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Homeownership and the Financial Security of Canadian Retirees

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Homeownership and the Financial Security of Canadian Retirees

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Executive summary

This report reviews international literature to identify how homeownership contributes to the financial security of Canadian retirees. The life-cycle hypothesis provides the conceptual framework for understanding financial preparation for retirement. This theory states that households try to acquire enough assets by the time they retire to maintain their pre-retirement level of consumer spending after they leave the workforce. Homeownership is one of the assets that help retirees preserve their standard of living, mainly by providing the owner-occupant with in-kind income, the value of which is equivalent to imputed rent. A decrease in consumer spending is observed upon retirement, which could suggest that households were imprudent. It seems, however, that this decrease is instead explained by a sudden deterioration in living conditions and the fact that, because they have more free time, retirees spend more time transforming the products they purchase in order to maintain their standard of living. Also, retired households do not dissave during retirement as quickly as is forecast by the life-cycle hypothesis because they want to keep their homes until an event changes their living conditions (for example, a deterioration in health or the death of a spouse).

Retirement systems contribute to retirees' financial security in two ways: by protecting them from poverty and by helping them maintain the standard of living they were accustomed to before retiring. In Canada, like in other countries, the retirement system is built around three pillars: a basic universal benefit, a pension plan related to employment, and additional savings. Homeownership is considered supplementary aid and is often called the fourth pillar. Internationally, there is a dichotomy between the model that is based on homeownership, which is more easily expressed in the legal and cultural framework of liberal, Anglo-Saxon countries that emphasize individual responsibility, and a more universal approach to retirees' financial security, in which homeownership is not encouraged. In order to situate the Canadian system, two points of comparison were chosen: Germany, which is representative of a social model that has a low rate of homeownership, and Australia, which is representative of the liberal approach that is based on the acquisition of assets. The Australian model tends to produce more inequality and social stratification, and its viability is threatened by a reduction in the rate of homeownership among young people. The German model, for its part, was reformed starting in 2001 because it was no longer viable given the particularly acute problem of aging in that country. The German system now increasingly encourages the acquisition of assets to which younger generations are more attuned. Young Germans are not just interested in acquiring principal residences, but also in acquiring rental real estate. We observe in all countries that retirees are very reluctant to draw on the equity in their homes to increase their current income. This attachment to homeownership is such that the financial tools designed to help retirees draw on the equity in their homes remain underutilised. Retirees generally extract this equity as a result of important events in their

lives, most often by selling their homes. Current Canadian retirees are in a privileged position. With Old Age Security and government pensions, private pension plans, and the high value of their homes, they are benefitting from some of the best protection against poverty, as well as a high rate of pre-retirement income replacement. The rate of homeownership among retirees is also very high. However, at the end of the 2000s, housing contributed less to retirees' wealth in Canada than it did in most other countries. Since lower income households have lower homeownership rates, housing contributes little to retirees' basic income, because the wealth is ensured by Old Age Security benefits, supplemented as needed by the Guaranteed Income Supplement. On average, the equity in Canadian retirees' homes contributes to their consumption considerably, replacing about 10% of pre-retirement consumption. Retirees' consumption is not affected by increases in real estate prices, which could be explained by the fact that the cost of acquiring annuities has increased to such a degree that the equity in currently retired Canadians' homes does not have greater buying power now than it did 25 years ago. The actuarial value of government pensions comprises the largest part of Canadian retirees' wealth. Although housing provides an important supplement to government and private pensions, homeownership is no substitute for a good pension plan.

Predictive analyses show that the Canadian retirement-income system is viable despite the aging population. However, decreased coverage by private pension plans and the fact that the Old Age Security benefits' indexation does not take actual salary growth into account will mean less income protection for Canadian retirees in the coming decades, especially for high-income households. With increased life expectancy and decreased interest rates, households will thus have to accumulate more wealth for retirement than is currently the case. Homeownership remains high for the current young generations, and housing should continue to contribute to this wealth. However, this contribution to wealth will be increasingly concentrated in medium- and high-income households, because the link between income and homeownership is stronger now than it was in the past. It does not appear to be appropriate to try to increase homeownership rates or acquire more valuable houses in order to grow future wealth, because these actions pose financial risks and could increase the distribution of retirees' income. It appears more attractive to try to improve access to the liquidity of equity in housing for retirees by using financial education, regulatory changes and fiscal incentives. Finally, studies show that in many countries, owning housing provides precautionary savings against health risks. In Canada, the health care offered to elderly people who are losing their autonomy often includes housing in long-term care centres. The impact of the provision of these housing services to the aging population deserves attention in terms of the challenge it poses for public finances and the financial security of Canadian retirees; however, this literature review does not address these topics.

1. Introduction

Canadian retirees currently enjoy historically favourable conditions. With the Old Age Security Pension (OAS), supplemented as needed by the Guaranteed Income Supplement (GIS), covering most basic needs, the poverty rate in this age segment has decreased sharply over the past half-century (Cross, 2014), and is among the lowest in the OECD countries (OECD, 2009). In addition, the accumulation of a large portfolio in preparation for retirement has been encouraged in recent decades by the creation of government and private pension plans (Myles, 2000). Finally, an increasing proportion of retiring Canadian households are homeowners. Almost 80% of households who reached retirement age in 2010 owned their homes (Hou, 2010). With Canadian housing prices reaching historic heights, retirees can count on high-value property assets.

But these favourable circumstances cannot be taken for granted. Although the elements put into place over the past few decades have paid off for recent generations of retirees, future generations of retirees may not enjoy such significant financial protection (Baldwin, 2016). First, since the end of the 1980s, yields on investments have been boosted by a sustained reduction in interest rates, but this movement has now ended. In parallel, although Canadian housing prices remained high after the global financial crisis, the experience of many other countries shows that large drops can cause significant economic slowdown. Finally, low birth rates and increased life expectancy in developed countries inevitably mean that retirees are forming an increasingly large part of the population. Such aging puts pressures on public finances that are accelerated by the retirement of the baby boomers. Since government pension plans were generally unfunded, they are an increasingly large burden for smaller generations to come.

Population aging is a phenomenon that has been anticipated for several decades, and measures to help an aging population maintain adequate income while containing the costs of such programs have long been explored and implemented. The World Bank recommends countries take a three-pronged approach to retirement: universal basic coverage in the form of guaranteed income, private pension plans, and encouraging saving (World Bank, 1994). The decrease in interest rates recently increased the cost of retirement plans that are based on government transfers, and we have seen the emergence of an asset-based welfare approach that appeals to individual responsibility. It is from this perspective that homeownership acts as a supplement to pension plans. The home is often a household's main asset, and homeownership thus plays an important role for retirees, allowing them to enjoy implicit income (imputed rent) in the form of housing services and have an asset they can rely on in the event of unexpected financial needs. Even when the home constitutes a considerable portion of the portfolio, the extent to which retired households use the various methods of accessing this wealth to support their consumption remains to be seen.

This report is a study of the contribution that homeownership makes to the financial security of retired Canadians. To this end, I will review international literature in order to understand the role of housing in retirement. I will start with a review of the main theoretical basis of financial preparation for retirement, the life-cycle hypothesis (LCH), in order to situate housing within the accumulation of assets in preparation for retirement. We will see that two elements related to retirement—the retirement-consumption and retirement-savings puzzles—will be identified, and the role of housing in them discussed. This review will show that housing plays a role in saving as a precaution against the risks of longevity and health. This is evident from the fact that retired homeowners usually leave their homes only when an event changes their living conditions.

The contribution of housing to retirees' well-being must be evaluated from the perspective of the governments' desire to create conditions that protect retirees from poverty and maintain their pre-retirement purchasing power. The literature shows that a large compromise exists between social programs and homeownership. We will thus examine the OECD's retirement-income systems to understand these arrangements and how housing is integrated into policies implemented to ensure retirees' financial security. This will show that homeownership is increasingly seen as a fundamental component of retirement policies, particularly in liberal, Anglo-Saxon countries such as Canada. The asset-based welfare approach, which underpins this report, has increased in popularity in recent years. Since Australia is more advanced in this approach, I will present its situation in more detail. We will discover that the Australian model, which is based on homeownership, is threatened by a decrease in the rate of homeownership among more recent generations.

We will then examine European systems and the way that retirees from some countries, in particular those from Germany, ensure their financial security despite lower homeownership rates. The ways in which retirees can extract equity from their homes and their attitudes regarding these methods are discussed. We will see that there is widespread resistance to using financial instruments such as reverse mortgages, which create debt against a house belonging to a household. Finally, we will address the situation of Canadian retirees. They are currently well protected against poverty by government pensions, and purchasing power is adequately protected up to average incomes. The current protection, however, is expected to diminish, especially for high-income households, because of decreasing coverage by private pension plans. The role of housing in protecting against poverty is minor, because government pensions—the Old Age Security Pension, supplemented as needed by the Guaranteed Income Supplement—ensure such protection. Housing equity supplements retirees' consumption substantially, but the benefit is proportionally smaller for high-income individuals to the extent that it does not seem possible for housing equity to fully compensate for the meager performance of private pension plans for high-income individuals. Changes in real estate prices likely do not have

a marked impact on retirees' consumption. Despite the large gains made in the housing market in recent decades, increased life expectancy combined with lower interest rates mean that housing equity probably lost some of its capacity to support consumption.

2. Saving for retirement, and the life-cycle hypothesis

2.1 The life-cycle hypothesis and accumulating assets

Households save during their working lives for three main reasons. First, they want to protect themselves against unpredictable events that have financial consequences, such as job loss, illness or divorce. We call this precautionary saving. Households also save to leave inheritances. The main reason they save, however, is to prepare for retirement. We will turn our attention to this third reason in order to establish the amount that needs to be saved.[1]

The life-cycle hypothesis (LCH) was initially formulated by Modigliani and Brumberg (1954). It provides the leading analytical framework for understanding why retirement is the main reason why households save. Basically, the LCH postulates that household wealth, which is made up of financial and physical assets along with the present value of all sources of anticipated income from present until death, is allocated to maintain a relatively stable level of consumption over time.[2] Knowing that the temporal profile of income during working life is generally shaped like an inverted U (low at the beginning of adult life, peaking during one's fifties and diminishing upon retirement), the model sets out three main steps that take place in sequence. At the beginning of adult life, income is low and households typically go into debt, partly for everyday consumption, but in particular when they purchase homes and raise their children. Then, once income surpasses consumption, they are able to reduce their debt loads and create portfolios. This ability to save is increased when the children leave home, which happens gradually between one's late forties and early fifties. Finally, when retirement arrives, households maintain their levels of consumption by using income from government and private pensions and, if that is not enough, by progressively liquidating the assets they have accumulated.

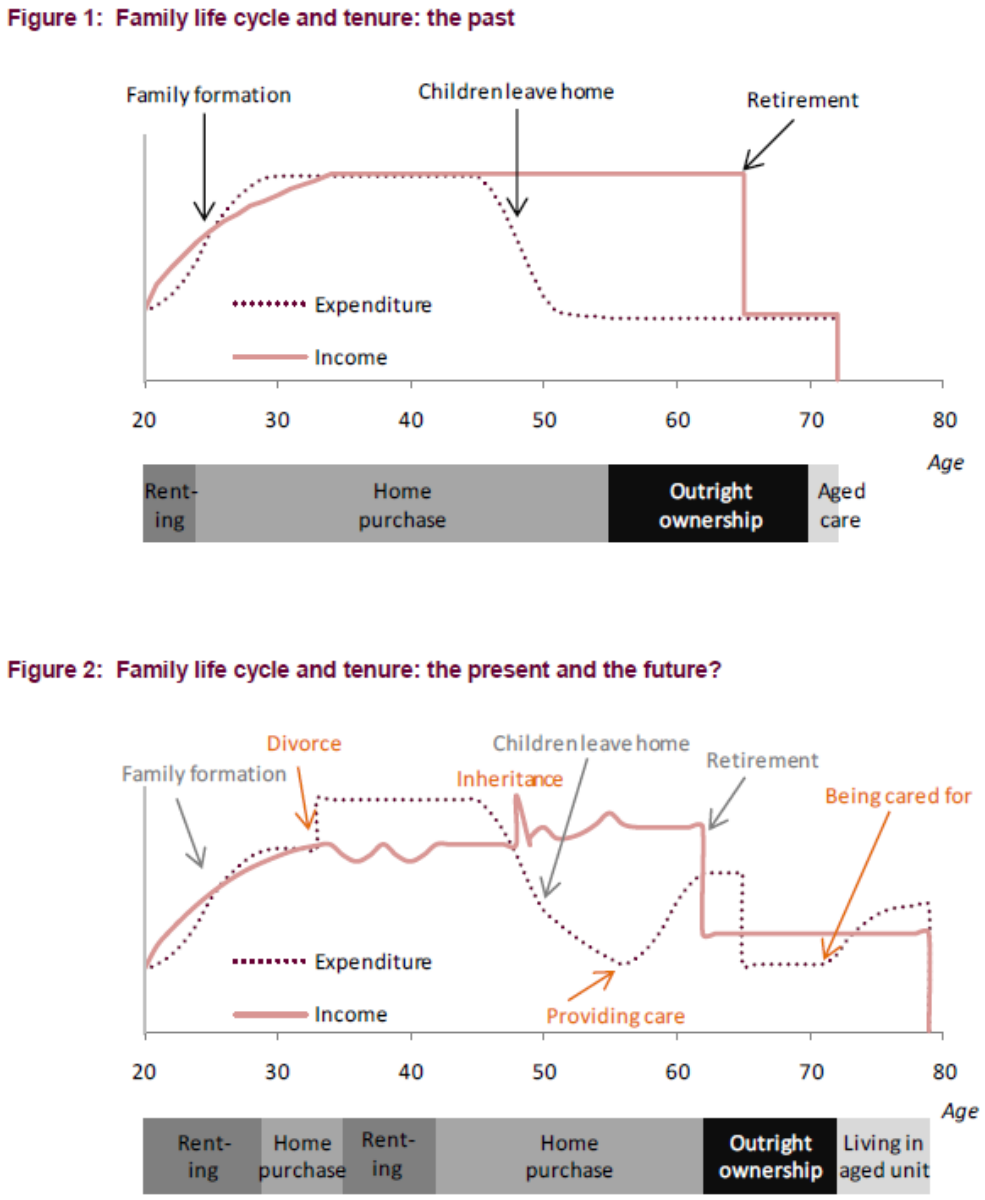
[1] According to Gourinchas and Parker (2002), precautionary saving is the main type of saving in the first years of adult life, while saving for retirement and inheritance become the main motives for people 40 years of age and older.

[2] The theory does not suggest that the level of consumption is perfectly stable. The level of impatience, also known as the rate of time preference, encourages consumption early in life, whereas the actual interest rate (the nominal interest rate minus the inflation rate), produces the opposite effect. Depending on whether the rate of time preference is greater or less than the actual interest rate, the rate of consumption will progressively decrease or increase during life. However, the consumption profile should be exempt from abrupt leaps and relatively unaffected by foreseeable events such as retirement.

Figure 1 (Williams, 2010) illustrates this idealized behaviour. The top part is typical of the traditional family at the time when the hypothesis was formulated. To take into account the more complex journey of today's families (including separations, blended families, and later child bearing), a modified diagram of asset accumulation is also presented at the bottom of the figure. No matter the journey, the projections of the desired value of the portfolio upon retirement are identical. In order to maintain a stable level of consumption, the portfolio should increase in value until retirement and attain a value that approximately corresponds to the acquisition of a lifetime annuity that provides an income that corresponds to the pre-retirement level of consumption.[3] Observations show that this profile of wealth accumulation as a function of age is generally confirmed in Europe (Doling and Elsinga, 2012) and elsewhere in the world (McCarthy, 2004).

[3] Although it is the necessary portfolio value and, *a priori*, the optimal solution if they survive, few retirees purchase lifetime annuities. Salisbury and Nenkov (2015) hypothesize that people are reticent to buy such annuities because allusions to their death induce anxiety.

Figure 1 Life cycle of income and expenses



Source: Figure from Williams (2010), p. 17, originally from Beer and Faulkner (2008).

Numerous studies quickly became interested in the way that households react to mandatory deductions as a way to finance government pension plans (Feldstein, 1976). From a short-sighted perspective, we could think that households would consider them to be a form of taxation. If that were the case, households' consumption would decrease as a result of the reduction in available income in order to preserve the amount of private savings accumulated for retirement. Government pensions would thus help improve retirees' income and consumption. If, however, households perfectly anticipated the expected benefits provided under government plans, the deductions could completely replace private savings. In this case, the net effect on retirees' well-being would less clear and could even

be nil (Kotlikoff, 1979). The characteristics of retirement pensions will affect the theoretical response of private savings. Because pensions are not liquid before retirement, precautionary savings could increase. However, precautionary savings could also decrease because pensions protect against longevity risk. The final effect is thus uncertain (Gale, 1998). According to Freitas and Martins (2014) the response of private savings must also take into account the fact that health care expenses, which are covered by the government, increase with age, which is equivalent to an increase in retirement pension with age. It is thus very difficult to establish the net effect of government pension plans on the total amount of private savings.

The way that households allocate assets in their portfolio is complex. The basic financial model—the capital asset pricing model (CAPM)—suggests that everyone's optimal portfolio is the same. But housing is an asset that is owned not only for its financial yield, but also for the physical services it provides. When a house having a value greater than what an optimal portfolio should contain according to the CAPM is added to a portfolio, the effect on ownership of other risky assets is uncertain (Brueckner, 1997). The problem is further complicated when cash constraints are added, or when pension plans are considered in households' portfolios. This leads McCarthy (2004) to conclude that we still don't have a model that provides a solution to the complex problem of choosing a portfolio for households that own a home and have pension plans, especially when specific tax provisions affect these assets.

Despite the fact that the evolution of the value of the portfolio as a function of age is widely accepted, some of the LCH's projections are backed by less convincing empirical support. For the purposes of our discussion, we will look at two aspects that were widely examined in the literature. The first is called the retirement-consumption puzzle. The second is the retirement-savings puzzle.

2.2 The retirement-consumption puzzle

It is widely held that, left to their own devices, households will not save enough for retirement. This propensity to not save adequately is so strong that even with compulsory savings plans and tax incentives, consumption diminishes upon retirement, which is the clearest indication, according to Akerlof (2002), that retirement savings are insufficient. This is what is called the retirement-consumption puzzle. This belief is in fact the basic reason why governments are called upon to provide retirement income support, either by providing pensions or by encouraging saving for retirement in a variety of ways. These interventions are considered necessary so that retirees do not live in poverty.

Shefrin and Thaler (1988) provide a theoretical basis, beyond simple short-sightedness, that explains the difficulties people have in meeting their retirement savings objectives.

According to the LCH, total wealth influences consumption, without regard to the composition of that wealth. Shefrin and Thaler borrow ideas from psychology to argue that portfolio composition must be taken into account, because the various asset classes do not give rise to the same propensity to consume. Very liquid assets, primarily cash, cause the strongest temptation to consume. According to their theory, long-term rational choices, like those involved in the LCH, cause internal psychological conflict because planning spending over a lifetime requires individuals to contain the excessive drive to spend current income. This income is mainly composed of salary, which is payed in cash. According to their behavioural approach, individuals are in fact conscious of this drive and look to resolve the conflict by adhering to mandatory savings programs that direct a portion of their current and future income into assets that are less liable to be consumed than cash holdings. Their model is a behavioural form of the LCH, called the BLCH.

We can immediately see the advantage of assets locked into very illiquid pension funds for meeting long-term savings objectives.[4] Shefrin and Taller also argue that because the equity in a house is an illiquid form of wealth, the behavioural hypothesis will also affect the decision to become a homeowner. The gradual repayment of a mortgage is in fact a way of directing part of one's current income toward a form of wealth (equity in a house) that is less likely to be consumed. Levin (1998) has provided empirical support for this model in the United States, showing that individuals' consumption during retirement is susceptible to variations in income and the value of liquid assets, but reacts minimally to variations in the value of illiquid assets such as housing and social security. Bernheim, Skinner and Weinberg (2001) also agree with the theory of "mental compartments" in which assets are located and with the hyperbolic discounting of future consumption as explanations for the retirement-consumption puzzle.

However, more recent literature has an increasing tendency to cast doubt on the very existence of a puzzle, even if we agree on the fact that consumption diminishes upon retirement. According to Hurst (2008), the puzzle disappears if we take two main factors into account. First, he observes that the aggregated reduction in consumer expenditures during retirement reflects a very heterogeneous reduction in spending on a personal level. This is explained by the fact that some households suddenly face deterioration in their health, which forces them to retire early. Their decrease in consumption reflects their lower anticipated future income. Banks, Blundell and Tanner (1998) conclude that discontinuity of consumption upon retirement disappears when these changes in condition are taken into account for UK households.

[4] Beshears et al. (2015) argue that when these assets are too illiquid, they can make households reticent to save for retirement if the accumulated sums cannot also act as precautionary savings. In comparing the level of liquidity of defined contribution retirement savings plans in six countries (United States, United Kingdom, Canada, Australia, Singapore and Germany), they conclude that these plans are generally too illiquid, the best balance being in Canada, where assets can be withdrawn in the event of job loss.

The second element proposed by Hurst is to adopt a household production perspective. In this approach, consumption is not simply measured by the purchase value of finished goods and services, but rather the result of a combination of products that are purchased on the market before being transformed by investing time into making them consumable. The case of meals is the most convincing. Hurst argues that an average household's decrease in expenses during retirement is limited to food expenses and work-related expenses. Expenses in almost all other categories of non-durable goods stay the same. At the end of remunerated employment, the cost of household production decreases, allowing retirees to transform foods at a lower cost.[5] Taking up the idea of household production, Schwerdt (2005) also concludes that the reduction in food spending during retirement can be explained by increased transformation of foods at home. Using American panel data from 1980 to 2000, Aguila, Attanasio and Meghir (2011) also observed no discontinuity in consumption during retirement despite the reduction in food spending. With German data, Lührmann (2010) and Beznoska and Steiner (2012) did not observe any decrease in consumption among German retirees once the increase in household production was taken into account.[6] Blau (2008) simulated the effect of endogeneity and household production and also concluded that the LCH's projections are valid.

The consumption puzzle does not seem to have been tested in Canada. However, by taking into account components of wealth that are often neglected by analysts, including the capitalized value of government pensions and family support, Cross (2014) concluded that the current generations of retired Canadians saved sufficiently to sustain their standard of living during retirement.

2.3 The retirement-savings puzzle and the effect of homeownership

According to the LCH, retirees' wealth should decrease progressively once they retire in order to support consumption. However, a considerable number of studies conclude that wealth does not decline during retirement at the speed forecast by the LCH, and will sometimes continue to grow with age, in such a way that many people die without having spent all of their wealth.[7] This is what we call the retirement-savings puzzle, which can be

[5] The value of time is measured by salary earned on the labour market. Since unemployed people do not earn a salary, the value of their time is less, reducing the cost of household production.

[6] Schreiber and Beblo (2016) observed that Germans who rent reduce their housing consumption during retirement, but that the lack of impact of the income variable makes it difficult to attribute it to a breach of the LCH.

[7] Empirically establishing the effect of age on the evolution of wealth is a delicate process that requires managing two main types of biases. In cross-sectional data, the cohort effect is present when successive generations do not have the same permanent income. If we do not correct for the fact that younger generations generally have higher permanent incomes, it could lead us to believe that wealth decreases faster with age than it actually does. A selection bias can produce an inverse bias, however. Since life expectancy is correlated with income and wealth, wealthier people are over-represented in older populations, causing the

explained in three ways. The first is that precautionary savings are required because of longevity risk (De Nardi, French and Jones, 2009).[8] In other words, uncertainty about when they will die leads people to retain their assets as a form of insurance in case they live longer than their life expectancy (Yaari, 1965). The second reason, which is also a form of precautionary savings, is the risk of illness, which exists because the likelihood of non-insured healthcare expenses increases with age (Dobrescu, 2015). Finally, the third explanation is the desire to leave an inheritance. This could be motivated by pure altruism or by strategic motives, such as creating an incentive for close relatives to provide care (Bernheim, Shleifer and Summers, 1985).

However, the literature shows that housing plays a key role in the fact that wealth declines more slowly than forecast during retirement. Chen and Jensen (1985) were among the first to observe that equity in housing is connected to the retirement-savings puzzle. They observed that older homeowners are less likely to use the equity in their homes than other components of their wealth to support their consumption.

One of the ways of accessing housing wealth to finance consumption is to sell one's house and become a tenant.[9] However, numerous studies have confirmed that, in the absence of events that modify retirees' living conditions (for example, a separation, the death of a member of the household or deterioration in health), very few elderly people move. Venti and Wise (1990) estimate that only 8% of retired American homeowners moved over any two-year period between 1969 and 1979, a proportion that doubled in the event of a change in living conditions. This low mobility can be explained by the fact that transaction costs, including psychological effects, are greater than the financial benefits that a smaller house would provide. Venti and Wise (1990) argue that many moves give rise to a subsequent increase in housing consumption, indicating that desired housing consumption[10] does not diminish with age among the elderly. Their most recent study (Venti and Wise, 2004) drew the same conclusion, as did Hurd (2002).

Venti and Wise (1991) looked at another way of accessing housing wealth. They tried to establish whether or not reverse mortgages significantly increased retirees' consumption

illusion that wealth does not decline fast enough with age. This bias, which is particularly strong for elderly individuals whose mortality is higher, appears equally in cross-sectional and longitudinal data. These biases are sometimes considered in studies, but corrective mechanisms do not always eliminate all biases.

[8] This term is used in finance to describe the negative financial consequences that arise when a person lives longer than they had anticipated.

[9] Later on, we will see the various strategies for accessing this wealth.

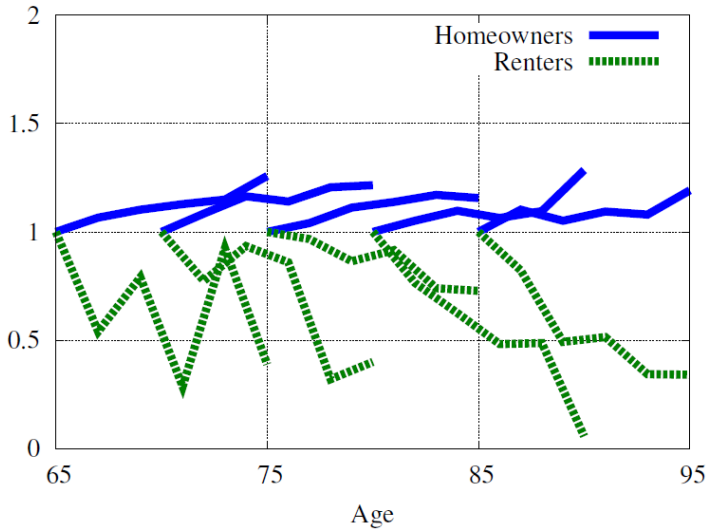
[10] When a household has lived in the same house for a long time, it is possible that its current housing consumption no longer corresponds to its current needs, but instead to its needs when it took possession of the house. Following a transaction, observed housing consumption should correspond with desired housing consumption. Households that move therefore give us a glimpse into whether households sell in order to increase current consumption by decreasing housing consumption.

levels. According to them, this financial tool's potential is very limited because individuals with low incomes have low net worth. People who are single and very elderly benefit the most, but their low residual life expectancy means that selling their home is often more advantageous than a reverse mortgage.

According to Nakajima and Telyukova (2012), this reticence toward using the equity in housing is connected to the retirement-saving puzzle. In their study of the profile of wealth as a function of age for American retirees between 1996 and 2006, they showed (see figure 2) that tenants' wealth diminishes with age at a rate that tends to accelerate for more elderly people, as forecast by the LCH,[11] but that, inversely, homeowners' wealth tends to increase with age. According to their simulations, retirees mainly remain homeowners because their house is both insurance against longevity risk, which would explain 30–40% of the median wealth of the most elderly, and a component of their legacy. However, constraints on borrowing become increasingly tight with age, making access to equity in housing increasingly difficult. Those who remain homeowners thus have a relatively flat consumption profile with age, whereas households that face unexpected expenses are forced to sell their homes. A flat consumption profile is thus partially the result of selectivity bias. Homeowners' increased wealth, for its part, is fortuitous, resulting from the desire to continue living in their houses in the context of the real estate bubble in the United States at the beginning of the 2000s. The role of housing as a precautionary asset against longevity and health risks has also been observed in other American studies such as Poterba, Venti and Wise (2011).

[11] According to the LCH, propensity to consume wealth is inversely proportional to residual life expectancy. Since this diminishes with age, the propensity to consume should increase with age, which accelerates the rate of dissipation of wealth.

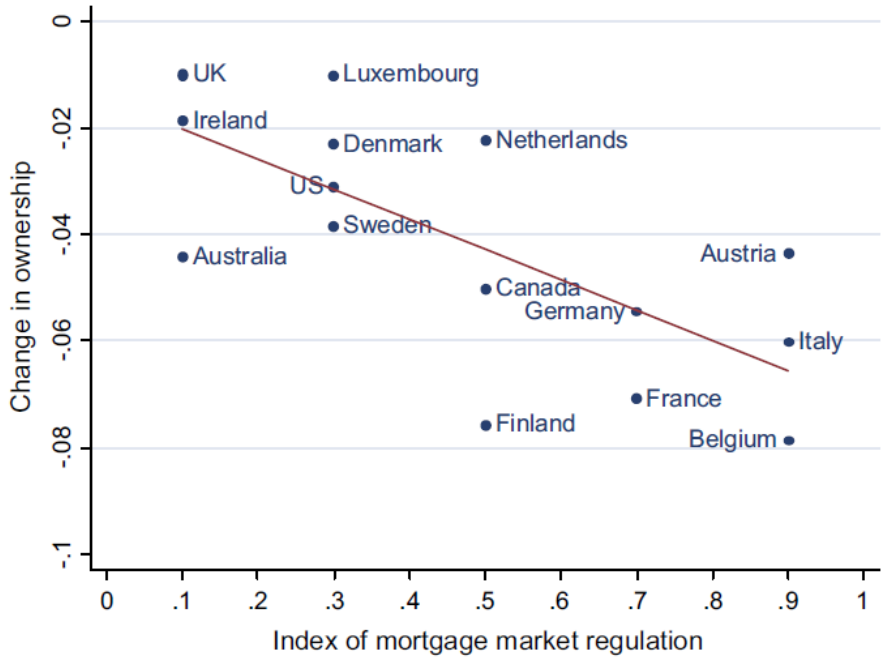
Figure 2 Median wealth in proportion to its initially observed value



Source: Nakajima and Telyukova (2012), p. 2.

Chiuri and Jappelli (2010) try to verify whether or not this type of result can be found in other countries. They also want to see whether a pattern can be found between the rate of decline in housing wealth and the international differences in institutions, public policies and how financial markets work. They argue that the ease of access to mortgage financing, as measured by the loan-to-value ratio, is already known to be a decisive factor in the rate of homeownership among young people. They want to confirm whether ease of access to mortgage financing contributes to slowing down the speed at which the rate of homeownership diminishes with age among retirees. The presumption is that developed financial markets are necessary to be able to access housing wealth without having to sell one's house. To test these hypotheses, they use data from 15 countries from the Luxembourg Income Study (LIS), combined with Tsatsaronis and Zhu's (2004) mortgage market regulatory index. They also control for differences in generosity of programs aimed at the elderly, such as access to public housing. Figure 3 shows that the surmised link is clearly present, since the homeownership rate (and the wealth accession rate) declines more rapidly with age in countries where mortgage loans are more regulated (such as Italy, France, Belgium, Finland and Germany) than in countries where there is easier access to mortgage loans (United States, United Kingdom, Denmark and Sweden). Canada is located in the middle of the pack on this scale, with a regulatory index of 0.5, even though its homeownership rate is among the highest for this age group.

Figure 3 Change in ownership from age 75 to 80 and severity of mortgage market regulation



Source: Chiuri and Jappelli (2010), p. 658.

Like Venti and Wise (2004), Banks et al. (2012) look at real estate transactions to compare the age-based evolution of housing wealth among American and British retirees. They observe that the British are less mobile than Americans. This is partially the result of less climatic diversity in the United Kingdom, but mainly because the transaction costs are higher there. They observed that, after a transaction, property equity decreased more in the United Kingdom than in the United States. However, they also analyzed an additional indicator—the evolution of actual consumption other than housing consumption after age 60—and found that it diminished more quickly in the United Kingdom. According to them, this could indicate that residential mobility is reduced in the UK because real estate transactions are more costly and constrain consumption more than what is felt in the U.S.

Angelini, Brugiavini and Weber (2014) studied homeownership rates after retirement age in 13 European countries for cohorts born before 1935 and between 1935 and 1945. The rate tends to increase until age 65 and remain high until at least 70, except in the Netherlands, where the decrease appears in one's early 60s. After having analyzed the sources of mobility, they also concluded that real estate transactions are triggered by events that affect households (death, separation, a change in health). The probability of a housing transition is, in absolute terms, very low (they observed 472 transitions out of 28,509 possible transitions). Like Chiuri and Jappelli (2010), they also found that these transitions are less frequent in countries where transaction costs are high. However, they identify an

economic motive, since the ratio of housing wealth to current income increases the probability of becoming a tenant.

The conclusion that emerges from these studies is that most retirees are homeowners in most countries and that these retirees are reticent to use their house to support their current consumption. It is mainly events that diminish their autonomy or upset their living conditions that lead them to sell. Ease of access to mortgage financing seems to help maintain a high rate of homeownership among retirees. In order to situate the role of housing as an asset during retirement, we will now see how Canada's retirement-income system compares to that of other OECD countries.

3. The retirement-income system in Canada and some OECD countries

3.1 Measuring the adequacy of retirement-income systems

Income support policies for the elderly have two main objectives: protecting retirees from poverty and avoiding an income drop when individuals leave the labour market. In order to provide a frame of reference for the Canadian retirement-income system, the details of which are provided in a later section, we must examine the net results of various retirement-income systems in terms of achieving these two objectives: combatting poverty and preserving purchasing power during retirement. To do so, I will use results from an exhaustive study (OECD, 2009) on retirement-income systems in OECD countries.

Retirement-income systems are based on different ways of using the three pillars outlined in the previously cited World Bank study. The first is the basic public pillar, which includes a redistributive component to protect retirees from poverty. The right to benefit from this pillar is usually determined by duration of residency, but access to benefits is often subject to an "earnings test," meaning that the allocation of benefits is conditional upon being below an income or asset threshold, above which the value of benefits decreases or is eliminated. The second pillar is mandatory private savings. It is often linked to employment and aims to maintain a certain proportion of the purchasing power achieved before retirement. The system is completed by optional savings, which provide increased protection for purchasing power.

Table 1 summarizes the effectiveness of these systems with respect to the two objectives (combatting poverty and maintaining purchasing power) using indicators that show gross pension replacement rates for simulations of individuals who worked an entire career in each country at different salary points.[12] The table presents the effect of government plans

[12] Grech (2013) examines measurements for determining the adequacy of retirement pensions. Although he acknowledges that the income-replacement rate is the most widely used measurement, it is limited in some ways. First, it is a historical rather than a prospective measurement, which requires waiting until retirement to evaluate the actual replacement rate. The rate is an individual measurement which is not necessarily

on the left, then, in order, mandatory private plans, voluntary defined contribution (DC) private plans, the total of the mandatory plans (public [government] and private) and, on the far right, the combined total of all plans. Three values are indicated for each category, corresponding to the gross pension replacement rates for workers who earned 50%, 100% and 150% of the average salary over their career. When replacement rates are roughly the same at each salary point, this is indicative of low degressivity. This means that the retirement-income system favours the income-replacement objective. If, on the other hand, the replacement rate diminishes significantly with income, then there is a strong redistribution between retirees in favour of lower-income retirees, indicating that protection against poverty is the main objective.

For all the OECD countries, government plans provide on average replacement rates of 57.4%, 40.6% and 34.5% at the three income thresholds. The corresponding percentages for Canada are 63.1%, 39.2% and 26.1%. Canada's government pension plans redistribute to a greater degree than the OECD average, providing better protection against poverty but replacing the income of high-income individuals less well. However, when the mandatory private component is added, OECD-average replacement rates increase to 70.1%, 54% and 48%. Since mandatory private plans do not exist in Canada, we see that the mandatory Canadian retirement-income system actually protects medium- and high-income individuals less well. In other words, medium- and high-income Canadians must rely more heavily on voluntary private savings to reach retirement income protection levels that are comparable to the average across OECD countries. Current Canadian retirees are succeeding in this regard—the replacement rates increase to 97%, 73.1% and 60.1% in Canada if voluntary private plans are added, figures which are higher than the corresponding OECD averages of 88.9%, 67.9% and 58.6%.

representative of the entire population. He specifically argues that it has no direct link to poverty, because a system that replaces 100% of income may seem generous, but it does not reduce the risk of poverty if an individual was poor during their working life.

Table 1 Gross pension replacement rates as a percentage of individual salary

	Public			Mandatory private			Voluntary DC			Total mandatory			Total with voluntary		
	0.5	1.0	1.5	0.5	1.0	1.5	0.5	1.0	1.5	0.5	1.0	1.5	0.5	1.0	1.5
OECD members															
Australia	52.4	13.6	0.6	38.7	38.7	38.7				91.1	52.3	39.4			
Austria	76.6	76.6	74.0							76.6	76.6	74.0			
Belgium	58.2	41.0	30.2				15.1	15.1	11.2	58.2	41.0	30.2	73.3	56.2	41.4
Canada	63.1	39.2	26.1				33.9	33.9	33.9	63.1	39.2	26.1	97.0	73.1	60.1
Chile	20.4	4.8	0.0	36.9	37.2	37.3				57.3	41.9	37.3			
Czech Republic	71.8	43.5	34.1				39.2	39.2	39.2	71.8	43.5	34.1	111.0	82.8	73.4
Denmark	68.0	30.6	18.1	52.6	47.9	46.4				120.7	78.5	64.4			
Estonia	40.4	27.4	23.0	24.8	24.8	24.8				65.2	52.2	47.9			
Finland	64.1	54.8	54.8							64.1	54.8	54.8			
France	64.8	58.8	47.5							64.8	58.8	47.5			
Germany	42.0	42.0	42.0				16.0	16.0	16.0	42.0	42.0	42.0	58.0	58.0	58.0
Greece	75.4	53.9	46.7							75.4	53.9	46.7			
Hungary	73.6	73.6	73.6							73.6	73.6	73.6			
Iceland	25.9	6.5	4.3	65.8	65.8	65.8				91.7	72.3	70.1			
Ireland	73.4	36.7	24.5				43.0	43.0	43.0	73.4	36.7	24.5	116.4	79.7	67.5
Israel	44.5	22.2	14.8	59.3	51.1	34.1				103.7	73.4	48.9			
Italy	71.2	71.2	71.2							71.2	71.2	71.2			
Japan	49.8	35.6	30.8							49.8	35.6	30.8			
Korea	59.2	39.6	29.2							59.2	39.6	29.2			
Luxembourg	77.7	56.4	53.0							77.7	56.4	53.0			
Mexico	30.7	3.8	2.5	24.7	24.7	24.7				55.5	28.5	27.2			
Netherlands	59.1	29.5	19.7	35.3	61.1	69.7				94.4	90.7	89.4			
New Zealand	81.1	40.6	27.0				14.1	14.1	14.1	81.1	40.6	27.0	95.3	54.7	41.2
Norway	57.9	45.7	34.3	5.5	6.8	7.2	8.3	11.3	16.5	63.4	52.5	41.6	71.6	63.8	58.1
Poland	24.5	24.5	24.5	24.3	24.3	24.3				48.8	48.8	48.8			
Portugal	67.5	54.7	54.1							67.5	54.7	54.1			
Slovak Republic	45.9	37.6	35.1	28.3	28.3	28.3				74.2	65.9	63.4			
Slovenia	62.0	39.2	36.7							62.0	39.2	36.7			
Spain	73.9	73.9	73.9							73.9	73.9	73.9			
Sweden	48.6	33.9	25.7	21.7	21.7	42.2				70.2	55.6	67.9			
Switzerland	49.3	32.0	21.4	14.9	23.1	15.4				64.3	55.2	36.8			
Turkey	73.5	64.5	64.5							73.5	64.5	64.5			
United Kingdom	55.2	32.6	22.5				34.5	34.5	34.5	55.2	32.6	22.5	89.7	67.1	57.0
United States	49.5	38.3	33.4				37.8	37.8	37.8	49.5	38.3	33.4	87.4	76.2	71.2
OECD34	**57.4**	**40.6**	**34.5**							**70.1**	**54.0**	**48.0**	**88.9**	**67.9**	**58.6**
Other major economies															
Argentina	115.2	90.4	82.1							115.2	90.4	82.1			
Brazil	55.4	57.5	61.7							55.4	57.5	61.7			
China	97.9	77.9	71.2							97.9	77.9	71.2			
India	75.6	55.8	49.2							75.6	55.8	49.2			
Indonesia				14.1	14.1	14.1				14.1	14.1	14.1			
Russian Federation	30.6	30.6	30.6	17.3	17.3	17.3				47.9	47.9	47.9			
Saudi Arabia	100.0	100.0	100.0							100.0	100.0	100.0			
South Africa	0.0	0.0	0.0				54.5	54.5	54.5	0.0	0.0	0.0	54.5	54.5	54.5
EU27	59.2	47.0	41.3							69.0	57.6	53.0			

DC = Defined contribution
Source: OECD (2013), p. 137.

3.2 Retirement-income systems in Germany and Australia

We will turn our attention to two countries that take very different approaches: Germany and Australia. These countries are interesting cases because the homeownership rate in

Germany is low, and few German households can rely on housing wealth for financial security during retirement, whereas Australians rely explicitly on home equity to supplement the mandatory retirement-income system. The information about pension plans comes from the same OECD document as table 1(OECD, 2013).

The German public retirement-income system is based on a one-pillar unfunded system[13] that aims to protect workers' income. Workers make contributions for which they are attributed points. One point equals one year of contributions at the average salary. The contributions are divided equally between employers and employees, and are currently at a combined rate of 19.6%. The number of points attained varies depending on salary, more points being attributed to higher salaries, and fewer to lower ones. The salary subject to the maximum contribution was set at EUR67,200 in 2012, about 200% of the average salary. The value of a point is not guaranteed and fluctuates according to a formula that is based on the ratio of the number of contributors, weighted by the value of the contributing salaries, to the number of retirees. Given particularly fast population aging in that country, combined with a very low birth rate (about 1.4 children per woman) and an immigration rate that, until recently, was very low, this adjustment to the points' value ensures the plan's viability and the competitiveness of enterprises, but it means there is no explicit guarantee of retirees' income. The age of eligibility for benefits is set at 65 but will progressively increase to 67.

In addition to the government plan, defined contribution private plans are fairly widespread. In sum, the government plan means that at age 65, a person who has worked their entire career in Germany can access a retirement pension that replaces about 42% of their gross salary,[14] up to 150% of the average salary. The replacement rate drops to 32% of their gross salary at 200%. Since the government plan in Germany covers only workers, no basic universal old age benefit exists. Thus, the plan does not include redistribution to poorer retirees, and its sole objective is to replace employment income. Instead, social assistance protects low-income retirees from poverty. Since the plan is not funded, the pensions are paid directly from workers' contributions and the government budget. These pensions are currently equal to approximately 10% of the GDP and 70% of retirees' income. According to the OECD, the addition of health services increases the value of the resources provided to the elderly by 30%. As is the case in Canada and in other countries, supplementary voluntary private plans exist, and the majority of German workers

[13] There are two main approaches to designing a public retirement plan: funded plans and unfunded plans. In a funded plan, each person contributes in order to accumulate adequate capital to cover the benefits owed. In an unfunded plan, the working generation contributes an amount that is adequate to cover the benefits of the generation that is currently retired. Unfunded plans are disadvantageous for less populous generations.

[14] The rate of 42% comes from the 2013 study and is one percentage point below the rate of 43% estimated in 2009. It is likely that the decrease in point value explains this slight decrease in the gross income replacement rate.

participate in them. The income replacement rate increases to 58% when these plans are taken into account.

In Australia, the basic government pension pays out benefits as of age 65. As in Canada, these benefits are subject to income and wealth thresholds that exclude the principal residence. However, the income threshold at which the value of benefits starts to diminish is very low (less than 6% of the average salary), and the rate of degressivity is high. Thus, the basic pension in Australia replaces 52.4% of the income of salaried workers who make 50% of the average salary. The replacement rate is only 13.6% at the average salary and barely 0.6% for individuals making 150% of the average salary. Such low percentages mean that Australia's government pension offers the lowest replacement rates among OECD countries, alongside Iceland and Mexico. Clearly, the objective of Australia's government pension plan is to provide a basic standard of living for retirees who were not able to save during their working lives.[15]

The majority of Australian retirees' pensions come from mandatory defined-contribution private plans (for which the contribution rate is currently 9.5% of salary). The plans are called "superannuation" and work like group RRSPs. The maximum portion of salary subject to contribution is about 250% of the average salary. Taking into account mandatory private plans, which increase the replacement rate by 38.7% at all salary levels, the mandatory replacement percentages are 91.1%, 52.3% and 39.4%. Note that because Australia's private pension plans are defined contribution plans, the value of vested pension benefits cannot be known in advance, and it is difficult to know whether the future income replacement rate will be the same as the current rate.

With regard to these two countries, Canada's government pension plan offers the best income protection at 50% of the average salary, with a replacement rate of 76.5%. This rate drops to 44.5% at the average salary and 30% at 150% of the average salary. When private pension plans are taken into account, the final replacement rates are 93%, 73% and 59%, respectively. As we can see, the Canadian system ensures almost total protection against poverty for retirees and rather low degressivity up to the average salary. Protection is weaker only for high-income individuals. The replacement rate for individuals who earn 150% of the average salary is on par with the average for OECD countries.

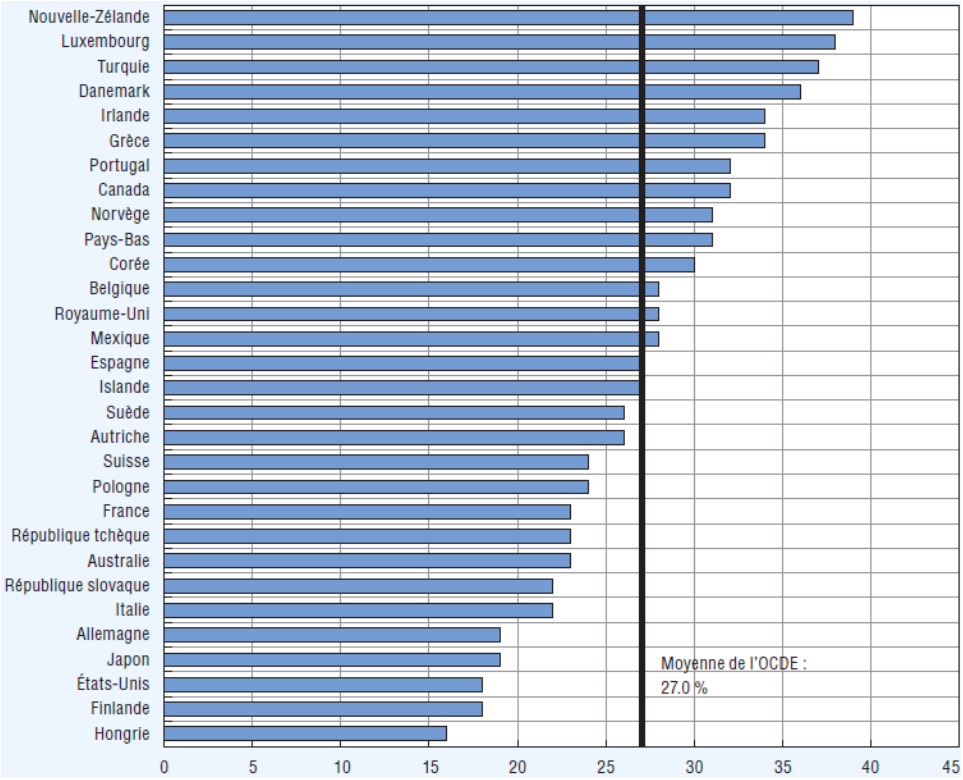
In order to analyze the performance of retirement-income systems from the perspective of combatting poverty, figure 4 (next page) shows the minimum value of pension benefits as a percentage of average salary. The calculation assumes that an individual has acquired all their rights to benefit.[16] Canada is among the countries that offer the highest minimum benefit, about 32% of the average salary, as compared to an average of 27% across OECD

[15] Low-income retirees also have access to public housing, and their medical costs, including medications, are covered by the state.

[16] The acquisition of these rights is usually established according to residency or employment criteria.

countries. Germany is among the countries that offer the lowest minimum benefit, at 19%, while Australia is at 23% (but its rate diminishes very quickly as income increases).

Figure 4 Basic retirement benefits as a percentage of average salary



Source: OECD (2009), p. 65.

This quick overview shows that Canada has pension plans that offer both excellent protection against poverty and a high income-replacement rate. Australian and German retirees are among the least well-protected by their government pension plans. In both cases, mandatory defined-contributions private plans ensure most of the income protection for retirees. This means that the incomes of salaried workers are protected. The potential role of housing in offering additional support for retirees' financial security is thus more crucial in these countries. In Canada, high-income individuals find themselves in a similar position. The next section examines how pension plans and homeownership interact during financial preparation for retirement.

4. The interaction between retirement-income systems and homeownership

4.1 The really big trade-off

Kemeny (1980, 1981) proposed a system for analyzing different forms of national retirement-income systems. He maintains that a high homeownership rate tends to go hand in hand with a less generous social security net. The reasoning is based on voter's interests: owning assets, particularly housing, provides access to a store of value that is in itself a security net for difficult periods. Consequently, homeowners are expected to be more averse to paying taxes to fund social security measures. This reluctance is explained in part by the fact that assuming the costs of acquiring a house reduces the amount of income that can be put toward taxes. Also, because they have acquired assets, homeowners have less need for social security. In a subsequent article that illustrates this thesis, Kemeny (2005) compared three general social assistance indexes (government expenditure as a percentage of GNP and tax as a percentage of GNP) across eight OECD countries, of which three had low homeownership rates (Sweden, West Germany and the Netherlands), two had average homeownership rates (United Kingdom and France), and three had high homeownership rates (United States, Canada and Australia). Table 2, which is reproduced from Kemeny's study, illustrates his argument, even though the number of observations is too low for the correlation he observed to be significant. Kemeny believes that the policies that are the most susceptible to being influenced by homeownership rates are precisely those intended to provide retirement income. Thus, he also demonstrates that retirement benefits are lower in Anglo-Saxon countries. Homeownership is therefore a substitute for formal pension plans, leading to the view that homeownership is the fourth pillar of retirement-income systems.[17]

Table 2 Homeownership rates and social assistance indicators

Country	Home ownership Rate 1973	Govt Expenditure as % GNP 1976	Tax as % of GNP 1968–70
Sweden	40	49.8	43.0
W. Germany	35	41.7	34.0
Netherlands	33	52.2	39.7
UK	52	41.5	36.6
France	45	40.0	36.3
USA	62	33.0	27.9
Canada	60	36.4	30.2
Australia	66	28.6	24.4

Source: (Kemeny, 2005), p. 63.

Kemeny's hypothesis was studied statistically for the first time by Castles (1998). Considering that homeownership policies are part of the democratic electoral process, he

[17] Torgersen (1987) calls housing a wobbly pillar under the welfare state model. He is interested in a complimentary but more limited hypothesis: that the welfare state lost interest in housing, investing less and less in social housing. Malpass (2008) disputes this interpretation, contending that housing is instead becoming an increasingly large point of reference for social policy as neo-liberal ideas spread and homeownership rates simultaneously increase.

postulated a "very big trade-off" between homeownership and the protection afforded by retirement policies. He identified a significant negative correlation between aggregated measurements of social security spending and homeownership rates from one country to the next. In broad terms, traditionally liberal new-world countries had higher homeownership rates and lower social security spending in the 1990s, indicating different welfare state models. André and Dewilde (2016) confirmed that homeowners have less favourable attitudes toward redistributive policies than tenants, but do not all share the same attitude and are influenced by the state of financial markets. According to Castles, the impact on the generosity of retirement-income systems is direct because retired homeowners can get by with smaller pensions because of the imputed rent in their homes. Castles also casts doubt on the causality presumed by Kemeny and proposes an inverse causal link: a smaller social safety net causes households to acquire assets in order to get through hard times. In reality, the causality is probably bidirectional, a position that Kemeny finally took (Kemeny, 2005). More recently, another element has been considered in the interaction between the homeownership rate and pension plans: the growing value of real estate assets. According to Ansell (2014), at a given rate of homeownership, an increase in housing prices would make voters more averse to redistributive spending and favour the rise of a more conservative electorate.

4.2 Asset-based welfare and liberalism

The idea that homeownership could be a substitute for social spending spread during the 2000s, and took on even greater importance after the financial crisis, coming to be known as asset-based welfare. This quote from the introduction to Doling and Ronald (2010) explains the context that led to this increased interest.

> In recent decades, the notion of an 'asset-based' or 'property-based' welfare system has become increasingly central to debates on the restructuring of western welfare states. The principle underlying an asset-based approach to welfare is that, rather than relying on state-managed social transfers to counter the risks of poverty, individuals accept greater responsibility for their own welfare needs by investing in financial products and property assets which augment in value over time. These can, at least in theory, later be tapped to supplement consumption and welfare needs when income is reduced, for example, in retirement, or used to acquire other forms of investment such as educational qualifications.
>
> Several socioeconomic developments have helped to advance the cause of asset-based welfare. On one side has been a combination of pressures brought on by the ageing of national populations and their expected impact on pensions and public welfare resources, along with government retrenchment of public welfare provision associated with neoliberalisation. On the other has been, until very recently at least, expanding homeownership rates and increases in housing property values across most economically advanced economies. Essentially, the potential wealth tied up in owner-occupied housing has been considered, more or less explicitly, to be a solution to the fiscal difficulties involved in the maintenance of welfare commitments, and through that, the asset in asset-based

> welfare has frequently become property or housing asset. (Doling and Ronald, 2010, p. 165)

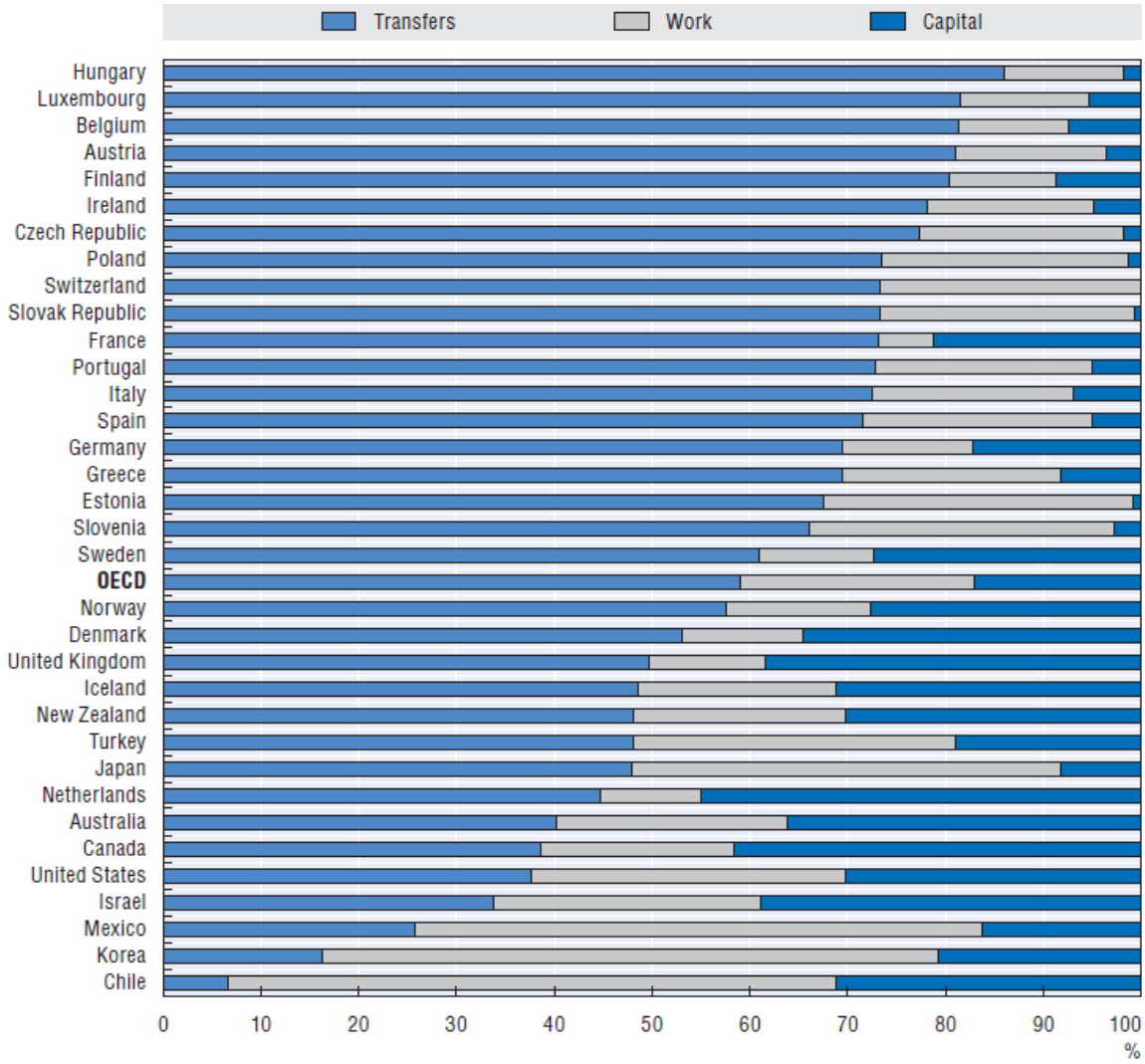
But it's not only opportunism that created increased government interest in this approach. It was also argued that asset-based welfare is a better form of aid for disadvantaged people than direct assistance from government transfers because it equates to a form of education. Acquiring assets requires knowledge, planning and discipline, qualities that, once acquired, will help reduce inequality (Sherraden, 1988).

But are governments currently relying too heavily on housing wealth to secure retirees' incomes? Beal (2001) indicates that only half of Australian retirees plan to use their houses to improve their financial conditions. In fact, a developed and flexible mortgage market is necessary for home equity to be used to increase financial security. Otherwise, an asset-based welfare state could not have developed in the United Kingdom (Lowe, Searle and Smith, 2012). Literature tends to acknowledge that Anglo-Saxon countries (the United States, the United Kingdom, Ireland, Australia and Canada) share a liberal tradition in which individual responsibility is encouraged, and have succeeded in financializing housing, which is necessary to encourage homeownership. This approach to financial security must also be seen as a sign of greater tolerance for inequality between retirees' incomes, which is particularly evident in social contexts that are favourable to the free market and individual property ownership (Conley and Gifford, 2006). Taking social context into account leads Delfani, De Deken and Dewilde (2014) to argue that a trade-off between a generous welfare state and homeownership may not be possible. Culture and political conditions mean that not all countries can adopt an asset-based welfare model. Such a model is possible only where housing and pension plans have been "commoditized," particularly in traditionally liberal countries.

One way of determining whether or not government transfers are a smaller source of income for the elderly in liberal countries is to split up retirement income based on its source. Figure 5 separates income into three categories: government transfers, work income and income from owning financial and physical capital. OECD countries are ranked in descending order based on the portion of retirement income that came from government transfers during the mid-2000s. Most European countries rely heavily on government transfers to provide for retirement (with the notable exception of Finland, where such transfers are the smallest). Liberal Anglo-Saxon countries, including Canada, are located mainly at the bottom of the table.

Since Australia was an early adopter of the asset-based welfare state model, its experience is worth a closer look. Not only does its government pension plan benefit only its poorest citizens, but, as we will see, its model seems to be increasingly in crisis.

Figure 5 Sources of income in % among older people (mid-2000s)



Source: OECD (2013), p. 60.

4.3 Housing as a retirement asset in Australia: a model in crisis?

It is undoubtedly not an accident that the role of housing as a substitute for government pensions was first raised by Australian researchers. As we have seen, government pensions for the middle class are very low in Australia, and mandatory defined-contribution private pension plans form the basis for retirement income. The Australian approach is sometimes seen as an example of how a country can limit the financial impact of population aging, because the government spends very little on the retirement-income system. But the superannuation system is reaching maturity as Australian retirees have a high rate of property ownership (over 80% at age 65) and can thus rely on their own homes for affordable housing, ensuring a supplement to retirement pensions to avoid acute impacts from the frugality of government pension plans.

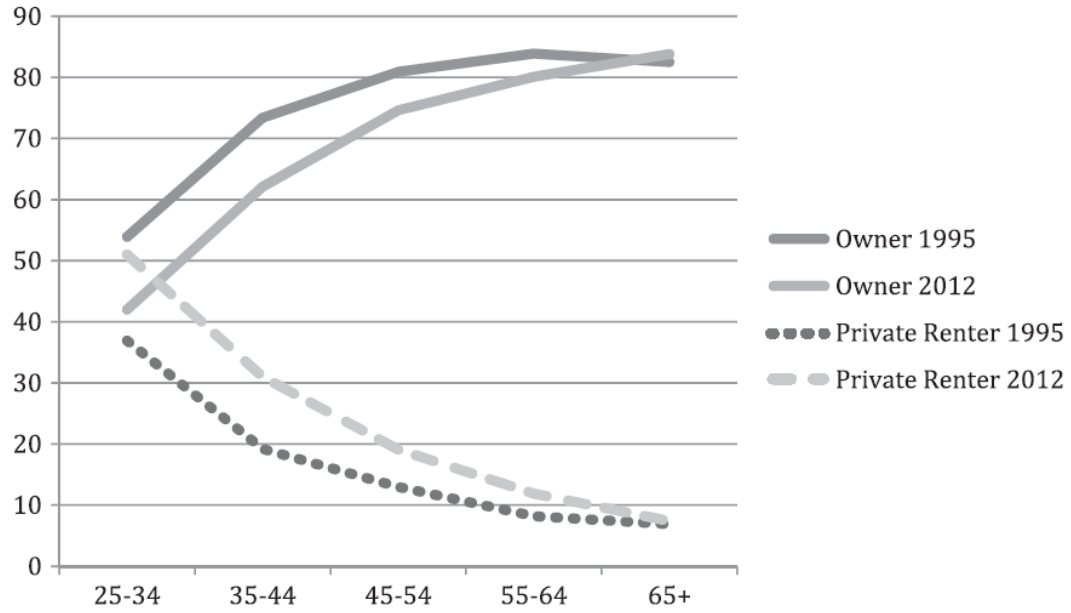
There is, however, growing concern about the impact of this approach on poverty among the elderly. Already, one third of Australian retirees are considered poor, one of the highest percentages among OECD countries, and the situation could get worse. Yates and Bradbury (2010) examined the impact recent trends in asset ownership are having on retirees' financial situations, particularly because the homeownership rate is dropping after decades of growth. According to them, the current system puts future retirees who have limited saving capacity at risk of falling into poverty, leading the authors to call homeownership a "crumbling pillar" under the Australian retirement-income system. To understand the consequences, Yates and Bradbury cite Beverly et al. (2008):

> First, this [low-income] population is less likely to own homes, investments, or retirement accounts, where most asset-based policies are targeted. Second, with little or no federal income tax liability, the low-income have little or no tax incentives, or other incentives, for asset accumulation. Third, asset limits in means-tested transfer policies have the potential to discourage saving by the low-income population.

In short, the poor cannot establish the financial and real portfolios on which Australians' retirement income security is now based. Since income inequality is growing during working life, the number of tenants is expected to grow, and these inequalities will be perpetuated during retirement.

Other studies on the subject confirm this apprehension, the most complete being by Stebbing and Spies-Butcher (2016). They are particularly interested in homeownership rates among young cohorts, and highlight a pronounced decrease in rates among recent cohorts. As seen in figure 6, between 1995 and 2012 the rate decreased by 10 percentage points until 35–44 years of age and by 5 percentage points at 45–54 years of age. This decrease is particularly pronounced among low-income households.

Figure 6 Homeownership in Australia by age group, 1995 and 2012



Source: Stebbing and Spies-Butcher (2016), p. 198.

The decrease in homeownership rates does not seem to be caused by life cycle changes (e.g., later marriages and parenthood), but is rather the result of less accessible housing due to increased real estate prices.[18] This homeownership rate decrease affects all categories of households. According to them, there is no indication of late catch-up for homeownership rates, especially among low-income households. Thus, the homeownership rate at 65 years of age, which is already decreasing, will continue to decline over the coming years in Australia. Since indebtedness is on the upswing, the proportion of debt-free homeowners will decrease even further. Part of Stebbing and Spies-Butcher's conclusion is worth citing:

> Rather than confirming the economic model of asset accumulation as a process of lifetime consumption smoothing, the theory on which asset-based policies are based, homeownership trends appear to reflect an accelerating process of social stratification. As earlier research has found...financialisation may instead be increasing inequalities in each successive generation by intensifying the reliance of households on unequal financial markets. In Australia, this is exaggerated by tax policies for the two primary retirement savings vehicles – superannuation and housing. Analysis of tax concessions reveals benefits flow overwhelmingly to a very small proportion of high-income households... (Stebbing and Spies-Butcher, 2016, p. 203)

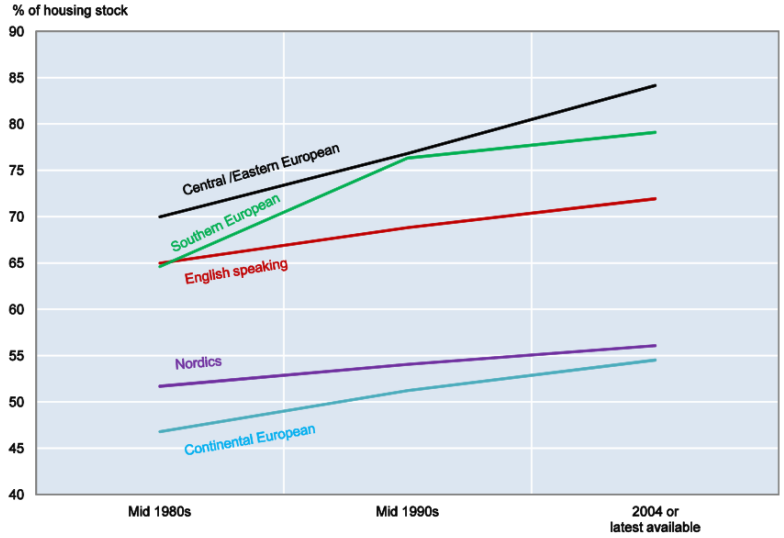
[18] The Australian Parliament held an inquiry into the decrease in homeownership rates in Australia, and this is the conclusion that seems to emerge from the submissions, which can be consulted here: http://www.aph.gov.au/Parliamentary_Business/Committees/House/Economics/Home_Ownership/Submissions

This conclusion is shared by Doling and Ronald (2010), who think the evidence is weak that homeownership is capable of adequately meeting the goals of the retirement-income system as a solution for replacing government pension plans. It seems difficult to construct a policy that encourages homeownership without exacerbating, rather than reducing, income inequality. Relying on homeownership to reduce poverty among homeowners during retirement tends to weaken government pensions to the point that they exacerbate poverty among retirees who are not homeowners (Dewilde and Raeymaeckers, 2008).[19] There is also resistance to the asset-based welfare model in the United Kingdom (Montgomerie and Büdenbender, 2015).

4.4 Pension plans and housing in Europe

The recent decrease in homeownership rates in Australia, as well as in the United States since the financial crisis, should not obscure the strong tendency among OECD countries over the past decades: a somewhat widespread increase across Europe (see figure 8) that brought the average homeownership rate in the European Union to 70% in 2014 (Eurostat). Europe, however, is not a homogenous entity. Figure 7 shows that large differences remain between the various European regions, despite the fact that homeownership rates increased everywhere.

Figure 7 Evolution of homeownership rates by European region



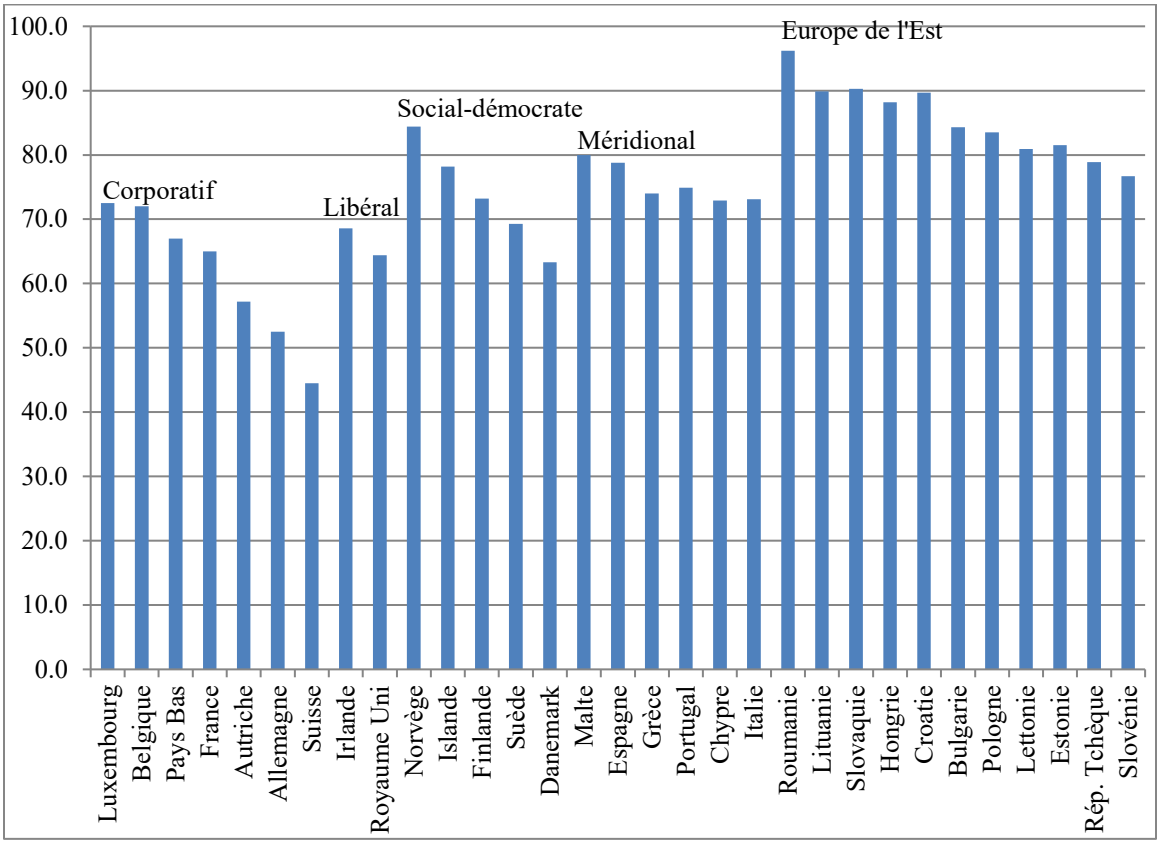
Source: Andrews, Sánchez and Johansson (2011), p. 17.

[19] As an example, remember that homeownership among disadvantaged groups was an issue in American presidential elections with Clinton's "National Homeownership Strategy" and George W. Bush's "Ownership Society." The measures brought forward to reach the objectives of these policies unfortunately brought about the development of the toxic mortgage financing conditions that led to the global financial crisis (Fortin, 2012).

In a book that analyzes the role of housing in helping to mitigate the impact of the growing cost of pension plans in Europe, Doling and Elsinga (2013) establish a link between homeownership rates and welfare state models. They define five models they call corporatist (Germany, France, Belgium, the Netherlands, Switzerland and Austria), liberal (Anglo-Saxon model in the United Kingdom and Ireland), social democratic (Sweden, Norway, Finland and Denmark), Mediterranean (Portugal, Spain, Italy and Greece) and Eastern (former communist bloc countries). Figure 8, which was constructed using 2014 Eurostat data, shows homeownership rates for European countries classified by social model (from left to right: corporatist, liberal, social democratic, Mediterranean and Eastern), and in descending order within each group according to homeownership rate. Each rate increase corresponds to a change in social model. It is clear that the highest rates are in Eastern Europe (unweighted average of 85.5%) and Mediterranean Europe (75.6%), while the lowest are in the corporatist model (61.5%).[20] The corporatist model's homeownership rate is dragged down by two countries in particular: Germany (52.5%) and Switzerland (44%). We will examine the specific circumstances that explain the low homeownership rates in these two countries.

[20] According to Norris and Winston (2012), homeownership is more widespread in countries where income distribution is more uneven. They remark that heterogeneity between countries tends to decrease over time, particularly because more similar mortgage products are developed as a result of access to the European Union, which entails the homogenization of mortgage regulations.

Figure 8 European homeownership rates by social model in 2014 (in %)



Source: Eurostat, consulted on April 14, 2017.

Bourassa and Hoesli (2010) attribute the low homeownership rate in Switzerland to the following factors. First, the price of single-family houses is relatively high because of the scarcity of available land, the result of a small territory and significant restrictions on transforming farmland into urban land. High down-payment requirements on mortgage agreements are a major obstacle to purchasing a house. In addition to these conditions in terms of pricing and financial instruments, there are also taxation factors (high property tax rate, high tax rates on property transfers, and taxable capital gains on principal residence), the most important of which is that imputed rent for the principal residence is taxable. Since mortgage interest is deductible, households that have enough funds to pay off their mortgage debts have no incentive to do so. The taxation of imputed rent is particularly disadvantageous for retirees who, having reduced income, must take the liquid assets needed to pay taxes on imputed rent from their pecuniary income. Bourassa and Hoesli point out that, in addition to these factors that discourage homeownership, there are two factors that are beneficial to tenants: strong protection against rent increases and the ability, in many cantons, to deduct rental costs when calculating income subject to cantonal tax.

The low rate of homeownership in Germany is historically rooted in the severe housing shortage that resulted from the destruction that occurred during the Second World War. In

order to alleviate this shortage, the government encouraged the reconstruction of a large number of multi-unit housing projects during the post-war period. Germany remained a tenant society because of continued financial incentives for owners of rental housing and difficulty accessing mortgage credit because of high down-payment requirements. Swiss and German retirees thus have fewer real estate assets than retirees in other countries.

To estimate the contribution of housing to household income, Doling and Elsinga calculated the value of housing as a proportion of the GDP in two ways. First, they looked at the value of housing stock occupied by owners. This measurement shows, unsurprisingly, that the value of housing stock occupied by owners as a proportion of the GDP reflects homeownership rates. Thus, the highest values were observed in Eastern and Mediterranean Europe, and the lowest were in Germany, Belgium, the Netherlands, Denmark, Sweden and Finland. Housing equity accounted for 65% of household wealth overall, but increased to 85% in Mediterranean Europe. The second measure is the value of imputed rent, which varies significantly more than the value of residential capital stock.[21] The lowest values were in corporatist and social democratic countries, where the value was generally less than 10% of GDP, except in the Netherlands (12.2%) and France (10.9%). Values were intermediate in liberal nations (11.9% in Ireland and 14.2% in the United Kingdom) and high in Eastern Europe (between 15% and 28% except in Latvia, where the contribution was estimated at only 3.9%) and in Mediterranean Europe, particularly in Greece (22.6%) and Portugal (24.7%).

These observations tend to show that corporatist and social democratic models are less dependent on the accumulation of assets and that these assets play the largest social role in Eastern and Mediterranean Europe. This data, however, covers the entire population. When the data is limited to retirees, the contribution of imputed rent to homeowners' income appears less linked to social models. In social democratic countries, this figure varies between 14% (Denmark) and 24% (Sweden). In terms of Eastern European countries, the figure is lower in Hungary (23%) and Slovenia (21%) than in Ireland (26%) and the Mediterranean countries (27% for Italy and Portugal). In almost all countries, the largest source of income was retirement pensions, which accounted for between two thirds and three quarters of retirees' income.

4.5 Can housing supplement a retirement pension?

To investigate how homeownership can help supplement retirement pensions, Doling and Elsinga distributed a survey in eight countries that represent their five models: the United

[21] The estimation of the value of imputed rent can theoretically be approached in two ways: either by assuming it is equivalent to the cost of renting a similar dwelling or by assuming a standard rate of return on the value of capital stock. Doling and Elsinga use data from national statistics agencies without specifying how these estimates were formulated. Variability between countries could arise in part from non-uniform statistical approaches.

Kingdom (liberal), Germany and Belgium (corporatist, with different homeownership rates), Finland (social democratic), the Netherlands (considered a combination of corporatist and social democratic), Portugal (Mediterranean), and Slovenia and Hungary (Eastern, with different homeownership rates). This survey aimed to determine retirees' attitudes and perceptions concerning their housing wealth and their retirement pensions.

In terms of perceptions about the adequacy of retirement pensions, citizens in Eastern and Mediterranean Europe were the most concerned about their income level during retirement. On the other end of the spectrum, citizens of social democratic countries are the least anxious in this regard. When asked whether ensuring retirement income was a state or an individual responsibility, the majority of people acknowledged that the individual responsibility to work, save and contribute to pension plans was fundamental. This outlook was more widespread among younger generations. But almost all respondents also said that governments have a responsibility to ensure that individuals' basic needs are met, especially for people who are incapable of meeting their own needs. There is clear evidence that the demographic situation in most European countries, where young people are outnumbered, creates a generation gap. They observed that confidence in the sustainability of government and private pension plans divides generations, younger generations being less confident that existing plans will be adequate when they retire. In the United Kingdom, for example, younger individuals often did not even mention government pensions as an anticipated source of retirement income and said they were preparing by themselves. A similar attitude was also reported in Hungary. In fact, respondents saw a large change taking place in terms of responsibility. One middle-aged individual reported that when they were young, no one worried about saving for retirement. But, from the perspective that the state will no longer have the means to do the same in the future, each individual must see to it themselves.

It is instructive to see how opinions about housing interact with opinions about pensions. One Finnish person said he preferred paying his mortgage to putting money in his bank account because he saw it as a form of savings. One Portuguese person worried that his pension fund would not pay all of his bills, but thought that if he kept his house, he could earn income by renting it. The authors also observed a distrust of private pension plans among residents of the United Kingdom and Finland. The authors then looked to examine attitudes about strategies for drawing income from housing. The next section presents strategies for extracting housing wealth and attitudes toward them.

4.6 Attitudes toward financial tools for extracting housing wealth in Europe

The simplest method, which most homeowners use, is to occupy the entire dwelling and receive in-kind housing services. Implicit rent is equal to the difference between the cost

of occupying the dwelling and the cost of renting an equivalent dwelling.[22] If one wants to earn pecuniary income from their house, there are three main strategies. First, part of the house can be rented. Since a smaller part of the house is occupied by the owner, the value of in-kind services rendered is reduced. The more radical way of liquidating the equity in a house is to sell it. Then there are two options: buying a cheaper house, thus liberating part of the equity, or giving up homeownership altogether and becoming a tenant. Finally, financial tools can be used to increase mortgage debt and extract cash earnings. Financial tools allow retirees to retain their homes and receive periodic income in the form of interest-only mortgages (to avoid having to pay off the principal) or reverse mortgages, where the value of the debt increases over time. Reverse mortgages can be paid out as annuities, meaning the equity of the house is used to purchase an annuity that is paid out until death, at which point the lender is repaid when the house is sold.

Reverse mortgages are uncommon in Europe and the United States. First, many countries do not have the legal framework to allow them (Reifner, et al., 2009). When they are possible, their use remains rare, especially in France and Germany. Almost all contracts of this type are found in only three countries: Spain, Ireland and the United Kingdom, the latter of which alone accounts for 80% of the European market (in 2007, the UK accounted for 33,000 of 39,700 total contracts in Europe).

Ong et al. (2013) observed that in Australia and the United Kingdom, the extraction of housing wealth occurs not only during old age, but at any point when urgent needs arise. Home equity lines of credit allow for frequent withdrawals of smaller amounts. Extraction by sale is more rare and is observed mainly among the elderly and, surprisingly, among young households. Naumanen and Ruonavaara (2016) studied two separate mechanisms used in Finland to extract housing wealth, a distinction which was also observed by Vorms (2009). Equity release schemes (ERS) are financial products designed exclusively for the elderly in order to support their consumption. The financial institution provides periodic income and is repaid upon death or when the house is sold. This product is equivalent to a reverse mortgage. The other form, called housing equity withdrawal (HEW), can be used at any time to deal with large, infrequent expenses. It is equivalent to a home equity line of credit. Naumanen and Ruonavaara conclude that the elderly in Finland have almost no interest in ERS. When households extract wealth from their housing, they generally use HEWs to deal with infrequent expenses rather than to boost their standard of living. Overton (2010) found similar results in study of 553 British ERS users. The three main

[22] There are two main ways to calculate the value of implicit rent. The one described here is equivalent rent, the value of which is greatest when the dwelling is debt-free, because then there are also the least expenses. It is also possible to calculate imputed rent by assuming a rate of return on the value of the house. A supplementary way of converting imputed rent into cash is to neglect the maintenance of the house. The loss of market value can be seen as liberated cash to consume other goods and services.

uses of extracted money were housing maintenance and repairs, vacations and debt repayment.

There is an additional obstacle to the use of ERS in the United Kingdom: a lack of information and support with regard to the available options (Burgess, Monk and Williams, 2013). The use of reverse mortgages is also rare in the United States. In order to understand why, Davidoff, Gerhard and Post (2017) asked homeowners over the age of 57 about the main product offered in the United States, the Home Equity Conversion Mortgage (HECM). Although most of the people polled knew about the product, few of them were familiar with the terms of the contract. After being informed about the legal provisions and speaking with people who had used the product, a larger proportion of people, especially the poor and those less educated, said they were more inclined to use the product. The authors concluded that increased financial literacy or simplifying the product would help popularize it. According to Haurin and Moulton (2017), the problem is less a lack of availability of financial products and more a lack of interest in using them on the part of retirees in both Europe and the United States.

Johnson, Worthington and Brimble (2015) examined ways of helping Australian retirees take advantage of their housing wealth. They indicated that reverse mortgages seemed to be gaining popularity, with 42,000 contracts in 2010. However, the product was used on less than 1% of housing stock, and less than 10% of households said they planned to use it. Among these products, they suggested exploring government-secured bonds that provide liquid assets to retirees, the form of which was not described. But they argued that the initial task is to try changing people's perceptions with regard to their houses, so they see them as an asset that can help them financially.

Doling and Elsinga studied the data on moving to determine whether or not retirees actually use the option of liquidating their home equity by selling their home. In all countries, mobility is higher before retirement (55–64 years of age) than it is afterwards. The highest rates of mobility were observed in Sweden (12% over a five-year period between 65 and 75 years of age) and the United Kingdom. The lowest rates were in corporatist countries. On average, less than 5% of retirees moved over a five-year period. The data does not indicate whether the new dwellings were worth less than the old ones, indicating a very low propensity among retirees to sell their homes to obtain more liquid assets.

What are Europeans' attitudes with regard to these financial products and strategies for extracting wealth? Doling and Elsinga make several observations based on interviews they conducted in various countries. Younger generations, especially in Finland and the United Kingdom, prefer to invest in their house rather than in a pension plan, and subsequently downsize when the house becomes too big. The reported comments show that the tangible aspect of housing and the home value associated with it account for this preference. Even if individuals are aware of the high market value of their house, they

show a strong emotional attachment to it, saying it is a refuge where they feel safe, and the familial meeting place. Selling this asset represents losing something precious. One young Finnish interviewee explained:

> I understand very well why people don't want to sell their home. Over the years there are a lot of memories that accumulate in those walls, and it takes on a far greater value than a bank account. So I can understand how a house can be precious, but I don't understand how a bank account could be.

In Germany, Portugal, Belgium and the United Kingdom, people mention the attachment that comes with the effort put into acquiring and maintaining a home, effort that would quickly be erased if their home was sold with the risk of not having anything. This perspective causes negative feelings. Finally, some say that homeownership is very rewarding. One Dutch person said, "Having something, a reserve, is a very pleasant feeling. It's very old-fashioned. And if it's not for you, it's for your children. That is also important." Returning to the financial aspects, the authors point out that selling implies large transaction costs, which mean that sellers gain relatively little.

In order to determine whether there is a sociological component to the low homeownership rate in Germany, Helbrecht and Geilenkeuser (2010) conducted a survey to find out the role that housing plays in retirement planning for three generations of residents in the city of Bremen (540,000 inhabitants): the economic miracle generation (65–75 years of age), the pre-unification generation (45–55 years of age) and the post-unification generation (25–35 years of age). The authors immediately recognized generational impacts on attitudes and attempted to identify them. One of the impacts they noticed was that younger generations are more worried about the future.

In response to the question regarding preparation for retirement, the younger generation sees real estate as an asset. Many young respondents were already homeowners, unlike previous generations at the same age, and also hoped to acquire additional real estate in order to rent it. Real estate is seen as a retirement investment that is superior to government pension plans, the benefits of which, as we have seen, vary in value depending on demographics. In short, young people are planning for their retirement by being as minimally dependent on the state as possible. One of the interviewees explained, "I don't count on any benefits from the state anymore. Or so minimal that you shouldn't…well, include them in your plans," (Helbrecht and Geilenkeuser, 2010, p. 981).

Most middle-aged respondents had private pension plans. One of them, a homeowner, said his house was his main asset, but none of them referred to their house as being an asset they accumulated for retirement. The majority of the most elderly respondents, save two, reported having at least as much, if not more, income in retirement as they did while they were working. This privileged situation exists because the economic miracle generation accumulated substantial government pension rights and many of them are still working.

They see their house as an asset for emergencies only. One elderly respondent said, “Oh well, for the old age pension you can actually take the house, right? So, if worst comes to worst, there will be cash through the sale of the house,” (Helbrecht and Geilenkeuser, 2010, p. 981). They observed that the economic miracle generation was able to accumulate much wealth without any real planning and that homeownership happened incidentally. Younger generations, on the other hand, are more preoccupied, and housing is part of their accumulation strategy because they feel at risk of poverty later on.

Attitudes toward the use of housing wealth depend on age. Younger people see it as a way of acquiring even more real estate in the future, but few consider selling to become tenants when they retire. The pre-reunification generation has the most positive attitude toward selling housing to become a tenant. But even then, the most frequent response was that they will sell when they go into a retirement home. The older generation wants to sell only if they need to because they don’t want to go back to being tenants for fear of being evicted. For all age groups, investing in a house is connected to the idea of building something, and all respondents found the idea of selling it to increase consumption levels unpleasant. The house itself gives status, but emotional attachment to the house seems to develop over time because young people do not mention this aspect. In addition, the legal context surrounding rental contracts is advantageous for renters because it protects them from increases in rent, particularly if they have been long-term tenants. The vast majority of respondents were not familiar with reverse mortgages. When they were explained, most people found it strange to voluntarily go back into debt after having pursued the goal of getting out of debt. There is a marked attachment to being debt-free for all age groups.

The generation gap could come from reforms to the German retirement-income system. Bridgen and Meyer (2014) hold that the changes made since 2001, which aimed to make the system sustainable despite the accelerated aging of the population, changed the very nature of the system. Given that government pension plans have been an integral part of the German social model since 1957, the reforms made it so that workers who lead careers after this date will retire under a system with liberal characteristics. The formula that converts retirement points into value is actually equivalent to a defined-contribution pension plan that provides an annuity whose value (about 42% of the average salary) is just above the poverty line. This risk of impoverishment is also discussed by Tambari (2015) and Seeleib-Kaiser (2015). Seeleib-Kaiser specifically argues that, according to these new terms, the plan automatically excludes people who have not worked from the social retirement protection model.

The German retirement-income model that is based on salary contributions purchasing a retirement that has no guaranteed value seems to have profoundly changed young Germans’ attitudes. Given these circumstances, it is not surprising that they have a different attitude toward the accumulation of assets than previous generations. It would not be surprising to see increased desire for homeownership over time.

5. Retired Canadians' financial health

5.1 Current status

In order to determine the role of home equity in retired Canadians' financial security, it is necessary to understand their financial health as a whole. Current retirees, in many regards, are in enviable financial health, especially compared with previous generations.

Federal and provincial income support measures implemented for the elderly revolve around what are known as the three pillars of the retirement-income system. The first pillar, the old age security (OAS) program, has been in existence since 1952. The right to benefit for this first level of protection is acquired solely by length of residency in Canada, and the value of benefits is independent of income.[23] Since 1967, this amount has been subsidized by the guaranteed income supplement (GIS), an additional benefit paid out only to elderly people with low incomes. As of 2017, the maximum OAS benefit for a single person is $6,942, which can be increased to $10,369 with the GIS. Access to the benefits is universal, but OAS is subject to a 15% recovery tax on annual income over $73,756. Above $119,615, the entire OAS amount is clawed back. The benefits and the eligibility and recovery tax thresholds are indexed to the cost of living in such a way that the purchasing power offered by these benefits remains constant.

Implemented in 1966, the second pillar is intended for workers, and is a government pension plan: the Canada Pension Plan (CPP), and its Quebec analog, the Québec Pension Plan (QPP). Where the first pillar aims to prevent poverty, the goal of the second pillar is to maintain retirees' purchasing power up to a certain income by acquiring the right to benefit through mandatory contributions. As of 2017, the combined employer-employee contribution rate is 9.9% (10.8% for the QPP), which is applied to wage income above $3,500, up to maximum pensionable earnings (MPE) of $55,300. The objective is to replace 25% of career average earnings up to the average MPE for the retirement year and the four previous years. As of 2017, the maximum annual benefit is $13,370. Both the OAS and government pensions are indexed according to a consumer price index. Finally, the third pillar is all registered pension plans (RPP) [24] and individual retirement savings plans (RRSP).[25] These contributions are voluntary, and the values acquired depend on

[23] These benefits are, however, subject to a provision of the *Income Tax Act,* which makes them partially or completely repayable for high-income individuals. In 2016, the rate of reimbursement was 15% of income over $73,756. With income-splitting, the reimbursement threshold for a couple begins at $147,512.

[24] A registered pension plan is a Canada Revenue Agency-registered arrangement offered by an employer or a union that provides pension benefits in the form of periodic payments to retired employees. Since the contributions are deductible in the contribution year and the benefits are taxable in the year in which they are paid out, these plans make it possible to defer taxes on part of workers' total compensation.

[25] An RRSP works on the same principle as an RPP, but on an individual level. RRSP contributions are deductible, and all income accumulated in the plan is usually tax-exempt while it remains in the plan. These funds are taxable only upon withdrawal.

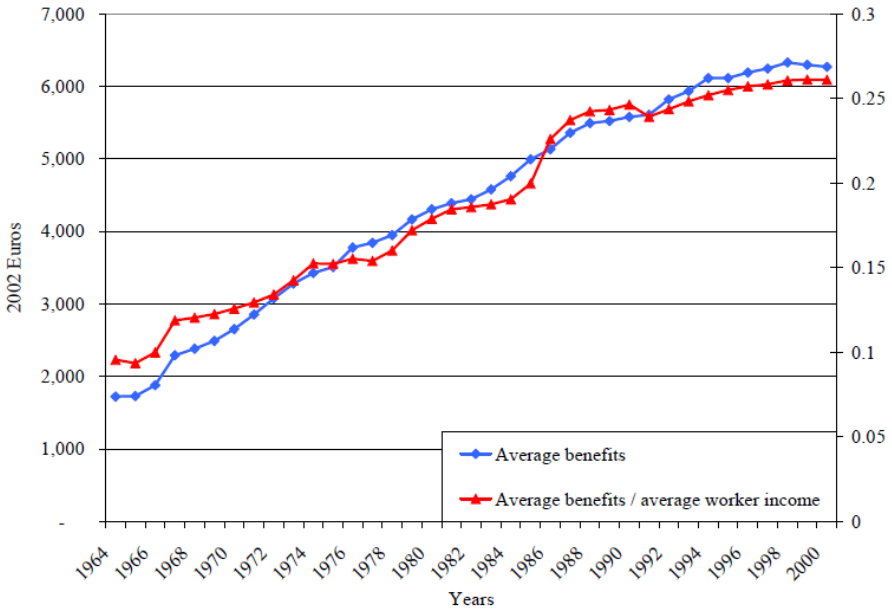
contributions (defined contribution plan) or on salary earned (defined benefit plan). The government encourages these contributions by deferring taxes on contributions and returns until retirement.

A study by Baker, Gruber and Milligan (2009) shows the major effects these social policies have had on retirees' incomes, consumption and welfare. They base their study on various databases[26] and present two types of results: the average amount received by people age 60 and older, and simulations in which the average amount is calculated while fixing certain characteristics such as capital income and family status. When changes are made to the programs, impacts on the value of benefits are felt progressively as the years that grant the right to benefit go by. Thus, changes implemented in the 1960s did not take full effect until several decades later.

Figure 9 shows this progressive evolution in constant 2002 Euros. The average value of benefits has been increased regularly and has plateaued since the 1990s at around EUR6,200[27] (close to CAD9,000). The same figure also shows (right-hand axis) that these benefits represent an increasing percentage of the average salary and that this percentage is stabilized around 25% of the average salary, the plan's official goal. Figure 10 shows the average benefit paid at different ages. At age 60, the benefits were non-existent until CPP/QPP early retirement was introduced in the mid-1980s. At age 65, the impact of the GIS appeared at the end of the 1960s. Benefits at age 70, 80 and 90 remained similar until the mid-1970s when 70-year-olds began to receive CPP/QPP benefits. That same cohort started to post this income at age 80, one decade later. Finally, in addition to movements induced by the introduction of different retirement-income system components, there is a progressive increase in the value of annuity, which is a result of the progression in salaries, which, in return, affects the value of benefits. Baker et al. (2009) conclude that even when factoring in reactions to labour supply and private saving, these programs have helped increase incomes and reduce poverty among the elderly.

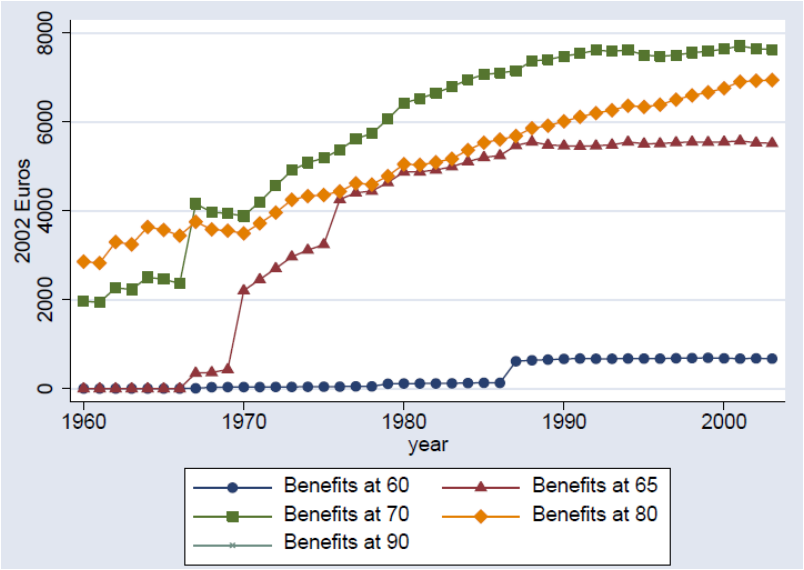
Figure 9 Average income security benefits among the elderly

[26] For income, they used several editions of the Survey of Consumer Finances and the Survey of Labour and Income Dynamics. Consumption was based on various editions of the Family Expenditure Survey, while data on well-being came from several editions of the General Social Survey.
[27] In order to facilitate international comparisons, the study presents values in Euros.



Source: Baker, Gruber and Milligan (2009), p. 32.

Figure 10 Value of benefits at different ages by retirement year



Source: Baker, Gruber and Milligan (2009), p. 33.

In his review of retirement incomes in Canada, Cross (2014) argues that these incomes are generally better than we usually acknowledge. Retirees' main asset is billions of dollars in assets outside of formal retirement plans, the largest part of which is equity in houses owned by households. The other is informal support offered by families, which is generally not quantified in studies. Cross also says that prolonged participation in the labour market offers the elderly an additional way of obtaining adequate retirement income. For example, Dodge, Laurin, and Busby (2010) simulate that by delaying retirement from age 63 to 67,

the savings rate required during working life to replace 70% of income decreases by almost half, from 16% to 9%.

According to Osberg, Moore and MacDonald (2014), the 70% target replacement rate is a very poor guide because the income required to maintain a stable level of consumption after retirement depends on numerous personal circumstances. Cross provides several arguments that make the case that this replacement rate is perhaps excessive. The main signal of this is that the oldest retirees are still saving. The overall picture is consistent with the fact that Canadian retirees enjoy an adequate level of income. In general, the system successfully protects current retirees against poverty, since only 4% of them are under the low-income threshold, compared with an average of 13% across OECD countries.[28] Given that the poverty rate among people age 65 and older was 44% in 1961, Osberg (2001) argues that the fight against poverty among the elderly in Canada has been fruitful.

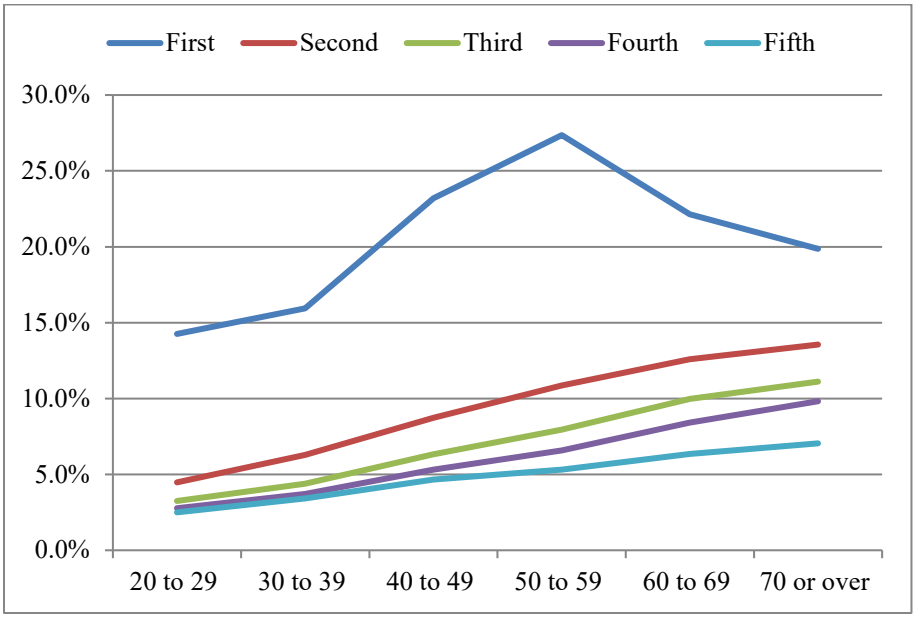
5.2 The effect of homeownership on retirees' incomes

Returns on home equity improve retirees' circumstances. To estimate this impact, Brown, Hou and Lafrance (2010) combined two methods for measuring the unit's imputed rent—cost of use and imputed rents—as well as two sources of data, the 2006 Survey of Household Spending (SHS) and the 2006 Census. They were thus able to measure impact on net income by age group and income quintile. The source of the data had little impact on the results, and we are presenting the results based on the SHS. According to the first method, returns on home equity add on average $6,544 to the net income of homeowner households in the 60–69 age group, and $5,793 to households in the 70+ age group, respective increases of 13.2% and 15.1%. The effect on the pre-retirement income replacement rate is lower because pre-retirement income also includes returns on home equity. However, housing does increase the replacement rate from 55% to 58% (income at age 70+ compared to income at age 50–59).[29] Although higher income quintiles own more valuable housing and have higher returns on home equity, figure 11 shows that housing improves the incomes of lower income quintiles and the most elderly relatively more. Thus, the improvement is more than 20% for the first quintile, almost 14% for the second quintile, but only 7% for the fifth quintile.

[28] The poverty threshold is defined here as an income that is less than half of the median income. Only four countries have poverty rates that are lower than Canada's: Luxemburg, the Czech Republic, the Netherlands and New Zealand.

[29] They also calculate a replacement rate adjusted for the size of the household using a pension adjustment factor, which effectively increases the income replacement rate.

Figure 11 Percentage increase in homeowners' net income by age and income quintile



Source: Brown, Hou and Lafrance (2010) and author's calculations.

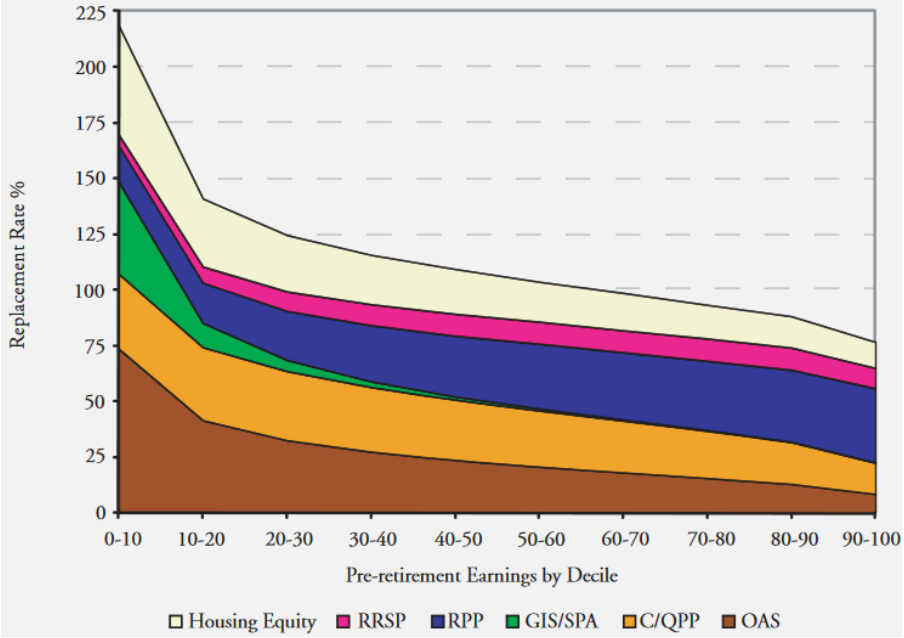
Disney and Whitehouse (2001) and Sierminska, Brandolini and Smeeding (2007) show that retired Canadians' incomes compare favourably on an international level. LaRochelle-Côté, Myles, and Picot (2008) came to the same positive conclusion in a study that confirms the OECD results that were presented above. The income replacement rate during retirement is almost 100% for low incomes and more than 80% at the median income. It decreases more significantly only for the highest incomes. However, they noted that private pension plans played a significant role in these results. Since fewer young workers are covered by pension plans, future retirees may have less generous income protection, and the situation will deteriorate for higher incomes in particular.

5.3 Future evolution of retirees' financial health

Moore, Robson and Laurin (2010) use a simulation tool developed by Statistics Canada (LifePaths) to project the evolution of pre-retirement-consumption replacement rates for retirees' incomes according to the year of retirement, up to the 2040s. They integrated returns on home equity into their forecast using a method inspired by Brown, Hou and Lafrance (2010), but added an additional consumption flow by assuming that retirees will extract 50% of the equity in the homes over the course of retirement. Figure 12 shows the replacement rate by income source according to decile income level for the 2006 cohort of retirees. The strong distributive effect of OAS and GIS benefits (in brown and green, respectively), the rather flat effect of CPP/QPP (ochre), the progressive effect of private pension plans (blue) and the regressive effect of home equity are all clearly shown. This

means that in proportion to the pre-retirement consumption level, housing has a decreased capacity for replacing consumption when pre-retirement income is higher.

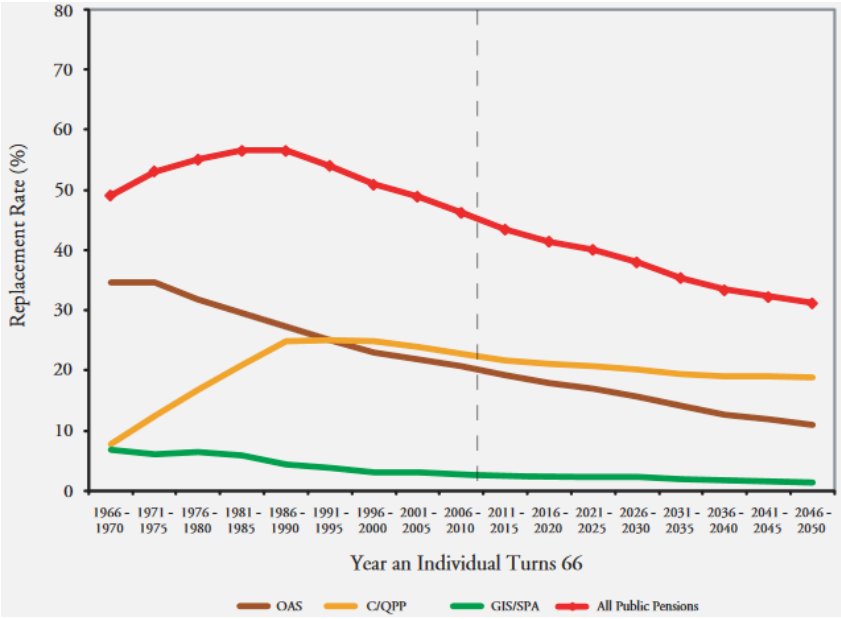
Figure 12 Pre-retirement consumption replacement rates (%) by source of earnings and pre-retirement earnings decile (2006–2010 retirement cohort)



Source: Moore, Robson and Laurin (2010), p. 8.

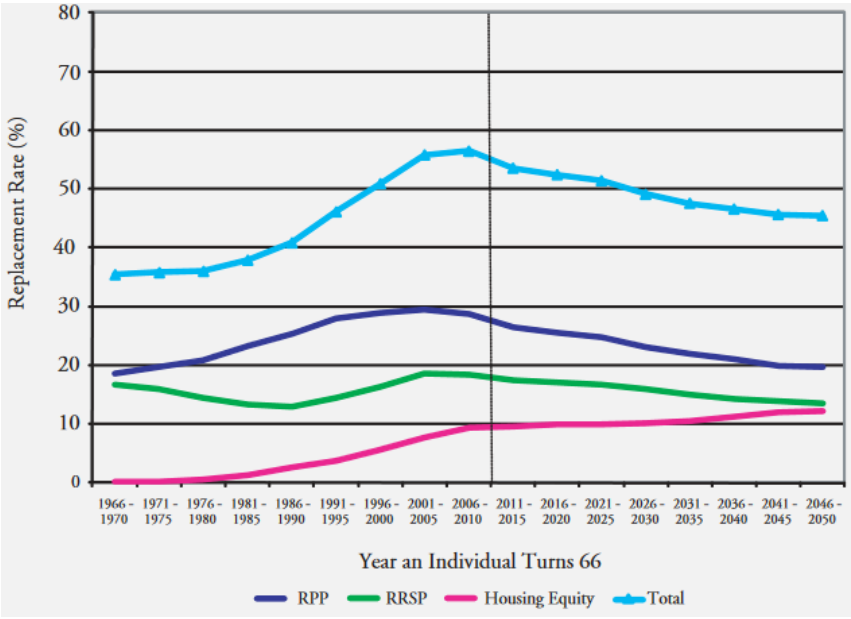
However, the simulation model shows that the replacement rate is highest for this generation, not only compared to previous generations, but also compared to future generations. Two historical effects are involved, and their impact is shown in Figure 13. First, OAS and the GIS are indexed according to the consumer price index (CPI). Since salaries have increased faster than the CPI, the OAS replacement rate, which was at 35% of the average salary in the 1960s, is currently only 20%. If the simulations are correct, this rate should continue to drop, reaching less than 15% in 30 years. For a while, the impact was more than counterbalanced by the progression of CPP/QPP pension benefit rights, since generations that started working before these plans were implemented could acquire only partial access. This, however, is no longer the case. In total, Canadian government pension plans, which replaced 55% of pre-retirement income in the mid-1980s, currently offer only a 45% replacement rate. This replacement rate will continue to diminish in the future, and will be a little over 30% in barely 30 years, which will make it one of the lowest rates among OECD countries (OECD, 2013). Figure 14, which shows the income that Canadian households' privately held assets will provide, concludes this analysis. It is clear that the impact of reduced coverage from private pension plans amplifies the decrease in consumption protection offered by government pension plans and that only home equity will have an increased capacity to support consumption during retirement.

Figure 13 Pre-retirement consumption replacement rates from government pension plans by retirement year in Canada



Source: Moore, Robson and Laurin (2010), p. 10.

Figure 14 Pre-retirement consumption replacement rates from private assets by retirement year



Source: Moore, Robson and Laurin (2010), p. 11.

In 2016, an agreement was reached between the federal and provincial governments in Canada to progressively increase the CPP income replacement target, starting in 2019.[30] This target, which is currently 25% of career average earnings, will be progressively increased to 33.3%. This increase will be funded in two ways: first by increasing the contribution rate from 9.9% in 2018 to 11.9% by 2023, and second by adding an income range that will be subject to a combined contribution rate of 8% up to 114% of maximum pensionable earnings. According to the simulations, average- and high-income households will see the greatest increase in income protection from these measures, which are the households with the lowest replacement rates.[31] If it is implemented, this increase will correct part of the loss of protection forecast by Moore, Robson and Laurin.

The persistence of low returns in recent years should also be taken into account. MacDonald and Osberg (2014) studied their impact and, more precisely, the impact of the financial crisis, on retired Canadians' financial health using a micro-simulation model. If it is assumed that the savings rate and the retirement age do not change, then retirees could lose up to half of the yield from their personal savings. Housing is thus a source of protection against the hazards of the financial markets that will need to play an increasing role in income protection for future retirees.

5.4 Housing's contribution to retirees' wealth

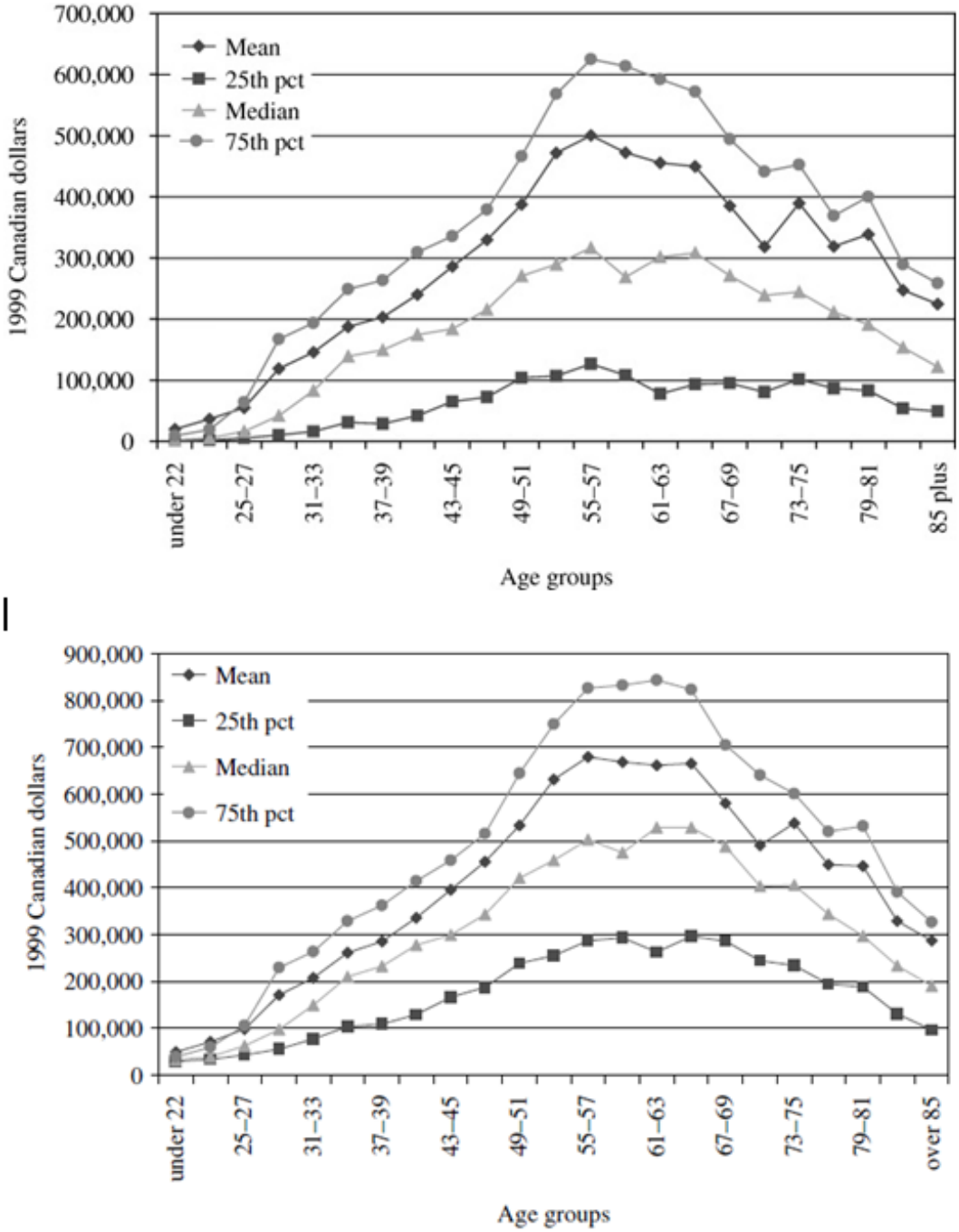
Retired homeowners are sometimes called "income poor and asset rich," meaning they own many assets but receive little liquid income. Retirees' financial resources effectively also take on a wealth dimension, and we will see which assets Canadian retired households hold. Milligan (2005) studied this question on the basis of data from the 1999 Survey of Financial Security (SFS), which he augments by adding income security wealth (ISW), which is the present value of acquired rights at each age for the CPP/QPP and OAS.[32] The value of assets according to age for various wealth deciles is shown in figure 15, the top part without ISW and the bottom part with it. If ISW is excluded, peak wealth occurs at age 57 and reaches a value of about $300,000 at the median distribution point. This value is significantly less than the average value ($500,000) because wealth is unequally distributed (wealth is 6 times larger in the 75th percentile than in the 25th percentile). As of age 60, the principal residence accounts for about 33% of total assets, and other real estate assets account for about 4%. These proportions remain stable at older ages. A regular decrease in the value of assets is observed after age 60.

[30] Quebec did not indicate that it intended to harmonize the QPP with newly proposed CPP regulations.
[31] See "Backgrounder: Canada Pension Plan (CPP) Enhancement," Department of Finance Canada, http://www.fin.gc.ca/n16/data/16-113_3-eng.asp.
[32] Since CPP/QPP rights are obtained through contributions from employment income, this wealth depends on employment history. Milligan used a calculation developed in a previous study that also factors in the OAS recovery tax for this purpose.

When ISW is included, peak wealth is delayed by five years, occurring at age 62 (retirement age), which is in line with the wealth accumulation process predicted by the LCH. The inclusion of ISW increases wealth by just over $200,000 for almost all of the distribution. At the median point, the peak thus reaches $530,000 (an increase of 75%), while it triples in the 25th percentile, from $100,000 to $300,000. Milligan carries out a statistical analysis of the decrease in wealth, correcting for the selectivity bias caused by age and the cohort effect, and concluding that the only wealth components that decrease with age for retirees are ISW and the value of retirement pensions. Interestingly, the value of housing does not decrease with age, a result that is similar to the conclusions of European and American studies. Milligan's study is important because it shows the importance of ISW to retirees' wealth and its contribution to reducing inequality.[33]

[33] One component of the ISW that is not factored in is the present value of health care provided by the state. This value is difficult to quantify, but it is undoubtedly considerable.

Figure 15 Value of Canadian households' portfolios: 1999



Note: The first graph shows the capitalized value of acquired rights without the ISW, and the second graph shows the capitalized value of acquired rights with the ISW.
Source: Milligan (2005)

The data presented by Milligan is based on the 1999 SFS. Two other surveys have since been conducted (2005 and 2012), and it is interesting to look at this more recent data to see

whether the composition of retirees' wealth has changed. The results are shown in table 3. In broad strokes, the values almost doubled between 1999 and 2012, but the composition of wealth did not change significantly. Total assets grew from $986 billion to $2,260 billion, an increase of 110%. During the same period, the value of principal residences increased from $272 billion to $694 billion, a growth rate of 129%. The proportion of principal residences in total assets thus increased slightly, from 27.6% to 30.5%, between 1999 and 2012. You can also see that mortgages on principal residences tripled, reaching almost $32 billion. This absolute increase is large, but mortgage debt remains low compared to the value of residences, at only 4.6%.

Figure 16 Portfolios of individuals 65 years of age and older (current dollars)

	1999	2005	2012
Financial assets	**$552,304**	**$727,097**	**$1,152,342**
- RRSPs, RRIFs, LIRAs and others	$124,689	$151,258	$291,576
- RPPs	$231,322	$329,027	$504,128
- Deposits in financial institutions	$94,650	$123,651	$130,207
- Mutual funds and investment funds	$30,479	$44,720	$86,908
- Stocks	$38,309	$46,883	$76,879
- Savings bonds, TFSAs and others	$16,032	$16,941	$23,659
- Other financial assets (6)	$16,823	$14,617	$38,985
Non-financial assets	**$434,136**	**$630,258**	**$1,108,048**
- Principal residence	$271,773	$413,517	$694,048
- Other real estate	$51,658	$89,885	$193,850
- Vehicles	$23,311	$25,795	$40,331
- Other non-financial assets (7)	$47,103	$56,324	$66,786
- Business equity	$40,292	$44,737	$102,336
TOTAL ASSETS	**$986,440**	**$1,357,355**	**$2,260,390**
Total debt	**$19,593**	**$30,711**	**$79,160**
- Mortgage on principal residence	$9,640	$11,966	$31,732
- Mortgage on other real estate	$3,729	$0	$14,117
- Other debt	$6,224	$18,745	$33,311
Net worth	**$966,847**	**$1,326,644**	**$2,181,230**

Source: CANSIM, Table 205-0002 and author's calculations.

How does this wealth compare to retirees' wealth in other countries? Sierminska et al. (2007) use data from the Luxembourg Wealth Study to analyze retirees' situations in seven developed countries (Germany, Canada, Finland, Italy, the United Kingdom, Sweden and the United States) from 1999 to 2002 to compare American retirees with their counterparts in other countries and assess the role of housing as a source of financial security for retirees in dealing with underfunded public systems. Numerous results are presented, and we will concentrate on certain key indicators. Compared to other countries in the study, Canadian

retirees have a relatively high level of income (113% of the average value) but own assets of relatively low value (71% of the average). If we focus on housing, the proportion of homeowners is high in Canada, but the value of housing is rather low because, when it is normalized using an equivalence scale (the square root of the number of members in the household), it is equal to USD61,936, or only 72% of the average. The highest housing value is in Germany, which is surprising given the low proportion of homeowners and a rather sluggish housing market.

In their conclusion, Sierminska et al. (2007) asked themselves whether encouraging higher homeownership rates could improve actual income for the next generations of retirees who will have greater financial needs because of increased life expectancy. Two obstacles must be addressed. First, ways of accessing housing equity that are superior to the current, underutilized wealth extraction tools must be identified. Second, they argue that promoting homeownership will never provide sufficient assistance to low-income households because their housing equity is too low. In this regard they recommend following the Canadian approach, which provides a solid social security net that guards against poverty among the elderly. "Governments in rich countries ought to provide a safety net for the elderly, with adequate and well-maintained minimum social security benefits (as is done in Canada) to ameliorate income and asset vulnerability" (Sierminska et al., 2007, p. 22).

5.5 Real estate gains and retirees' consumption

The effect of changes to housing prices, which is often called the housing wealth effect, has been the subject of much macroeconomic research. It's a known source of conjunctural economic fluctuations that have significant effects on consumption. It is thus interesting to see whether the appreciation of real estate assets helps support retirees' consumption, because the literature shows that, on the whole, consumption is more sensitive to housing wealth than to changes in the price of financial assets (Bostic, Gabriel and Painter, 2009; Kishor, 2007). However, despite the significant increase in housing prices in Canada and high homeownership rates among retirees, this does not seem to be the case. We will see why.

Consumption's great macroeconomic sensitivity is mainly explained by the fact that an increase in housing prices allows constraints on borrowing to be relaxed (Cooper, 2013; Iacoviello, 2011). But these constraints mainly limit consumption for people at the beginning of their working lives who, because of the modest size of their current income, consume less than would be considered optimal based on their permanent income. In addition, these conjunctural effects affect employment, which is particularly sensitive for young people. Thus, it is mainly younger people's consumption that reacts to housing prices. The conjunctural effect does not exist for people who have left the labour market, and borrowing constraints do little to limit their consumption.

We also remark that an increase in real estate prices does not boil down to a pure wealth effect, as is often argued in the literature (Buiter, 2008). Changes in housing prices that result from factors other than pure speculation do not cause an aggregated wealth effect.[34] Rather, they produce a substitution effect between the house and the rest of consumption because of a change in relative price. This same change in price will, however, modify the distribution of wealth, improving the net position of people who own more housing than they consume and negatively impacting the situation of those who consume more than they own. The generational effects are unequivocal: an increase in housing prices increases the overall wealth of retirees because they own a lot of real estate assets and will consume them for less time, while impoverishing younger people who have a low homeownership rate and who will consume housing for a long time to come. Setting the conjunctural effects aside, can we believe that retirees' consumption will increase with housing prices because of the wealth effect? The international observations we have seen show that retirees are reluctant to exchange their house to improve their level of consumption and tend to hold on to their house until an event changes their living conditions. It is thus unlikely that their consumption will be sensitive to changes in housing prices. Furthermore, the cost of acquiring pensions must be taken into account to establish how much current consumption can be acquired from housing wealth. The next section will examine this angle.

5.6 The potential for converting housing wealth into consumption

In the literature, the effects of changes in housing prices on consumption are treated based on the assumption that the interest rate is constant. But this is not always the case, and the price of housing often changes in reaction to interest rate fluctuations. Current low interest rates increase the cost of acquiring annuities, meaning that more wealth is required to support consumption. For retirees who are interested in converting specific wealth into permanent consumption, another effect must also be considered: increased life expectancy. When taken into account, these effects can temper the effect of housing wealth. The following calculations show that when they are factored in, they cancel out the possibility of using the increase in the value of housing observed since 1999 to improve retirees' level of consumption.[35]

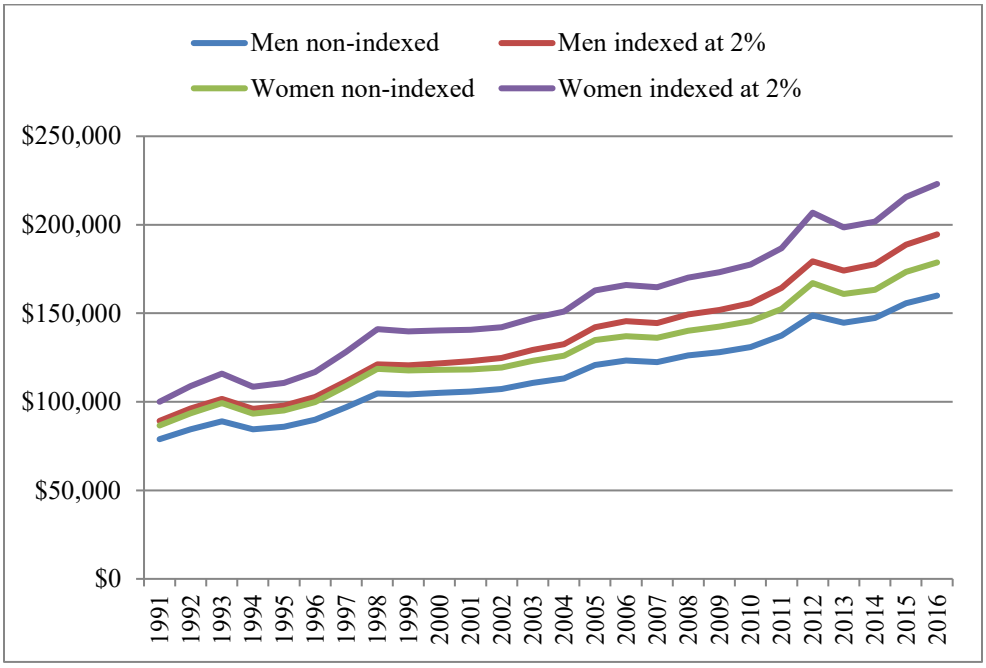
Let's first consider life expectancy. Between 1991 and 2016, the life expectancy of a 65-year-old man increased from 15.7 years to 19.3 years (+23%), and the life expectancy of a 65-year-old woman increased from 19.9 years to 22.1 years (+11%).[36] At an interest rate of zero, the rise in life expectancy alone increases the cost of acquiring a life annuity upon retirement by 23% for men and 11% for women. Of course, the interest rate is not zero,

[34] This is true insofar as houses are owned exclusively by residents. A negative wealth effect can occur if non-residents own property in a country.
[35] These are original calculations and do not come from published studies.
[36] The data on life expectancy comes from Statistics Canada.

and the effect on the current value decreases as soon as a positive interest rate is applied. Interest rates have, however, diminished greatly. Between 1991 and 2016 the average interest rate on long-term Government of Canada bonds decreased from 9.72% to 1.92%, increasing the cost of acquiring a fixed-term annuity. An estimation of the joint effects of these two changes can be obtained by calculating the amount required to purchase a consumption flow at age 65 for a term equal to the life expectancy at a discount rate equal to the average interest rate on long-term Government of Canada bonds.[37] In order to show how much it costs to account for inflation, the cost of an indexed annuity with a 2% annual interest rate, the Bank of Canada's long-term target rate since the early 1990s, was also calculated. Figure 17 shows these effects on the cost of a $10,000 annual annuity. Between 1991 and 2016, the cost of the annuity more than doubled. The least expensive annuity, the non-indexed annuity for a man, increased in rounded value cost from $79,000 in 1991 to $160,000 in 2016. During the same period the cost of the most expensive annuity, the indexed annuity for a woman, increased from $100,000 to $223,000.

[37] Financial institutions and pension funds use a higher discount rate, reflecting an investment strategy which includes more risky investment categories. The assumptions I make here still allow for a reasonable estimation of the impact of the decrease in interest rates.

Figure 17 Cost of acquiring a $10,000 annuity at age 65



Source: CANSIM and author's calculations.

It is interesting to use calculations approximating those made by Milligan and add the value of government pensions to wealth for 2005 and 2012. In the absence of detailed data such as the data he used, which factored in the distribution of household by type and age, the following calculations must be treated with caution. They will still illustrate that, on average, housing wealth has not progressed sufficiently to enable the purchase of a constant actual consumption flow since 1999.

First of all, we will express retirees' wealth on a per capita basis by dividing the portfolio components by the age-65-plus population segment. In order to properly identify the net values, the corresponding debts are then subtracted from the assets. The results are presented in table 3. Between 1995 and 2012, per capita assets increased from $260,982 to $437,457, net worth increased from $255,798 to $422,137, the value of the principal residence increased from $69,352 to $128,179 and the value of financial assets minus debts increased from $144,476 to $216,568. How have the future values of government pensions changed? Since these annuities are indexed, table 3 presents this value according to the interest rate and life expectancy for each of the three years for an indexed annuity of a term equal to a man's life expectancy.[38] The government pensions acquired at age 65 were worth less than the net financial assets in 1999 ($131,138 vs. $144,476) but were worth much

[38] In 2016, the OAS was worth $6,962 and the maximum benefit was $13,370. The price index for comparing a pension having the same real value in 1999 as in 2016 is 72.35. For 2005, it is 83.33, and for 2012, it is 94.78. I used an indexing factor of 2% per year.

more in 2012 ($345,215 vs. $216,568). In fact, their value even surpassed the sum of net financial assets and equity in the principal residence. If the value of government pensions ($345,215) is added to the net worth of households' portfolios ($422,137), the average total value obtained is $767,352. Since the net value of the principal residence is $128,179, close to 17% of the total, it is erroneous to believe that the residence is retirees' main asset.

Table 3 Average portfolio value of individuals age 65 and older (current $)

	1999	2005	2012
Total assets	$260,982	$322,757	$437,457
Total debts	$5,184	$7,303	$15,320
Net worth	$255,798	$315,454	$422,137
- Net value of the principle residence	$69,352	$95,482	$128,179
- Net value of other real estate	$12,681	$21,373	$34,784
- Net value of other non-financial assets	$29,289	$30,164	$40,536
- Financial assets minus other debts	$144,476	$168,435	$216,568
Maximum CPP/QPP value at age 65	*$86,318*	*$158,421*	*$227,228*
OAS value at age 65	*$44,820*	*$82,260*	*$117,987*
Value of government pensions	*$131,138*	*$240,681*	*$345,215*

Source: Survey of Financial Security and author's calculations.

Table 4 presents a final calculation in order to determine home equity's capacity to support consumption. Still factoring in male life expectancy and the interest rate, the first column shows the annual indexed consumption that could be purchased each year if housing equity at age 65 corresponded to the average value. In current dollars, the indexed annuity increased from $5,751 in 1999, to $6,715 in 2005, to $7,148 in 2012. If corrected for the change in purchasing power of money and expressed in constant 2016 dollars, the actual value of consumption increased slightly between 1999 and 2005, from $7,948 to $8,058, but then decreased to only $7,542 in 2012. In short, when increased life expectancy and the reduction in interest rates are taken into account, the increase in the value of housing equity was not sufficient to compensate for the cost of acquiring indexed annuities.

Table 4 Income acquired at age 65 from average net home value

	1999	2005	2012
In current $	$5,751	$6,715	$7,148
In 2016 constant $	$7,948	$8,058	$7,542

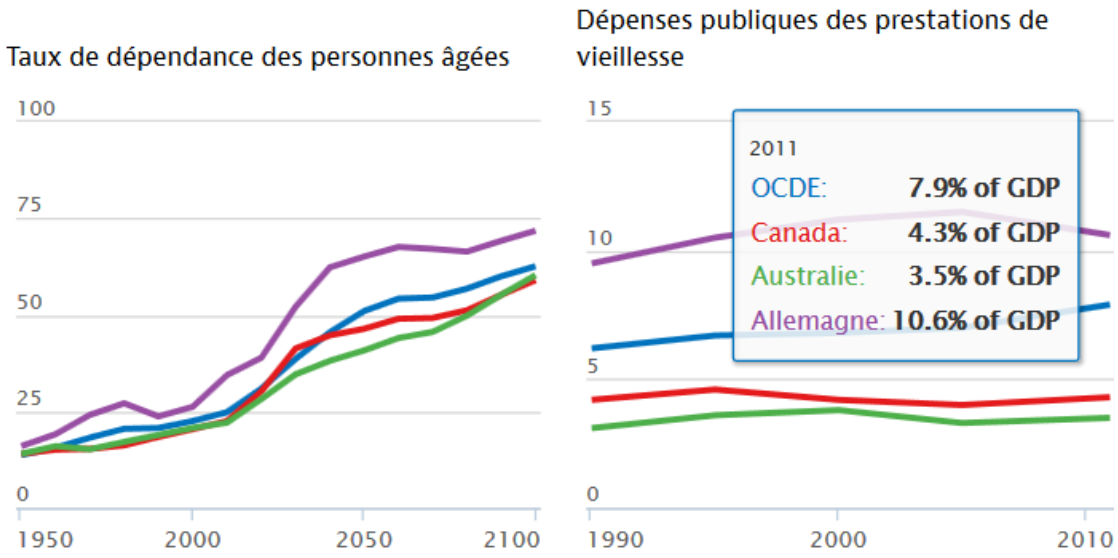
Source: Survey of Financial Security and author's calculations.

6 Retired Canadians' future financial security

6.1 Viability of the Canadian retirement system

While other countries, including, as we have seen, Germany, have had to reform their retirement-income systems to contain rising costs, Canada is not confronted with this situation. Government spending on old age benefits accounts for a relatively low portion of GDP—4.3% in 2011—compared with an average of 7.9% across OECD countries and 10.6% in Germany. Only Australia spent less than Canada (3.5%), with results that, as we have seen, are less successful in terms of preventing poverty among the elderly. Furthermore, government spending on old age security benefits as a proportion of GDP has remained stable in Canada despite an increase in the old age dependency ratio[39] (figure 18). In addition, this proportion should not increase considerably despite the retirement of the baby boomers (figure 19).

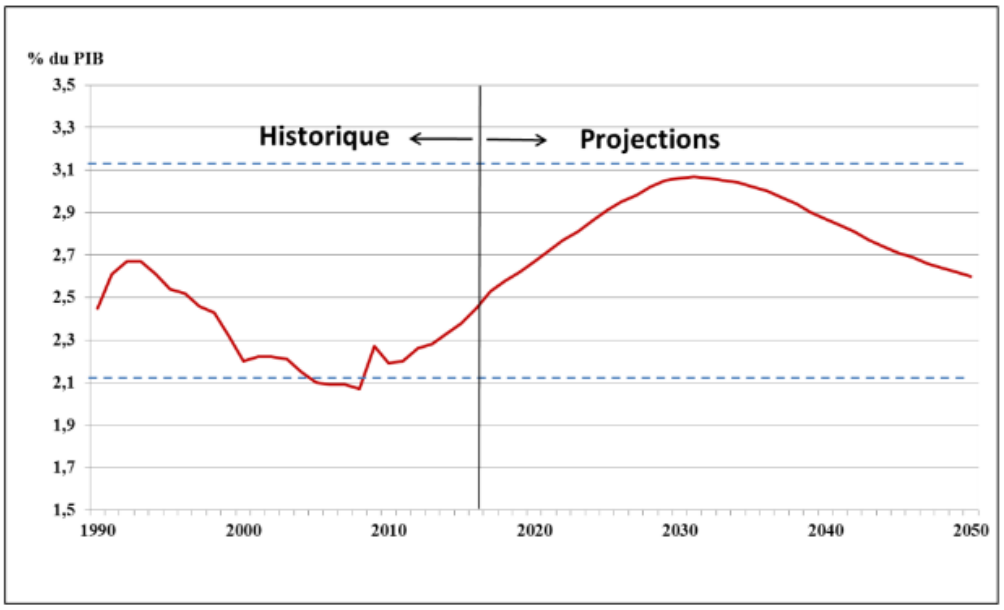
Figure 18 Evolution of government retirement-income system indicators: Germany, Australia, Canada and OECD countries



Source: OECD, http://www.oecd.org/pensions/oecd-pensions-at-a-glance-19991363.htm, consulted July 4, 2017.

[39] The old age dependency ratio is defined as the ratio of the elderly population to the working-age labour force (age 15–64).

Figure 19 OAS and GIS expenditures as a percentage of GDP



Source: Office of the Superintendent of Financial Institutions (2016), *Viability of Canadian Retirement Income System: Political Consensus and Sound Actuarial Advice*, p. 5, reproduced from the 13th Actuarial Report on the Old Age Security Program, 2012.

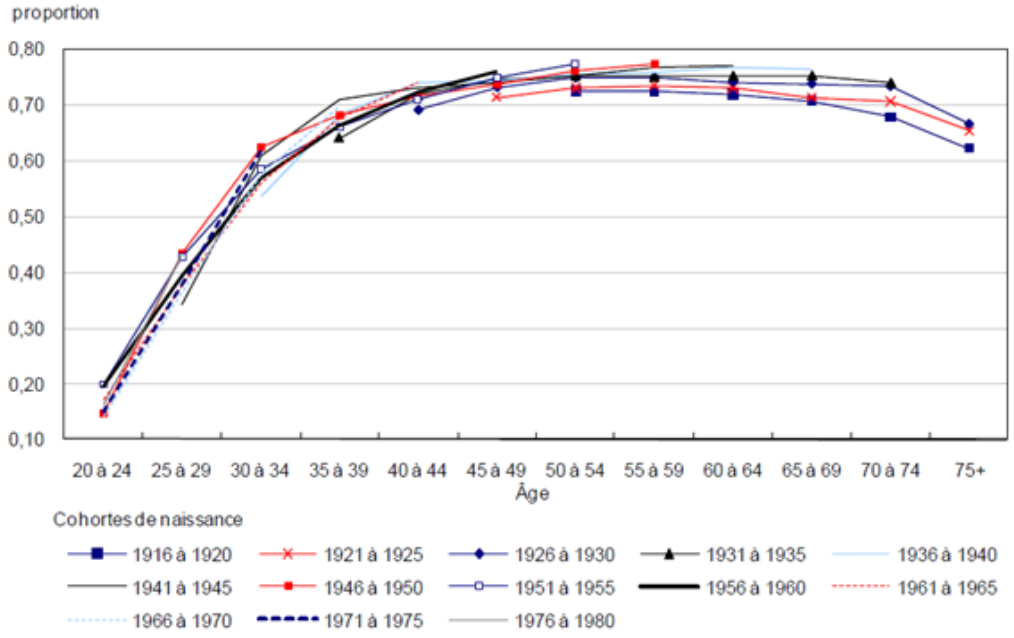
How is Canada successfully containing costs? It is partly due to an immigration policy that ensures growth in the working-age labour force such that the old age dependency ratio increases less quickly. But it is primarily explained by the fact that the OAS and the GIS are indexed to the CPI and not to salaries. With real wages trending upward, the increasing weight of the elderly in the population is thus partly counterbalanced by the fact that benefits make up a smaller and smaller fraction of pre-retirement income. Government spending also remains low because, unlike other countries (especially Germany), only protection against poverty affects public finances. The role of earned-income replacement is played by the CPP/QPP, for which contribution rates were progressively increased over the past two decades in order to establish a reserve to help deal with an aging population while ensuring a certain degree of intergenerational equality. The creation of this reserve changed the nature of the plan, which, although originally unfunded, has become partially funded. According to the most recent actuarial assessments, the reserve is such that current contribution rates could be maintained until at least the middle of the 21st century and the plan would still be capable of replacing 25% of average earnings. Contributions may be increased in order to raise the average earnings replacement objective to 33.3%. At this threshold, and taking OAS into account, retired Canadians would have access to income protection thanks to increased government pensions, but such protection would remain less generous than the protection offered in many European countries where the long-term viability of pension plans is problematic.

6.2 The role of housing in future retirees' income

Erosion of the protection provided by registered pension plans is the main medium-term risk for future retirees, despite the planned increase to the CPP. Fewer Canadians participate in such plans, and the vast majority of those who do are in defined contribution plans. The return and longevity risks are thus assumed by contributors. Since the interest rate should remain low, and life expectancy should continue to rise, retirees will have to accumulate more wealth outside of retirement plans than ever before to maintain their pre-retirement standard of living. What role does housing play in this equation? And what policy would be appropriate for helping households accumulate more wealth, while factoring in the pressure that population aging puts on public accounts? We will focus on these two questions.

First, as figure 20 shows, the profile of the homeownership rate according to the age of the head of household for younger generations is comparable to that of previous generations (Hou, 2010). It is reassuring to observe that, in all likelihood, future retirees will be homeowners in the same proportion as current homeowners, and should consequently have comparable housing equity upon retirement.

Figure 20 Ownership rates by age of head of household

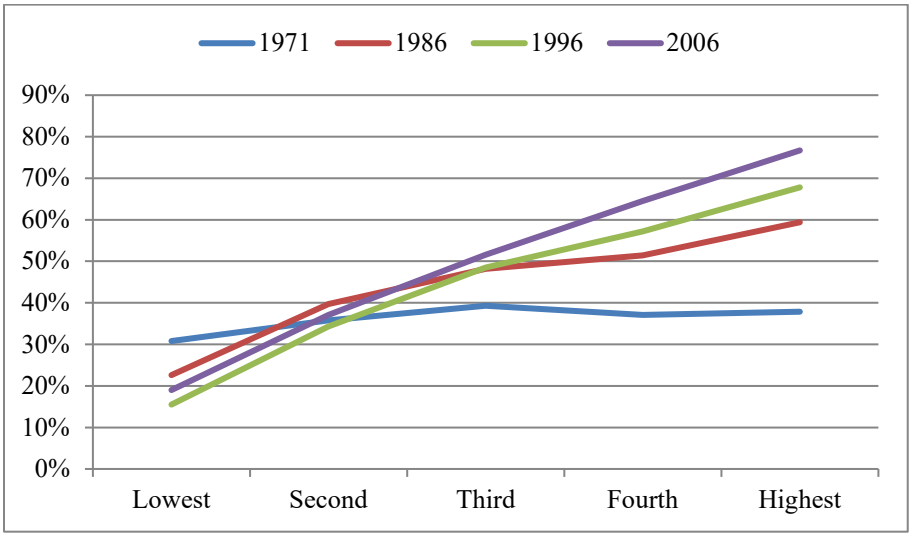


Source: Hou (2010), p. 31.

This relative stability of the vital cycle of homeownership masks the fact that an important change in the link between the homeownership rate and household income has occurred. As figures 21a and 21b show, income had relatively less impact on homeownership in the 1971 Census. At that time, the homeownership rate in the 25–34 age group varied between

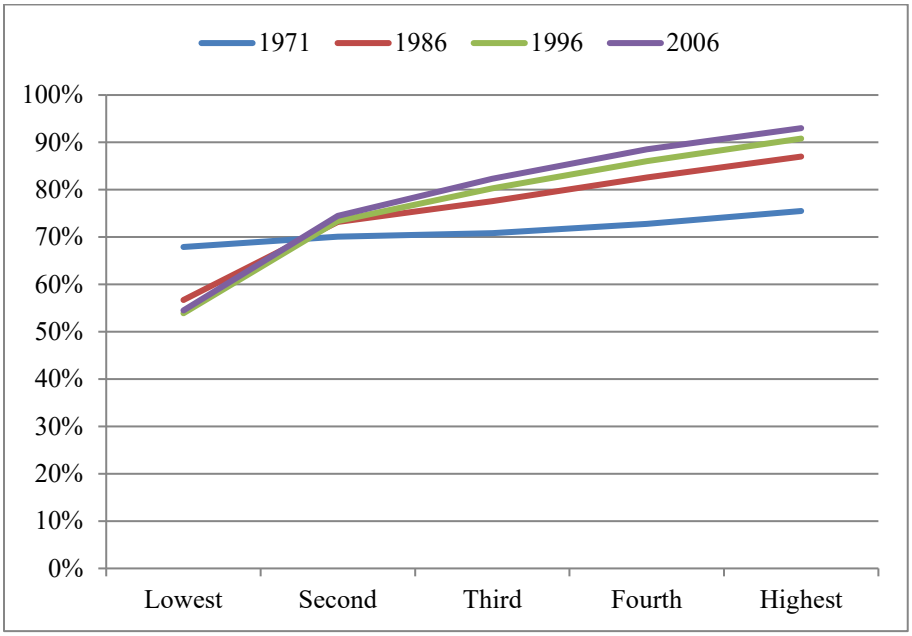
30% and 40%, regardless of income quintile. In the 55–64 age group, the rate varied between 68% in the first quintile and 76% in the fifth quintile. However, subsequent censuses up to 1996 showed a decline in the homeownership rate in the lowest quintile, and an increase in higher quintiles across all age groups. Between 1996 and 2006, the homeownership rate increased in all income quintiles, but the largest increase was among the highest incomes. Thus, over 90% of households that reached retirement age in 2006 were homeowners. This proportion was 75% starting at the second decile. Although only two age groups are presented here, census data shows that the proportion changes little, even for the 75+ age group. Given that income is an increasingly important variable for homeownership, owning a home to help replace household income seems to be a strategy that could be helpful, especially for average- and high-income households.

Figure 21a Homeownership by income quintile: age 25–34



Data source: Hou (2010), Table 1, p. 17.

Figure 22b Homeownership by income quintile: age 55–64



Data source: Hou (2010), Table 1, p. 17.

This change in behaviour has an impact on retirees' income distribution. Moore, Robson and Laurin (2010) observed that imputed rent from housing had a greater capacity to replace pre-retirement consumption in the lowest income deciles for the 2006–2010 generation of retirees. Homeownership thus contributed to reducing income inequality among the elderly. These results were observed for the generation that was 25–34 years old in 1971, whose homeownership profile in relation to income was relatively flat. With the ownership of housing wealth increasingly linked to income, the ability of implicit rent to replace pre-retirement consumption will decrease for low-income households and increase for high-income households, increasing standard-of-living inequalities among retirees.[40]

The broader issue is establishing whether or not housing is an asset that should be favoured in the accumulation of retirement wealth. In his study of pension reform in Germany, Bonin (2009) discusses the pertinence of using a form of retirement savings to make a down payment on the purchase of a house, a measure that was recently introduced in Germany to encourage homeownership, and which seems to be similar to the Home Buyers' Plan:

> The idea behind this measure is that private home owners require less income in old-age because their property creates a return either in terms of rent-free lodging or the possibility to liquidate the asset. Yet...it is far from clear that investment into a private

[40] The decrease in the homeownership rate in low-income deciles is in line with the fact that low-income individuals can now count on government pensions to replace all of their income during retirement, so they have less need to accumulate assets during their working lives.

> dwelling creates a return comparable to that of an investment on the financial assets. At least both housing prices and rent tend to come under pressure as demographic ageing is associated with population decline, unless the trend of growing housing demand per capita would counterbalance the demographic trend. Furthermore there are hardly any possibilities to hedge the investment risk associated with a single private dwelling, in contrast to the diverse possible diversification strategies on financial markets. (Bonin, 2009, p. 11)

Bonin's reluctance merits reflection on more than one level. His first concern can be summarized as follows: is it necessary to increase the value of acquired housing in order to amass a larger portfolio for retirement if it leads to consuming housing services that exceed needs, increasing portfolio risk and reducing the portfolio's liquidity? In addition, Bonin points out that the forces that drove interest rates down are rooted in population aging, a factor that, in the long term, will also weigh on real estate returns (Manchester, 1989). Other elements must be taken into consideration. As we have seen, increased retirement income inequality is a likely consequence of developing financial security through asset accumulation. Also, carefully considered housing policy must account for the fact that developing financial security through asset accumulation is also a political issue. If homeowner households develop more individualistic values and become more reluctant to accept taxes that aim to ensure income redistribution, especially for the elderly, income inequality among retirees could grow even more than the direct measures resulting from the contribution of implicit rent to income suggest. There are also financial risks to trying to expand homeownership to households with incomes that are insufficient for saving to make a down payment. The risk, as the unfortunate experience in the United States has shown, is the introduction of a potential conflict between increased homeownership and financial stability. In doing so, all assets held by households would be put in danger of becoming more risky (Cerutti, Dagher and Dell'Ariccia, 2017).

Instead of attempting to increase the weight of real estate in the portfolio, what can be done to facilitate access to housing wealth among retirees? Haurin and Moulton (2017) observed that is it retirees' reluctance to use financial products designed for this purpose that must be overcome. Their main recommendation is to increase financial education for retirees in order to correct some misconceptions about reverse mortgages. The reluctance could also be overcome with fiscal measures: by offering a tax credit that enhances the use of reverse mortgages, for example. They also suggest revising the regulations on reverse mortgages in order to encourage financial innovation. On another level, they suggest revising regulations, specifically municipal bylaws, in order to remove obstacles that prevent buildings owned by the elderly from being converted to facilitate renting sections of them. Finally, in a context where retirement-income systems are not viable, access to certain government benefits, pension plans, or shelter for the elderly could be subjected to a wealth test that includes the value of housing.

Canada is not in a position that requires imposing such stipulations on access to benefits that have already been pledged. But, if the reluctance toward using reverse mortgages cannot be overcome, could retirement benefits be increased on the condition of reimbursement upon the sale of the residence? Although such measures do not actually differ substantially from reverse mortgages, they could be more socially acceptable if they are perceived as an advance from the government rather than the transfer of an asset to the bank. This is the approach that Australia seems to be exploring (Johnson et al., 2015).

Conclusion

The literature sheds light on the role of homeownership in retired Canadians' financial security. It also facilitates exploration of the role it should play. Retired Canadians' financial security rests on a three-pillar retirement-income system. In addition to a universal government pension plan that covers retirees' basic needs, there are employer pension plans that replace workers' income after they retire and supplementary individual retirement plans. Homeownership is a fourth pillar of financial preparation for retirement, because the home is, for the majority of households, the largest asset acquired during their working lives other than pension plans.

We have seen that the majority of Canadian retirees own debt-free housing. This proportion is higher for high-income deciles, in which about 90% of households own their houses. This contributes to retirees' financial well-being in two main ways: as precautionary savings that allow them to deal with hard times and as a source of imputed rent that reduces housing expenses. This financial gain represents almost 10% of Canadian retirees' pre-retirement standard of living. Pension plans, however, remain Canadian retirees' main assets.

Psychological considerations that make the home illiquid are added to these financial gains. Although there is a strong correlation between the price of real estate and the business cycle, increases in the value of the residence probably have very little impact on retirees' consumption. This is explained firstly by retirees' reluctance to use the net equity in their homes to increase their consumption of other goods and services. This reluctance is so widespread that financial products designed to access this equity, such as reverse mortgages, are seldom used. Only financial education seems to be able to remedy some of this reluctance. But real estate gains have little impact on retirees' consumption because of another phenomenon. Increased life expectancy and low interest rates have rendered the purchase of annuities so expensive that the real estate gains made by Canadian retirees do not provide them with increased financial capacity to support their consumption of goods and services.

We have also seen that the increasing weight of the elderly in the population will affect the impact of the cost of pension plans on government finances in Canada to a lesser degree than it will in most other OECD countries, and almost total protection against poverty among the elderly will be ensured. This fortunate combination results from the fact that the OAS, subsidized as needed by the GIS, is currently sufficient to cover basic needs, and the fact that they are indexed to price levels rather than incomes allows cost increases to be contained despite the fact that benefits will be paid out to more people over a longer period of time. Also, the preventative increase in CPP/QPP contribution rates that began in the 1990s helped create a reserve that is sufficient to ensure the sustainability of government

pensions at current contribution rates while maintaining the objective of replacing 25% of salaried workers' income up to the MPE.

Canada has thus avoided the situation observed in Germany. Since retirement pensions were part of the social security net, German households had no incentive to accumulate assets. In conjunction with favourable conditions for tenants, the homeownership rate remained low. But the exceptionally rapid aging of the German population, combined with the unfunded retirement-income system for workers, led to reforms to the retirement-income system that regulate the value of benefits paid out to retirees. Confronted with a new reality in which retirement income is no longer guaranteed, young generations of Germans are more focused on accumulating assets in order to be less dependent on the state. A progressive increase in the homeownership rate is likely. The situation in Canada is also better than that in Australia. The effect of aging on government finances in Australia will be very limited, because the state pays out significant benefits only to retirees whose incomes are much lower than the median income. Instead, Australia wagered on the accumulation of assets. Since it is now confronted with a drop in the homeownership rate among younger generations, it is projected that income inequality among retirees and poverty in this age segment will increase.

Although Canadian retirees are currently only marginally exposed to poverty and enjoy advantageous retirement conditions, future generations are in danger of enjoying less advantageous conditions in terms of income. First, the OAS and GIS represent an increasingly small fraction of incomes. Second, employer pension plans are less widespread, and the value of benefits from defined contribution plans, which are now the most common type of plan, is not guaranteed.

What role should housing play in this context? The increase in life expectancy and the expected continuation of low interest rates will force Canadian households to accumulate more wealth for retirement than they currently do. For the moment, homeownership rates remain high for current young generations, and housing should thus continue to contribute to this wealth. Measures that aim to overcome retirees' reluctance to use the equity in their homes, including financial education, tax incentives for home equity use, and changes to municipal bylaws, could help increase retired households' capacity to draw liquid income from their homes.

However, it seems that the contribution of housing to retirees' incomes will be increasingly concentrated among medium- and high-income households. It does not appear appropriate to try to increase the homeownership rate among low-income households in order to protect their retirement conditions or to encourage the acquisition of more valuable housing to increase future wealth. Such actions pose financial risks, especially if they lead households further into debt. Political consequences, such as increased income inequality, must also be considered, because the literature shows that an increased rate of homeownership makes

voters more reluctant to accept measures that encourage the redistribution of income. Although a homeownership policy may supplement a retirement-income system, it is no substitute. Finally, this study was not able to address an additional question. Healthcare, up to residential care, is an important factor in retirees' financial security. According to the OECD, in-kind government services provided to retirees increase their disposable income by an average of 40% in OECD countries and about 30% in Canada (OECD, 2013, figure 2.29, p. 1010). This significant contribution provides insurance against longevity risk. The effect of such care on retirees' financial security is beyond the scope of this study.

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