 1 year will be phased in over 2 consecutive years: from 65 to 66 years between 2024 and 2026, from 66 to 67 years between 2034 and 2036, and from 67 to 68 years between 2044 and 2046 (Department for Work and Pensions 2006b, 147). These choices were similar to those of the United States, which was the first OECD country that decided to raise the retirement age from 65 to 67 years: the implementation of this reform was delayed by almost 20 years, and the transition period was 24 years (Kollman 2002). Both in

Germany and in the United Kingdom, reform measures that could protect vulnerable employees played an important role in increasing citizens' support for a higher retirement age. British policymakers increased public-pension benefits and German ones set a new minimum benefit level and committed to avoiding nominal benefit cuts. In addition, in order to reduce the risk of unemployment, German policymakers created special active labour-market programs for older workers. Finally, both the United Kingdom and Germany maintained their disability pension programs in order to support older employees unable to work until the new retirement age.

Conclusion

This paper analyzed whether raising the retirement age from 65 to 67 years would strengthen fairness and funding in the Canada Pension Plan and whether citizens would find an age increase acceptable. We have found that a retirement age increase would significantly improve the fiscal sustainability of the CPP and largely solve the financing problems of the QPP. It is thus an extraordinarily effective measure for ensuring the financing of Canada's public pension insurance programs even in the face of unexpected economic and demographic developments. We have shown that raising the retirement age is a fair solution for financing the costs of population aging because it divides these costs across younger and older generations. In other words, it strengthens the intergenerational contract upon which the CPP and the QPP rest. We have suggested that citizens would accept a retirement age increase if they understood well the options for reforming pensions and the trade-offs they each presented, for example that maintaining a normal retirement age of 65 years may lead either to higher contributions or to

lower benefits, or both. In addition, we have suggested that citizens' retirement preferences are already shifting and will likely continue to do so if the earliest and normal eligibility ages of the CPP and QPP are changed. To conclude, raising the normal age from 65 to 67 years and the earliest age from 60 to 62 years is a financially effective, intergenerationally fair, and politically acceptable option for improving the CPP and for addressing the QPP's problems.

We hope that these findings will contribute to an emerging debate on reforms to Canada's income security programs, especially to the CPP and QPP, and encourage both policymakers and stakeholders to consider the option of raising the retirement age for public pensions. Since the 1990s, contribution increases and benefit reductions have been the most prominent options in debates on changing the CPP and QPP. In the late 1990s, the federal and provincial governments considered a retirement age increase from 65 to 67 years but decided against it. Since the late 1990s, the political, economic, and demographic context of pension policymaking in Canada has changed. Because of the CPP and QPP reforms of the 1990s, the contribution rate was increased to 9.9 percent in 2003. A stable contribution rate, partial plan funding, and—in the case of the CPP—full funding of new or expanded benefits became important goals of Canadian public pension insurance programs. Since the reforms of the last decade, life expectancy has increased much faster than expected and created significant financing problems for the QPP. The global financial crisis has led to a reduction of the CPP and QPP's assets, which further augments the QPP's problems and might create a financing problem for the CPP. In addition, the weakening of occupational pension plans has recently led federal and provincial policymakers and policy experts to consider the possibility of strengthening public pension provision (Chase and Carmichael 2009; Chase 2009a; Ambachtsheer 2008; Ontario Expert Commission on Pensions

2008). In light of these changes, we think that it would be useful to take a closer look at the option of increasing the retirement age in the CPP and QPP. If policymakers wish to maintain the contribution rate at under 10 percent, build a significant reserve fund, and either maintain or expand the level of CPP and QPP benefits, they likely need to consider an increase of the retirement age. Raising the retirement age may not only be necessary for achieving the CPP and QPP's key goals but may also be beneficial for maintaining fairness across generations: it would reduce the automatic expansion of the benefits of older generations that results from increases in life expectancy and thus limit the cost increases for the younger generations. Since a decision on a retirement age increase needs to be made many years before this measure is fully implemented, it would be best to analyze and discuss this option sooner rather than later. Sufficient time for a debate is also needed since a retirement age increase in the CPP and QPP would not be possible without a review of other components of Canada's retirement income system, especially the Old-Age Security program and occupational pension plans (Régie des rentes du Québec 2008b, 32). Lastly, the successful adoption and implementation of a retirement age increase depends on a political consensus among the federal and provincial governments and on the support from Canadian citizens. A broad consultation with stakeholders and citizens, similar to that conducted in the late 1990s, would thus be an essential part of a debate on future changes to the CPP and QPP. In our view, a serious and informed debate of retirement age in public pensions is in the best interest of Canadians.

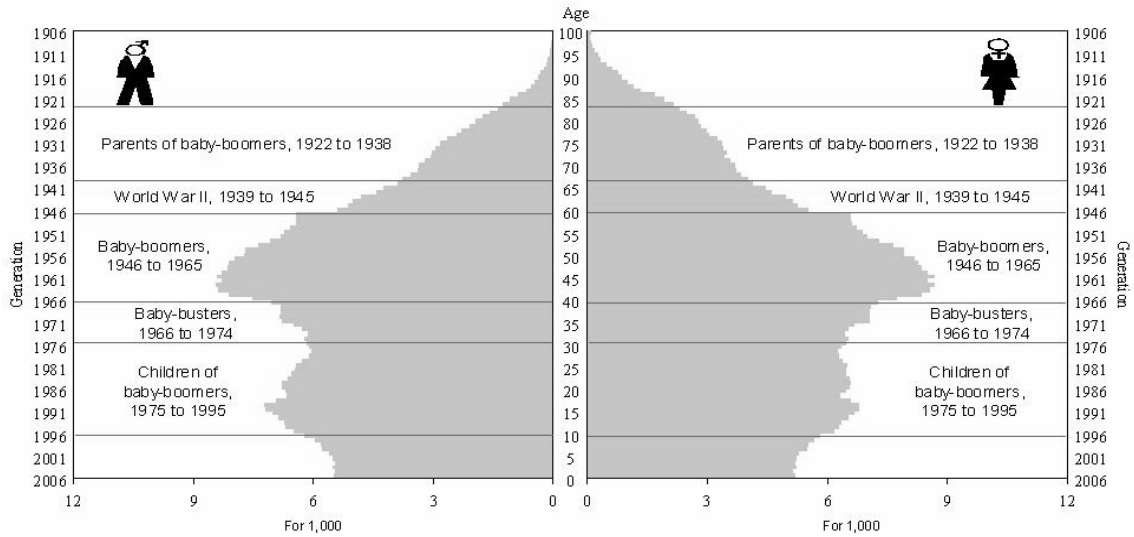
Appendix: Increasing the Normal and Earliest Retirement Age for the Canada Pension Plan—Assumptions

The cost estimate presented in this paper was calculated on the basis of the 23rd CPP Actuarial Report as at 31 December 2006 (Office of the Chief Actuary 2007). It should be noted that the technical term for the earliest retirement age in the CPP is the “minimum age of retirement benefit uptake.” It was assumed that the Canada Pension Plan would be modified as follows:

- For cohorts born in 1952 and thereafter, the normal retirement age (NRA) of 65 and the minimum age of retirement benefit uptake (MABU) of 60 are assumed to increase gradually by 2 months for each successive cohort and are set to reach 67 and 62 respectively for cohorts born in 1963 and thereafter.
- For cohorts born in 1952 and thereafter, the maximum age of 65 to which disability benefit are payable is assumed to increase gradually by 2 months for each successive cohort and is set to reach 67 for cohorts born in 1963 and thereafter. For this purpose, disability incidence and termination rates are accordingly extended (based on the trends observed in these rates between the ages of 60 and 64) to cover the gradual change in the NRA for cohorts born after 1952. The automatic conversion from disability to retirement benefit is also adjusted to occur at the NRA of the given cohort.
- The current survivor benefit structure is also gradually adjusted to the change in the NRA for each successive cohort born on or after 1952. For example, for cohorts born in 1963 and thereafter, the survivor benefit under the NRA of 67 will consist of a flat-rate component and of a 37.5 percent earnings-related portion, while survivor benefits over the NRA of 67 will consist of a 60 percent earnings-related portion.
- For each cohort, the actuarial adjustment factor is assumed to remain the same, i.e., a reduction of 0.5 percent per month before the NRA and an increase of 0.5 percent per month after the NRA of the given cohort.
- Retirement benefit uptake rates for ages 60 to 70 for each successive cohort born in 1952 and thereafter are gradually shifted to account for the change in the NRA and MABU of the given cohort. As a result, the current assumed benefit uptake rates for ages 60 to 70 are set to become applicable at ages 62 to 70 for cohorts born in 1963 and thereafter. It is thus implicitly assumed that everyone in the affected cohorts delays its benefit uptake by the same number of months (years) that their NRA is assumed to increase. Table 7 illustrates the change in benefit uptake rates by cohort.
- The proportion of contributors for each cohort born in 1952 and thereafter has been adjusted to reflect the gradual change in their respective NRA and MABU. The work pattern before the current MABU of 60 is thus extended to the new MABU of the given cohort.

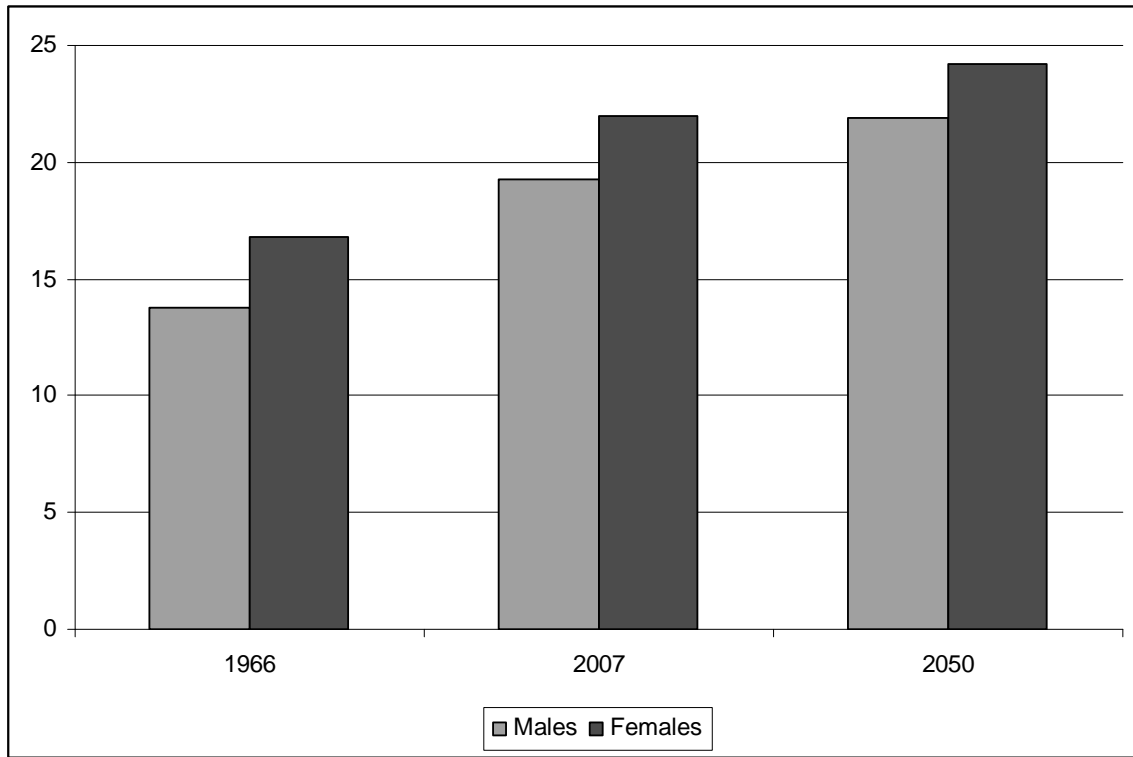
Figures and Tables

Figure 1: The Age Pyramid of the Canadian Population, 2006



Source: Statistics Canada, Census of Population, 2006.

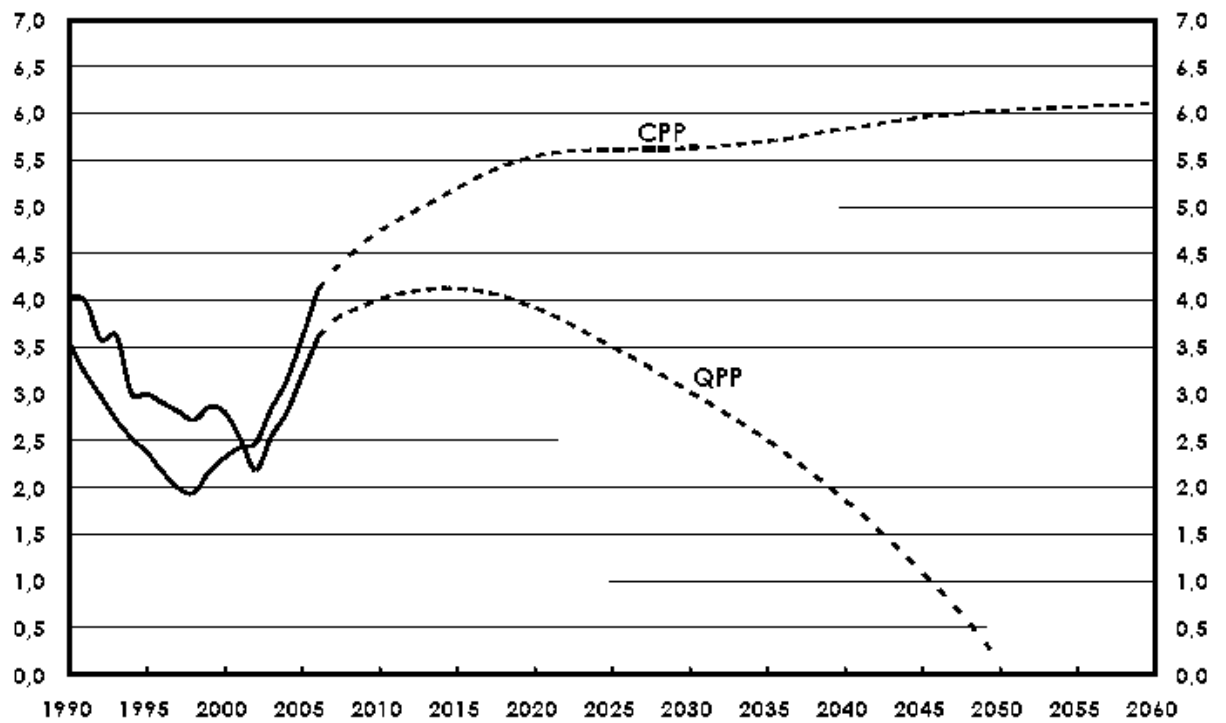
Figure 2
Trend in Life Expectancy at Age 65 in Canada



Source: Office of the Chief Actuary. 23rd Actuarial Report on the Canada Pension Plan (Ottawa: Office of the Superintendent of Financial Institutions, 2007), chart 9, p. 86, and table 41, p. 87.

Figure 3

Projection of the Ratio of the CPP and QPP Reserves to Annual Expenditures, 2007-2060



Source: Régies des rentes du Québec. Towards a Stronger and Fairer Québec Pension Plan (Québec City: Ministry of Employment and Social Solidarity), chart 3, p. 18.

Figure 4
Median Retirement Age in Canada, 1976-2008



Source: Statistics Canada, Labour Force Survey (CANSIM Series V2342629).

Table 1: Transition Period for the Proposed Increase of the Retirement Age in the Canada Pension Plan

	Normal Retirement Age	Earliest Retirement Age
2012 (born 1952)	65 and 2 months	60 and 2 months
2013 (born 1953)	65 and 4 months	60 and 4 months
2014 (born 1954)	65 and 6 months	60 and 6 months
2015 (born 1955)	65 and 8 months	60 and 8 months
2016 (born 1956)	65 and 10 months	60 and 10 months
2017 (born 1957)	66 and 0 months	61 and 0 months
2018 (born 1958)	66 and 2 months	61 and 2 months
2019 (born 1959)	66 and 4 months	61 and 4 months
2020 (born 1960)	66 and 6 months	61 and 6 months
2021 (born 1961)	66 and 8 months	61 and 8 months
2022 (born 1962)	66 and 10 months	61 and 10 months
2023 (born 1963+)	67 and 0 months	62 and 0 months

Table 2: Financial Impact of a Gradual Increase of the Normal and Earliest Retirement Ages in the Canada Pension Plan (using 9.9% Contribution Rate)

Year	Change Relative to 23 rd Actuarial Report Projections				Asset/Expenditure Ratio	
	Contributions	Expenditures	Net Cash Flow	Assets	23 rd Report with Proposed Modifications	23 rd Report Status-Quo
	(in millions of dollars)					
2012	4	-71	75	76	4.96	4.93
2015	155	-603	758	1,738	5.34	5.20
2020	700	-2,719	3,419	14,774	6.13	5.54
2025	1,548	-5,523	7,071	53,215	6.81	5.61
2030	2,045	-7,356	9,401	125,273	7.43	5.63
2040	2,923	-9,865	12,788	392,860	8.98	5.83
2050	4,785	-14,701	19,486	981,668	10.86	6.03
2075	12,521	-28,758	41,279	6,592,559	16.99	6.39
Minimum Contribution Rate (2010+)					9.06%	9.82%
Asset/Expenditure Ratio for 2019 and 2069 under Minimum Rate					5.0	5.4

Source: Office of the Chief Actuary. Run number CPP23-R62B.

Table 3: Citizens' Opinions on Pension Reform Proposals in the European Union (in Percent), 2001

	Agree	Disagree
Increase contributions	69	20
Cut benefits	31	53
Raise retirement age	23	69

Source: European Commission, Special Eurobarometer 161/ Wave 56.1.

Table 4: Citizens' Choices of the Most Acceptable Solution to Pension Financing in the European Union (in Percent), 2004

	Employed	Non-Employed
Increase contributions	34	29
Work longer	17	19
Cut benefits	13	12

Source: European Commission, Special Eurobarometer 215/ Wave 62.1.

Table 5: Citizens' Opinions on Pension Reform Proposals in the European Union (in Percent, Non-Pensioners vs. Pensioners), 2001

	Agree		Disagree		Don't Know	
	Non-Pensioners	Pensioners	Non-Pensioners	Pensioners	Non-Pensioners	Pensioners
Increase contributions	66	76	22	14	12	9
Cut benefits	32	27	52	57	16	17
Raise retirement age	23	22	69	69	8	9

Source: European Commission, Special Eurobarometer 161/ Wave 56.1.

Table 6: Planned Age of Retirement of Workers of Different Age Groups in 2002 and 2007 (in Percent)

Age Group	Planned Age	2002	2007	Change
45-49 Years	Before 60	32.2	29.8	-2.4
	60 to 64	19.5	21.9	2.4
	65 or after	22.4	27.4	5
	Don't intend/ Don't know	26.0	20.9	-5.1
50-54 Years	Before 60	26.5	25.2	-1.3
	60 to 64	22.6	27.0	4.4
	65 or after	23.6	25.4	1.8
	Don't intend/ Don't know	27.3	22.4	-4.9
55-59 Years	Before 60	9.4	9.4	0
	60 to 64	32.9	33.4	0.5
	65 or after	30.3	30.9	0.6
	Don't intend/ Don't know	27.3	26.3	-1.0

Note: for full-year workers only.

Source: Statistics Canada, 2007 General Social Survey Report: The Retirement Plans and Expectations of Older Workers.

Table 7: Assumed Retirement Benefit Uptake Rates (in Percent)

Age	Cohort 1951		Cohort 1955		Cohort 1959		Cohort 1963+	
	Males	Females	Males	Females	Males	Females	Males	Females
60	40.00	45.00	13.33	15.00	-	-	-	-
61	6.00	6.50	28.67	32.17	26.67	30.00	-	-
62	5.50	5.50	5.83	6.17	17.33	19.33	40.00	45.00
63	4.50	4.50	5.17	5.17	5.67	5.83	6.00	6.50
64	4.50	5.00	4.50	4.67	4.83	4.83	5.50	5.50
65	36.00	30.40	15.00	13.47	4.50	4.83	4.50	4.50
66	1.00	0.70	24.33	20.50	25.50	21.93	4.50	5.00
67	0.60	0.40	0.87	0.60	12.67	10.60	36.00	30.40
68	0.50	0.40	0.57	0.40	0.73	0.50	1.00	0.70
69	0.40	0.40	0.47	0.40	0.53	0.40	0.60	0.40
70	1.00	1.20	1.27	1.47	1.57	1.73	1.90	2.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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