Social Security Retirement Policy in Canada and the United States: Different Reforms, Different Outcomes

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Pendant de nombreuses années, le paiement des rentes de retraite de la sécurité sociale a été soumis à des conditions similaires au Canada et aux États-Unis. Cependant, au cours des 20 dernières années, les programmes de sécurité sociale des deux pays ont pris des orientations différentes en ce qui concerne l'âge de la retraite et les conditions d'admissibilité à la rente. Les politiques divergentes des deux pays ont donné lieu à des résultats différents quant à l'âge auquel il est possible de se prévaloir des prestations de sécurité sociale, l'âge auquel les travailleurs quittent leur emploi et l'importance du travail à temps partiel chez les personnes âgées. Les auteurs passent en revue l'évolution des politiques de même que l'expérience des deux pays. Avant de conclure, ils se penchent dans le dernier volet de leur étude sur d'autres facteurs (éducation, chômage et régimes de retraite privés) susceptibles d'expliquer aussi les différences de comportements.

Mots clés : âge de la retraite, comportement en matière de retraite, politiques liées à la retraite, réforme des régimes de retraite, sécurité sociale

For many years, social security retirement pensions were subject to similar entitlement conditions in Canada and the United States. However, over the past 20 years, Canadian and US social security policy has diverged on the conditions to become entitled to a retirement pension, including the full retirement age. These divergent policies have been associated with different outcomes with respect to the age at which social security benefits are claimed, the age at which workers leave employment, and the extent of part-time work at older ages. Policy reforms and experience in the two countries are reviewed. Before concluding, we examine other factors (education, unemployment, and private pensions) that could also explain behavioral differences.

Keywords: Social Security, pension reform, retirement policy, retirement behaviour, retirement age

Promoting active aging has been on the agenda for some time in many countries, considering that "giving people better choices and incentives to continue working at an older age is crucial for responding to the challenges of rapid population ageing" (OECD n.d.). More specifically, the European Union has promoted active aging, and the OECD has encouraged governments to introduce policies designed to extend working life as a response to increased life expectancy and increased pension costs (Leime 2019).

To study effects of government policies, such as to promote active aging, cross-national longitudinal comparisons of social security for similar countries can provide a greater degree of policy variation than is observed in a single country over time or between two countries at a point in time. The longitudinal aspect allows for the examination of the effects of policies that have changed over time. Although various factors may affect the labor market outcomes of two countries, a longitudinal comparison allows us to focus on the effects of policies that have changed over time.

Canada and the United States have similar multitier retirement systems. Both countries have earnings-related defined-benefit public (social security) pensions: the Old-Age, Survivors, and Disability Insurance (OASDI)

doi:10.3138/cpp.2019-029

program in the United States and the Canada Pension Plan and Quebec Pension Plan (CPP–QPP) in Canada.[1] In Canada, there is also the Old Age Security program, a base pension available to most Canadians, and the Guaranteed Income Supplement, whereas in the United States Supplemental Security Income provides minimal benefits to Americans with limited resources. For many years, the replacement rates of social security retirement pensions in Canada and the United States were comparable,[2] as well as the entitlement conditions of OASDI and CPP–QPP. More recently, the two countries have introduced diverging policies regarding entitlement conditions and level of benefits.

The United States has maintained its earnings test for workers to become entitled to a social security pension before the normal (or full) retirement age and reduced the benefit payable by gradually increasing the normal retirement age.[3] Canada has maintained the normal retirement age, and the restrictions prohibiting workers from receiving their pension while working have been dropped. Canada has not cut back on social security pensions; in fact, under current legislation, it will increase the level of social security pensions in the future.[4]

After a review of the major provisions of social security retirement pensions in the two countries, and the amendments introduced over the past two decades, we examine the evolution of the effective claiming age for social security pensions. We also compare employment of older workers and effective retirement age from the labor market to see whether changes to social security and the differences in benefit claiming age are associated with different labor market trends. As shown, the experience in the two countries has become increasingly divergent since divergent changes to social security policy. In this study, we refer to the most recent 20 years of experience, from 1998 to 2017, a period that follows the trend toward early retirement of the late 1980s and early 1990s.[5]

The objective is to see whether differences in behaviour have occurred in the two countries since the changes were introduced. We show that the different social security policies have been associated with different outcomes with respect to the age at which social security benefits are claimed, the age at which workers leave employment, and the extent of part-time work at older ages.

Demographic Differences between Canada and the United States

The old-age dependency ratio is the ratio of people aged 65 years and older to people of working age.[6] It is a key demographic parameter affecting social security programs, especially if they are financed on a pay-as-you-go basis. Turner (1984) shows that the old-age dependency ratio acts as a shadow price for social security benefits. For example, when the old-age dependency ratio is 0.2, it costs each worker \$0.2 to raise benefits for retirees by \$1.0. According to the World Bank (2019), in 2017 the old-age dependency ratio was 0.25 for Canada and 0.23 for the United States, so the ratio was virtually the same in both countries and would thus not justify differences between the two countries regarding their social security benefits.[7]

Entitlement Conditions to Social Security Retirement Pensions

For many years, the two countries had a full pension retirement age of 65 years, subject to an earnings test to allow the pension to be put in payment. In the United States, the pension was reduced once in payment when the beneficiaries had earnings above a certain level. This earnings test was stricter before full retirement age than at older ages.[8] Both countries allow for early and late retirement subject to actuarial adjustment factors.

More recently, the United States and Canada opted for diverging reform options. Characterizing reforms that maintain restrictive entitlement conditions and cutback on benefits as conservative and reforms that raise benefits and reduce conditions for receiving them as liberal, the US reforms can be characterized as conservative and the Canadian reforms can be characterized as liberal:

- *US conservative reforms:* Pensions to be paid to retirees are reduced because of the gradual increase to 67 years of the full retirement age while maintaining the minimum age for early retirement of 62 and the maximum age for increases in benefits for late retirement of 70. The income ceiling at time of retirement and the earnings test once retired are maintained up to the full retirement age.
- *Canada liberal reforms:* Full retirement age remains 65 years, and pensions are not reduced. All earnings restrictions have been dropped, making it possible to draw a pension while working.[9] Future social security benefits will be increased.

Canada made such changes in the context of the late 1990s, when many people were claiming their social security pension at age 60 years, well before the full retirement age of 65 years, and when partial retirement was seen as a valuable option to allow people to stay in the labor market longer. Having no income ceiling and earnings test for receipt of social security benefits would allow older workers to combine earnings and a pension in a way that would suit both their needs and the growing demand for labor by employers. During the same period, it was decided to increase contribution rates of the public earnings-related pensions significantly rather than to reduce benefits.

The situation was different in the United States at the beginning of the 1980s, when it was decided to increase the full retirement age. It was then necessary to either increase contribution rates or reduce pension benefits to maintain the financial equilibrium of the Social Security trust fund. Moreover, in those years partial retirement was not on the agenda, and it was still considered usual behaviour to stop working to draw a pension.

Canadian social security pensions may also be seen as more liberal, paying a CPP–QPP pension as early as age 60 years, whereas the minimum entitlement age is 62 years in the United States. In both countries, late retirement with a benefit increase for postponing retirement is possible up to age 70 years. Finally, after the reforms mentioned earlier, actuarial adjustment factors in case of early or late retirement were changed in Canada to make them more neutral. They were increased in both situations, reducing the pension further in case of early retirement and increasing it further for late retirement.

Effective Entitlement Age for Social Security Pensions

At the turn of the century (between 1998 and 2002), the average claiming age was lower in Canada by 1 year on average compared with the United States. In 2002, it was 62.3 years in Canada and 63.2 years in the United States. The difference seems to be linked to the provision allowing for early retirement as early as age 60 years in Canada compared with 62 years in the United States: the average claiming age of the two countries would be very similar if one considers the counterfactual of a minimum retirement age of 62 years in Canada, assuming that people who used to retire earlier would have waited until age 62 years to claim their social security pension. Details are shown in Figure 1.

In the United States, OASDI full retirement age started to increase in 2003: from age 65 years in 2002 to 66 years in 2009. It will remain at 66 until 2020, starting to increase again in 2021, two months per year, to reach age 67 years in 2027 (United States n.d.; see Figure 1). The average claiming age of new beneficiaries increased steadily from 63.2 in 2002 to 64.6 in 2017. In other words, claiming age went up along with the full retirement age. In 2016, individuals on average claimed 1.6 years before the full retirement age (66 years vs. 64.4 years), which is close to the situation in 2002, when the gap was at 1.8 years (65 years vs. 63.2 years). When looking at the experience on an annual basis, the gap between full retirement age and effective entitlement age increased between 2003 and 2009 when OASDI full retirement age was increasing from age 65 years to 66 years: in those years, the mean retirement age has increased by about half as much as the increase in the full retirement age (Mastrobuoni 2009, 1224). Nonetheless, effective entitlement age continued to increase in the

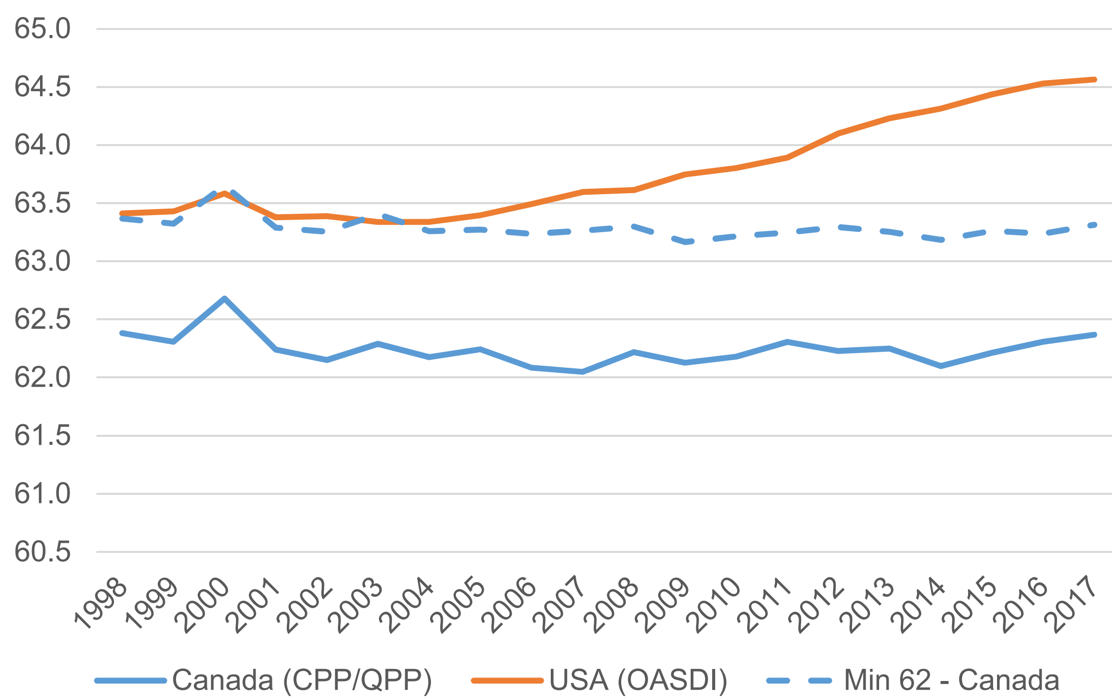

Figure 1: Average Effective Entitlement Age for Social Security Pensions (1998–2017)

Note: Min 62 – Canada refers to the counterfactual situation in which no one in Canada retired before age 62 years, which is the earliest age for receipt of Social Security benefits in the United States. CPP/QPP = Canada Pension Plan–Quebec Pension Plan; OASDI = Old-Age, Survivors, and Disability Insurance.

Source: United States (n.d.), Canada (n.d.), Retraite Québec (2018), and data obtained from Retraite Québec.

doi:10.3138/cpp.2019-029

Table 1: Percentage of New Beneficiaries Claiming at Age 65 Years and Older

	%	
Country	1998	2017
Canada	25	28
United States	21	46

Note: Excluding disability conversions at age 65 years.

Sources: United States (n.d.), Canada (n.d.), Retraite Québec (2018), and data from Service Canada.

following years, whereas the OASDI full retirement age remained unchanged at 66.

By comparison, the situation is different in Canada. The full retirement age remained unchanged at 65 years, and the benefit claiming age remained fairly stable, rather than rising, as it did in the United States. It was 62.4 years in 2017 versus 62.2 years in 2002. Workers claimed their social security pension 2.6 years before the full retirement age in 2017, compared with 2.8 years in 2002.[10]

The difference between the two countries regarding the evolution of effective entitlement age—stability in Canada and increase in the United States—can also be highlighted by looking at the proportion of new beneficiaries claiming their pension at age 65 years and older. As shown in Table 1, the proportion was rather stable in Canada: 25 percent for 1998 and 28 percent for 2017. In the United States, it used to be lower than Canada at 21 percent in 1998, but it more than doubled to 46 percent in 2017.[11]

As shown in the first section of this article, Canada opted for more liberal amendments to the entitlement conditions of social security pensions. It could be argued that the stability in average entitlement age has to do with the new provisions that allow for the payment of social security pensions with no retirement conditions and earnings test. It may be attractive to claim the social security pension while working even if the pension is subject to an actuarial adjustment factor that reduces the amount paid in case of early retirement. Nonetheless, it could be seen as a reasonable option if people work longer and late career work is part time. We study this in more detail in the following sections.

Effective Retirement Age from the Labor Market

It used to be assumed that people would claim their social security pension when they stopped working to maintain their income. It was also assumed that retirement would happen on a single day, switching from full-time work to full-time retirement. Social security provisions were built on such premises, setting a cap on earnings at the time of retirement and reducing the pension in payment when pensioners went back to work.

In this section, we look at effective retirement age from the labor market and employment and how it compares to the effective entitlement age for social security. In the next section, we look at statistics regarding full-time and part-time work in late career.

Average retirement age from the labor market increased in both Canada and the United States between 1998 and 2017 to reach 64.7 in Canada and 66.8 in the United States (OECD n.d.). The increase was larger in Canada (3.5 years vs. 2.4 years), the gap between the two countries being reduced from 3.2 years in 1998 to 2.1 years in 2017.[12]

Figure 2 shows more details and highlights the differences between estimates of retirement age from the labor market and the age at which workers claimed their social security benefits. In both countries, average retirement age from the labor market currently exceeds the age at which they claimed their social security benefits by more than 2 years. On average, workers stay at work or return to the labor market after they start drawing their social security pension, and this phenomenon has become more important over time.

In 1998, there was a gap of 1.0 year (63.4 years vs. 64.4 years) in the United States, but it reached 2.4 years (64.4 years vs. 66.8 years) in 2017. In Canada, claiming age for social security was 1.2 year higher (62.4 years vs. 61.2 years) than retirement age from the labor market in 1998. In other words, on average individuals claimed their social security pension once retired from employment. In 2017, retirement age from the labor market had increased to 64.7 years and claiming age for social security remained unchanged at 62.4, for a difference of 2.3 years.

We estimate effective retirement age from the labor market on an aggregate basis, based on the reduction of successive five-year age groups activity rates over five-year periods. In addition to people working on a regular basis, activity rates consider as economically active and not retired a person who is not employed but looking for work or a person only working a few hours per week (OECDiLibrary 2017). A study conducted on OECD countries for 2005–2015 provides complementary estimates of retirement age based on effective employment of older workers. (Latulippe and Fontaine 2019). Those not employed are considered as having retired. Estimates of retirement age from full-time employment were also estimated, with full-time employment requiring a minimum of 30 hours of work per week (OECDiLibrary 2017).

This study shows that retirement from employment is more sensitive to the unemployment rate than retirement from the labor market. People tend to leave employment earlier when unemployment goes up and vice versa. Nonetheless, the two estimates of retirement age are

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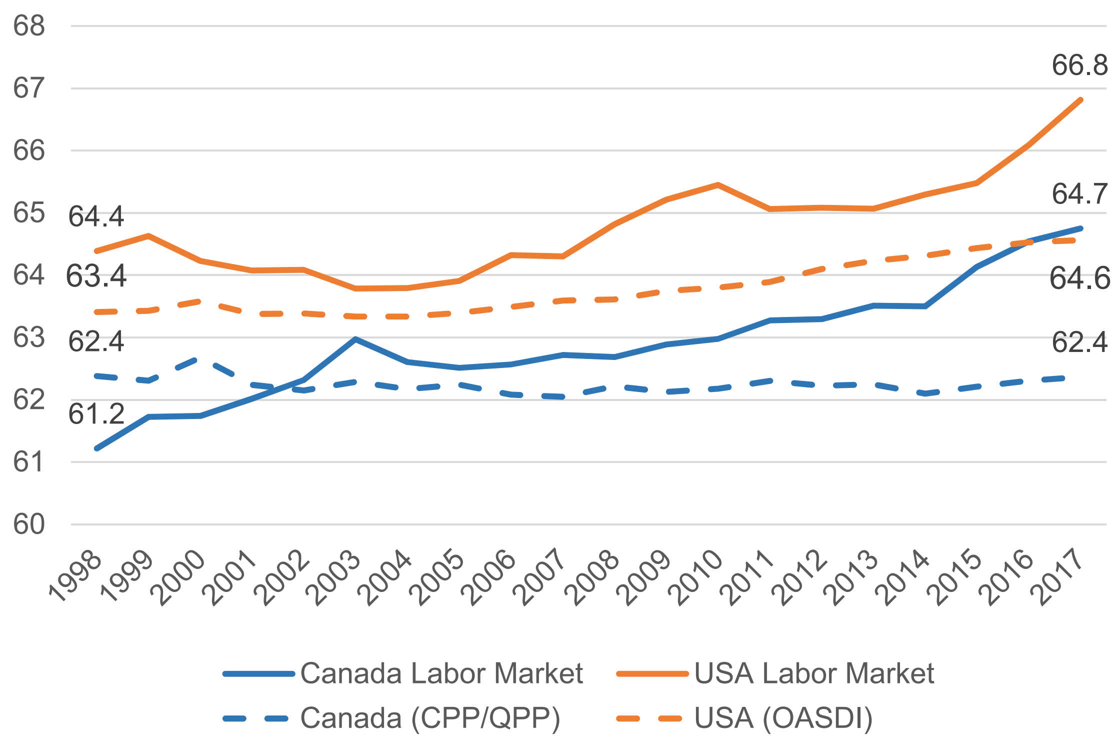

Figure 2: Effective Retirement Age from the Labor Market and Average Claiming Age for Social Security Pensions (1998–2017)

Note: CPP/QPP = Canada Pension Plan–Quebec Pension Plan.

Sources: United States (n.d.), Canada (n.d.), Retraite Québec (2018), and OECD (n.d.).

similar when smoothing for economic cycles and referring to average figures over several years. In both countries, retirement age from employment was higher than average claiming age for social security.

We also show that in Canada retirement age from full-time employment was lower or close to the average claiming age for social security from 2005 to 2013.[13] Only in the most recent years (2014 and 2015) did retirement from full-time employment become higher. Details are shown in Figure 3. In this regard, it is important to consider that Canadian workers have been able to claim their social security pension with no restrictions on earnings since 2012 for the Canada Pension Plan and 2014 for the Quebec Pension Plan. These changes could help explain the increase in retirement age from full-time employment despite the stability of claiming age for social security benefits. Before these changes, the requirement was not to be earning at the time of pension commencement. Individuals could start to receive their retirement pension and return to work in the following months.

Part-Time Work

In both countries, part-time work accounted for about 20 percent of total employment growth between 1998 and 2017. Although the experience is similar in aggregate for the two countries, country differences have occurred for the various age groups.

Table 2: Part-Time Employment as a Percentage of Total Employment Growth (1998–2017)

	%			
Country	Total	25–54 Years	55–64 Years	≥65 Years
Canada	20	4	16	43
United States	19	14	13	29

Source: OECD.Stat (2019a).

The percentage of part-time work for the age group 65 years and older is especially important for Canada, where part-time work represents 43 percent of total employment growth, compared with 29 percent for that age group in the United States. However, for people aged 25–54 years, part-time work represents a larger share of employment growth at 14 percent of total for the United States and 4 percent of total for Canada. Details are shown in Table 2.

Growth rates of full-time employment among those ages 65 years and older were similar in the two countries: 6.9 percent for Canada and 6.5 percent in the United States on average per year. However, there is a clear distinction when looking at growth of part-time employment: in Canada, for people aged 65 years and older, it grew at an average annual rate of 7.3 percent compared with 3.1 percent for the United States.

doi:10.3138/cpp.2019-029

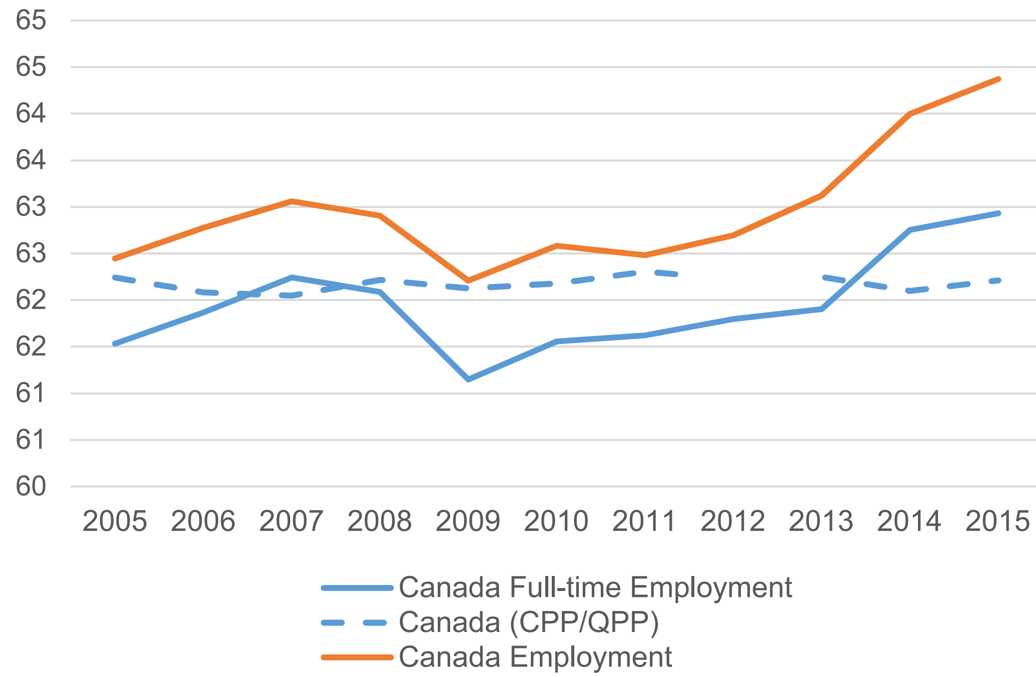

Figure 3: Effective Retirement Age from Employment and Full-Time Employment and Effective Entitlement Age for Social Security Pensions (Canada, 1998–2017)

Note: CPP/QPP = Canada Pension Plan–Quebec Pension Plan.

Sources: Latulippe (2019), OECD Labour Force Statistics, and authors' calculations

Other Factors to Consider

The information presented so far leads us to conclude that diverging amendments to US and Canadian social security programs have resulted in different outcomes regarding the age at which retirement benefits are claimed, as well as for part-time work among older workers and effective retirement age from the labor market. However, other factors such as unemployment, educational attainment, or private pensions coverage may also explain such differences in behaviour. Our objective in this final section is to examine whether these other factors can explain differences in retirement behaviour.

On one hand, people with higher education could retire later because they started working later, find their job more rewarding, or can more easily stay in the labor force because of expertise, job requirements, and good health. On the other hand, they could retire earlier because of higher income and wealth. Although there is not necessarily strong evidence of the impact of higher education on retirement, skilled workers are often considered to have more possibility of maintaining some form of employment once retired from their main occupation.

Data on the educational attainment of older workers are shown in Figure 4 for 1998–2017. The data refer to the proportion of the population aged 55–64 years with tertiary education, which includes both theoretical programs leading to advanced research or high-skill professions such as medicine and more vocational programs leading to the labor market (OECDiLibrary 2019). Over this 20-year period, there is an increasing trend in tertiary education in the two countries and a strong correlation between them, with Canada showing a higher level in most recent years. In fact, differences cancel out over time up to 2009. In 2017, the proportion of the populations age 55–64 years with tertiary education was 46.5 percent in Canada and 42 percent in the United States. This more important increase in Canada in recent years could provide an explanation for the growing popularity of part-time work coupled with later retirement from the labor market in Canada, assuming this option is more popular for skilled workers. Statistically, the correlation between claiming age and tertiary education is negative in Canada (−0.4) and positive in the United States (0.7).

Unemployment rates for the 55–64-year age group are shown in Figure 5. Unemployment among older workers is generally lower in the United States than in Canada, but the difference between the two countries decreased between 1998 and 2010 and increased in the following years; only in 2014 did the difference return to the level registered in 2003.[14] However, as mentioned earlier, the difference in claiming age between the two countries has increased steadily since 2003. There is no clear link between how the differences in claiming age and unemployment evolve over the years. When looking

 doi:10.3138/cpp.2019-029

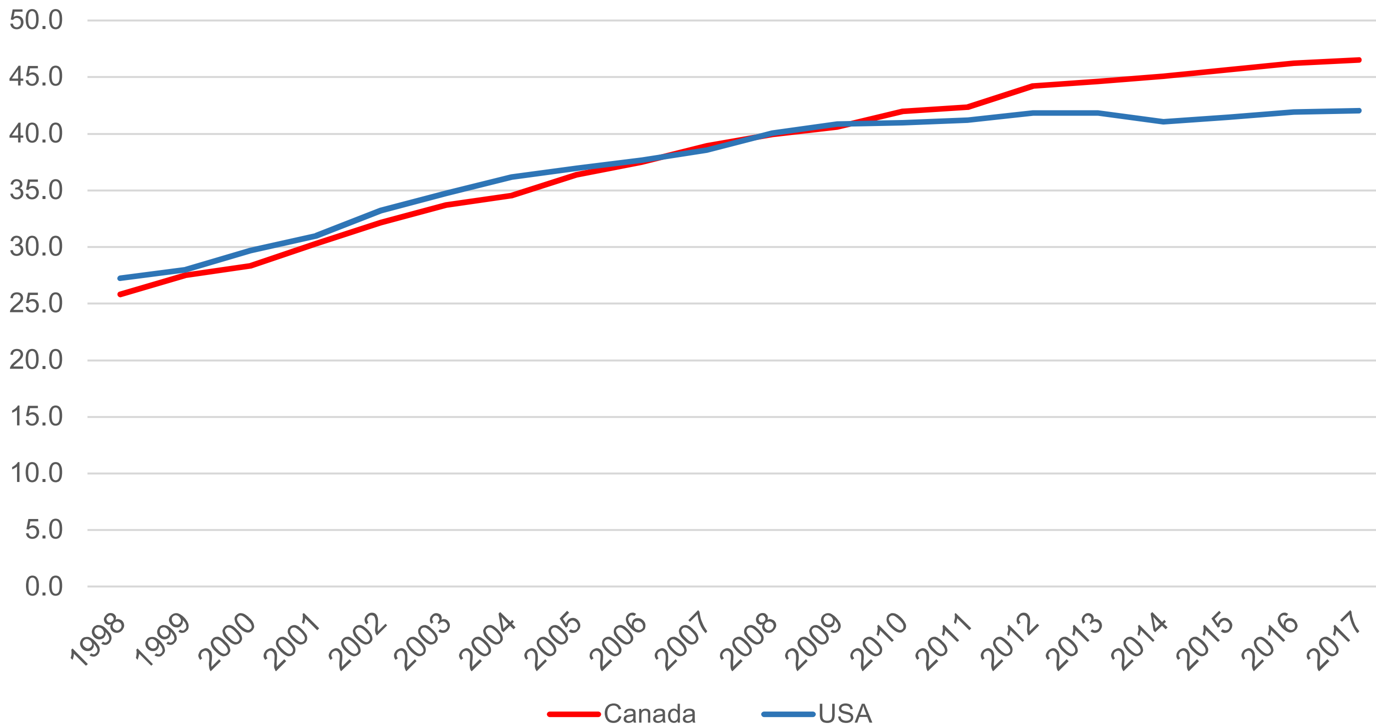

Figure 4: Population with Tertiary Education, 55–64 Age Group
Source: OECD.iLibrary (2019).

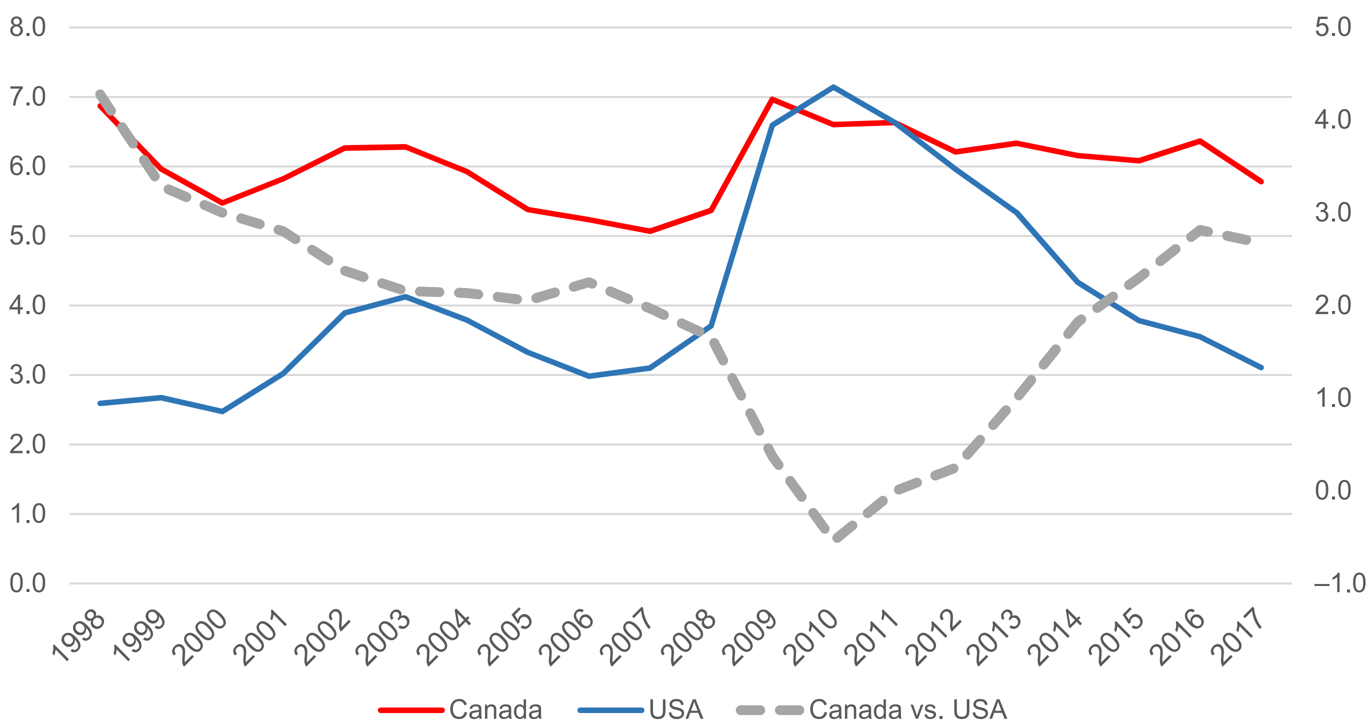

Figure 5: Unemployment Rates, 55–64-Year Age Group
Source: OECD.Stat (2019b).

at national data, there is no correlation in Canada between unemployment among older workers and claiming age for social security retirement pension. In the United States, the correlation is positive but moderate at 0.3.

The availability of private pensions may also affect retirement age because workers can become entitled to an employer-provided pension on retirement. The OECD provides different statistics regarding private pensions. First, total assets invested in private pensions are rather similar in both countries, when expressed as percentage of gross domestic product (GDP) and taking into account all funded pension arrangements.[15] In 2017, it reached 155 percent of GDP for Canada and 145 percent for the United States (OECD 2018).

An important distinction between the two countries regarding private pensions is the greater proportion of assets in defined-benefit pensions in Canada, which can also be seen as a consequence of the stronger decline of defined-benefit schemes in the United States. On the basis of the most recent data, 60 percent of pension assets were still in defined-benefit plans in Canada (2015), compared with only 32 percent in the United States (2017), the other assets being invested in defined-contribution occupational plans or personal savings (OECD 2018). This could provide an explanation for the greater stability of social security claiming age in Canada, because a more significant proportion of Canadian workers are entitled to a defined-benefit pension at a predefined age.

Finally, as mentioned earlier, the growing trend in Canada has been for workers to claim their social security pension while maintaining some form of employment. There is no earnings test. For private pensions, Canadian regulations used to prohibit employees from contributing or accruing further benefits under a defined-benefit plan while receiving retirement benefits from the plan. Regulations were changed, and it is now possible for employees aged at least 60 years or aged at least 55 years and eligible for an unreduced pension.[16] The situation is similar in the United States. Regulations were changed and now permit defined-benefit pension plans to pay benefits to active employees after they turn age 62 years.[17] Despite the changes in regulations, it is not common practice in either country to allow in-service payment of pensions in defined-benefit plans.

In Canada, personal registered retirement savings may be withdrawn at all times, subject to income taxation. In the United States, defined contribution plans and registered retirement savings plans (401[k] plans) can make payments to employees once they attain age 59.5 years, even if still employed.

Conclusion

The benefit claiming patterns for social security retirement pensions used to be similar in Canada and the United States. However, diverging changes to social security in the two countries were introduced over the past 20 years. The United States was more conservative. It opted for an increase in the full retirement age that lowers the amount of pension benefits received at any age, and maintained an earnings tests to receive a pension. Canada was more liberal; it did not change the full retirement age, and it dropped all conditions that used to limit the possibility of receiving a social security pension while working. Benefit level will increase in the future.

Substantial differences in the retirement experience of US and Canadian workers emerged between 1998 and 2017. These differences most likely have to do with the changes in social security pension provisions and amendments:

1. Between 1998 and 2002, Canadian workers claimed their pension on average one year earlier than American workers. Canadians may claim their social security pension as early as age 60 years in Canada compared with age 62 years in the United States. This difference in averages can be entirely accounted for by those Canadians who claimed their pensions at age 60 years (the Canadian minimum claiming age) to age 62 years (the American minimum age).
2. In the United States, full retirement age increased from age 65 years to 66 years between 2003 and 2009, and average claiming age increased from 63.3 years in 2003 to 64.6 years in 2017. In Canada, full retirement age was not changed, and average entitlement age (claiming age) has not varied much. One should also remember that the earnings test to receive a social security pension was maintained in the United States and dropped in Canada.
3. Despite the stability of average claiming age for a social security pension in Canada, effective retirement age from the labor market has increased substantially, by 3.5 years over the past 20 years. In fact, it increased more in Canada than in the United States[18] In other words, it has become common in Canada for workers to claim a social security pension and maintain some form of employment.
4. The growth of part-time employment among persons aged 65 years and older has been particularly important in Canada. It increased at an average annual rate of 7.3 percent between 1998 and 2017, compared with 3.1 percent for the United States. Part-time employment growth has been more important in the United States than in Canada in younger age groups.

In sum, different social security policies in the two countries have been associated with different outcomes with respect to the age at which social security benefits are claimed, the age at which workers leave full-time employment, and the extent of part-time work at older ages.

We also examined other factors—education, unemployment, and private pensions—to evaluate whether they provide a basis to explain the differences in work and retirement outcomes. The more important increase in the proportion of older skilled workers in Canada in recent years could possibly provide an explanation for the growing popularity of part-time work coupled with later retirement from the labor market in Canada, assuming this option is more popular for skilled workers. The greater proportion of assets in defined-benefit pensions in Canada could also provide an explanation, because a more significant proportion of Canadian workers are entitled to a defined-benefit pension at a predefined age.

Acknowledgements

We are grateful to Karine Bellavance, Assia Billing, Charles Cossette, Patrick Dontigny, François Fortin, Pierre-Carl Michaud, David Rajnes, Michel St-Germain, and Jean-François Therrien for their support and comments.

Notes

1 The CPP and QPP are similar programs; the QPP covers Quebec workers, and the CPP covers workers of the other provinces and territories. Retirement benefits and entitlement conditions are similar, and we make no distinction between the CPP and the QPP in this article.

2 For Canada, it means considering both tiers of public pensions: the CPP–QPP and the Old Age Security pension.

3 There used to be an earnings test at older ages in the United States, and Congress voted to eliminate the earnings test for workers aged 70–71 years in 1983 and for workers between the full retirement age and age 69 years in 2000. Some articles that evaluate the response of the removal of the earnings test were published (Gruber and Orszag 2003; Gustman and Steinmeier 2004; Haider and Loughran 2008; Song and Manchester 2007). Overall, conclusions state the impact on earnings and labor force participation rates has been limited, although it might have reduced the share of married men who work full time. However, the removal of the earnings test might have accelerated benefit receipt among the eligible population.

4 As of 2019, the CPP and the QPP are gradually being enhanced. They will begin to grow to replace one third (rather than one quarter) of the average work earnings received after 2019. The annual maximum earnings will also gradually increase by 14% by 2025 (Canada 2019a).

5 See Behaghel and Blau (2012), Munnell and Chen (2015), Nuschler (2018), Purcell (2016), and United States (2018) for related studies.

6 People of working age can be defined as people aged 20–64 years, but the precise ages vary across countries.

7 For more information on the impact of demography on rates of return for successive generations of CPP beneficiaries, refer to Godbout, Trudel, and St-Cerny (2014).

8 For instance, in the United States in 2003, the pension was reduced by US$1 for every US$2 of earnings above US$11,520 a year for people aged younger than 65 years and by US$1 for every US$3 of earnings above US$30,720 for beneficiaries aged 65–69 years. In Canada, there was initially an earnings test that stipulated a reduction in the pension in payment, but amendments were introduced in the 1970s to eliminate this earnings test. Nonetheless, the insured person must have fully or substantially ceased employment to be awarded a pension before age 65 years (Coward 1981, 229; United States 2004).

9 Under the CPP, retirees aged younger than 65 years who have earnings greater than the basic exemption are required, along with their employers, to contribute to the CPP. Working beneficiaries aged 65 years or older are given the option of contributing. On attaining age 70, contributions are no longer permitted under the CPP. Under the QPP, a working retiree with sufficient earnings must contribute to the plan if aged younger than 70 years. In return, retirees who contribute receive an annual pension supplement following each year they contribute.

10 This difference increased up to 3.0 years in 2007 and decreased slightly thereafter to reach 2.6 years in 2017.

11 These percentages exclude disability conversions at age 65 years when disability benefits are terminated and beneficiaries start receiving a retirement pension. Including disability conversions, the proportion of US new beneficiaries claiming their retirement pension at age 65 years and older increased from 30 percent in 1998 to 55 percent in 2017, and it remained stable at 33 percent in Canada.

12 Statistics provided refer to all retirees in both countries. Although we do not compare the data for public-sector employees, private-sector, and self-employed employees, we should note that significant variations exist in average retirement age between these three groups. For instance, in Canada for 2014–2018, public-sector employees retired on average 2.4 years earlier than private-sector employees, who retired 3.4 years earlier than self-employed workers.

13 Data on retirement from full-time employment are not available for the United States.

14 The impact of the 2008 recession on unemployment has been more important in the United States than in Canada.

15 This study covers all funded pension arrangements, irrespective of whether they are publicly or privately administered, whether they cover public- or private-sector workers, and whether assets are accumulated in pension funds, through pension insurance contracts, or through other vehicles.

16 Employers are allowed to offer qualifying employees up to 60 percent of their accrued defined-benefit pension while they continue to accrue additional benefits under the plan, and employers may also offer stand-alone bridge benefits that are payable for a predetermined period (Canada 2019b).

17 The Pension Protection Act (Pension Rights Center n.d.).

18 Although it remains higher in the United States at age 66.8 years, versus age 64.7 years for Canada.

References

Behaghel, L., and D.M. Blau. 2012. "Framing Social Security Reform: Behavioral Responses to Changes in the Full Retirement Age." *American Economic Journal: Economic Policy* 4(4):41–67. https://www.jstor.org/stable/23358244.

Canada. n.d. Canada Pension Plan (CPP)—Number of New Retirement Pension by Age, Gender and by Calendar Year.

At https://open.canada.ca/data/en/dataset/ea075020-b9f4-43c4-8d04-075132cbbc7d.

Canada. 2019a. Canada Pension Plan Enhancement. At https://www.canada.ca/en/services/benefits/publicpensions/cpp/cpp-enhancement.html.

Canada. 2019b. Registered Pension Plans (RPPs) Frequently Asked Questions. At https://www.canada.ca/en/revenue-agency/services/tax/registered-plans-administrators/about-registered-pension-plans-rpps/registered-pension-plans-rpps.html#q26.

Coward, L.E. 1981. *Mercer Handbook of Canadian Pension and Welfare Plans*, 7th edition. Toronto: CCH Canadian Limited.

Godbout, L., Y. Trudel, and S. St-Cerny. 2014. "Differential Returns by Year of Retirement under the Canada Pension Plan." *Canadian Public Policy/Analyse de politiques* 40(4):364–76. http://www.jstor.org.acces.bibl.ulaval.ca/stable/24365137.

Gruber, J., and P. Orszag. 2003. "Does the Social Security Earnings Test Affect Labor Supply and Benefits Receipt?" *National Tax Journal* 41(4):755–73.

Gustman, A.L., and T.L. Steinmeier. 2004. "The Social Security Retirement Earnings Test, Retirement and Benefit Claiming." Working Paper 10905, National Bureau of Economic Research, Cambridge, MA, USA. http://www.nber.org/papers/w10905.

Haider, S.J., and D.S. Loughran. 2008. "The Effect of the Social Security Earnings Test on Male Labor Supply: New Evidence from Survey and Administrative Data." *Journal of Human Resources* 43(1):57–87. https://doi.org/10.3368/jhr.43.1.57.

Latulippe, D., and F. Fontaine. 2019. "Effective Retirement Age from Employment and Full-Time Employment and the Impact of the 2008 Crisis." *International Social Security Review* 72(2):23–47. https://doi.org/10.1111/issr.12204.

Leime, A.N. 2019. "Extended Working Life Policies: Gender and Health Implications in Ireland." Whitaker Institute Policy Brief Series, Policy Brief No. 49, Whitaker Institute for Innovation and Societal Change, Galway, Ireland. At http://whitakerinstitute.ie/wp-content/uploads/2019/03/Whitaker_Policy-Brief_no.-49_AineNiLeime.pdf?utm_medium=email&utm_campaign=New%20Policy%20Brief%20published%20-%20Policy%20Brief%20no%2049&utm_content=New%20Policy%20Brief%20published%20-%20Policy%20Brief%20no%2049+CID_b6b9b0671412bf619474befd91c2b5d4&utm_source=Email%20marketing%20software&utm_term=Read%20more.

Mastrobuoni, G. 2009. "Labor Supply Effects of the Recent Social Security Benefit Cuts: Empirical Estimates Using Cohort Discontinuities." *Journal of Public Economics* 93(11–12):1224–33. https://doi.org/10.1016/j.jpubeco.2009.07.009.

Munnell, A.H., and A. Chen. 2015. "Trends in Social Security Claiming." Issue in Brief 15–18, Center for Retirement Research at Boston College, Chestnut Hill, MA.

Nuschler, D. 2018. *The Social Security Retirement Age*. Washington, DC: Congressional Research Service.

Organisation for Economic Co-operation and Development (OECD). n.d. Ageing and Employment Policies—Statistics on Average Effective Age of Retirement. At http://www.oecd.org/els/emp/average-effective-age-of-retirement.htm.

Organisation for Economic Co-operation and Development (OECD). 2018. *OECD Pensions Markets in Focus 2018*. Paris: OECD Publishing.

OECDiLibrary. 2017. Employment. At https://doi.org/10.1787/ef2e7159-en.

OECDiLibrary. 2019. Education Attainment. At https://doi.org/10.1787/0b8f90e9-en.

OECD.Stat. 2019a. FTPT Employment Based on National Definitions. At https://stats.oecd.org/Index.aspx?QueryId=9576.

OECD.Stat. 2019b. Short-Term Labour Market Statistics. At https://stats.oecd.org/index.aspx?queryid=36499.

Pension Rights Center. n.d. Phased Retirement. At http://www.pensionrights.org/publications/fact-sheet/phased-retirement.

Purcell, P.J. 2016. "Employment at Older Ages and Social Security Benefit Claiming." *Social Security Bulletin* 76(4):1–18.

Retraite Québec. 2018. Statistiques 2017—Régime de rentes du Québec. At https://www.rrq.gouv.qc.ca/fr/services/publications/statistiques/regime_rentes/Pages/statistiques-2017.aspx.

Song, J.G., and J. Manchester. 2007. "New Evidence on Earnings and Benefit Claims Following Changes in the Retirement Earnings Test in 2000." *Journal of Public Economics* 91(3–4):669–700. https://doi.org/10.1016/j.jpubeco.2006.11.002.

Turner, J.A. 1984. "Population Age Structure and the Size of Social Security." *Southern Economic Journal* 50(4):1131–46. https://doi.org/10.2307/1058439.

United States, Social Security. n.d. Benefits Planner: Retirement. At https://www.ssa.gov/planners/retire/agereduction.html.

United States, Social Security Administration. 2018. "Social Security Programs throughout the World: The Americas, 2017." At https://www.ssa.gov/policy/docs/progdesc/ssptw/2016-2017/americas/index.html.

United States, Social Security, Office of Retirement and Disability Policy. n.d. Annual Statistical Supplement, 2018. At https://www.ssa.gov/policy/docs/statcomps/supplement/2018/6b.html.

United States, Social Security, Research, Statistics and Policy Analysis. 2004. Social Security Programs Throughout the World: The Americas, 2003. At https://www.ssa.gov/policy/docs/progdesc/ssptw/2002-2003/americas/index.html.

World Bank. 2019. "Age Dependency Ratio, Old (Percent of Working Age Population)." At https://data.worldbank.org/indicator/SP.POP.DPND.OL.