

# Retirement Preparedness and Individual Decision-Making

Implications for Canada

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# Retirement Preparedness and Individual Decision-Making: Implications for Canada

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## Executive Summary

To assist the Task Force on Financial Literacy in the creation of a national financial literacy strategy for Canada, the RAND Corporation was asked to conduct a review of relevant financial literacy and behavioural economics research relevant to retirement planning in Canada, incorporating evidence from peer countries and the *Canadian Financial Capability Survey* (CFCS). Retirement decision-making is a complex process that depends on a variety of contextual factors. This report provides broad insights based largely on findings from other countries whose retirement systems are similar to Canada's and examines the strategic implications of these findings.

The retirement system in Canada performs well relative to systems in other countries, and Canadians enjoy a strong public safety net that leads to low levels of poverty and a generally high standard of living among the elderly population. However, the proportion of retirement income from private sources is also high in Canada, giving considerable scope over the life cycle for individual choices and behaviour to affect long-term financial well-being. Individual decision-making matters when it comes to making and keeping to retirement plans, increasing personal savings, investing wisely, making choices about annuitization, and utilizing financial advice.

Many Canadians—and, in particular, those with low educational attainment, low income and recent immigrant status—are likely to lack the basic understanding of financial concepts necessary for optimal financial decision-making. Data from the CFCS indicate that, among the Canadian population, there is a positive correlation between financial literacy

and financial preparation for retirement, even when other potentially confounding background characteristics are controlled for. However, even individuals who understand what they “should” be doing can be prevented by various behavioural factors from carrying out their plan. In particular, self-control issues, procrastination, inertia, limited attention and other psychological factors can inhibit optimal behaviour. When individuals have limited rationality, retirement outcomes may be strongly influenced by the precise details of the choices that they face. Strategic choice architecture—the structure of available options—together with well-designed retirement plans can help people overcome some of these behavioural biases and, in some cases, can take advantage of biases in a way that fosters better financial preparation for retirement. Given that individuals often make passive choices, or choices that require the least possible mental effort, the creation of objectively reasonable “default” options in savings and investment plans can have a particularly significant effect on retirement outcomes.

The findings of this review suggest that many opportunities exist to build a solid basis for financial decision-making and retirement preparedness among Canadians. These opportunities include the expansion of workplace and school-based financial education programs, point-of-action programs, the expansion of successful savings products such as tax-free savings accounts (TFSAs), the simplification of existing retirement savings plans and more careful structuring of default options, the creative use of public transfer programs to increase savings, and an increased emphasis on the design of disclosure in the realm of financial products and services.

Further research in Canada, supplementing the CFCS, could provide more direct evidence on the effects of financial literacy and behavioural factors on retirement planning in the Canadian context and form the basis for more specific policy suggestions.

# 1. Introduction

In recent years, pension system reforms and a shift toward defined-contribution plans around the world have significantly increased the responsibility of individuals in determining their own long-term economic security. Although Canada has a relatively strong old-age income safety net, the relation between individual decision-making and retirement preparedness remains important. Understanding the effect of factors such as financial literacy and decision-making biases on retirement preparedness (as well as their potential to mitigate or exacerbate external shocks to economic well-being) remains an important priority for the research and policy agenda in Canada. In 2009, the Task Force on Financial Literacy was created to advise on a national strategy by the end of 2010. To support the upcoming Task Force recommendations, this report provides a critical review of research on financial literacy, behavioural economics and retirement planning relevant to Canada, building on evidence from internationally comparable settings as well as data from the 2009 *Canadian Financial Capability Survey* (CFCS).

The key research questions that this report seeks to address are as follows.

- What role have financial literacy and other behavioural factors been shown to play in overall retirement preparedness in Canada and its peer group of countries?
- What types of public or private initiatives have been taken to address retirement preparedness issues through increasing financial literacy or through interventions informed by behavioral economics? What strategic conclusions can be drawn for policy-making in Canada?

To address these topics, this paper reviews how financial literacy and other behavioural factors have been shown to affect retirement planning among Canada's peers and identifies key initiatives that have been suggested as means of improving retirement planning; these include ensuring that by increasing financial literacy through financial literacy education, and through initiatives based on research in behavioural economics and improved choice-architecture. With respect to the most relevant peer group for Canada, this analysis will

draw generally from the experience of OECD members that are comparable to Canada. Although specific program recommendations lie outside the scope of this study, possible strategies that appear most likely to be relevant to Canadian efforts to enhance retirement preparedness are discussed, and a number of conclusions relevant to policy and to next steps are drawn.

## 2. The Canadian Retirement Income System

Canada's formal retirement income system provides individuals with a well-integrated system of public and private responsibility, consisting of basic state support combined with tax-advantage opportunities to accumulate personal discretionary savings. The main components of the system are as follows:

- Old Age Security, a universal, flat-rate, minimum guaranteed income paid to Canadians and legal residents of Canada aged 65 years and over who meet income and minimum residency requirements.
- The Guaranteed Income Supplement, a means-tested additional support program for Canadians with low incomes. Some provinces also provide “top-up” programs, subject to income thresholds.
- The Canada Pension Plan (CPP)/Quebec Pension Plan (QPP), which are mandatory for workers and are financed by employer and employee contributions. The CPP/QPP also provide ancillary benefits, such as disability benefits and survivor benefits. Full benefits are available at age 65; benefits are reduced for early claims (after age 60) and increased for delayed claims (up to age 70).
- Voluntary tax-advantaged pension and saving plans, including employer-sponsored defined-benefit/defined-contribution registered pension plans (RPPs) and individual defined-contribution registered retirement savings plans (RRSPs) and registered retirement income funds (RRIFs). Contributions to RPPs and RRSPs are deductible from income for tax purposes and are capped at an annual limit. Investment income earned from RPPs, RRSPs and RRIFs are not subject to income

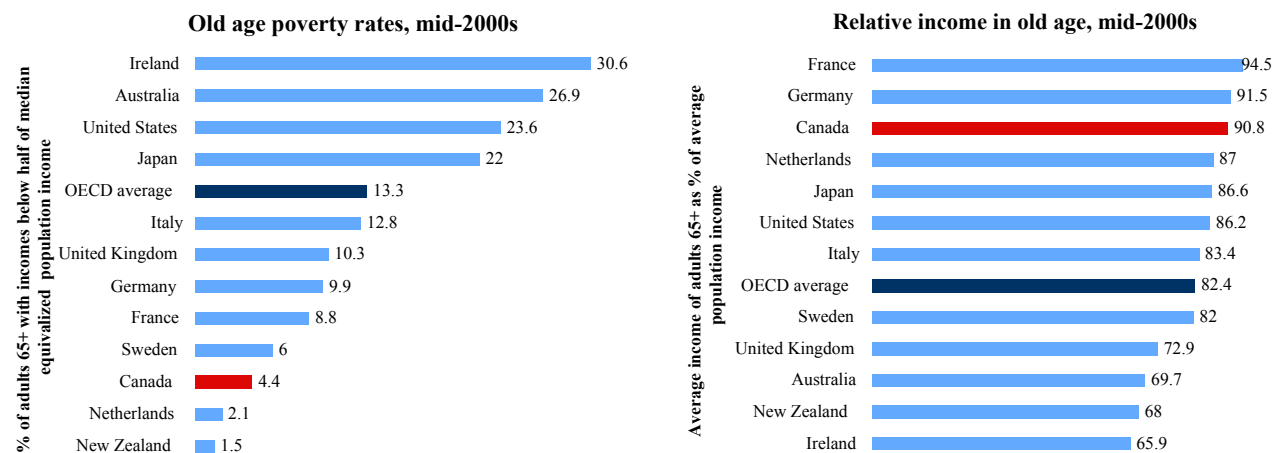
tax. Withdrawals, however, are included in income and are taxed at regular rates. In addition, in 2009, Canada introduced tax-free savings accounts (TFSAs), which can be used for any savings purpose but have an annual contribution limit of \$5000. TFSA contributions are non-deductible, but withdrawals are tax free and do not affect other income-tested benefits.

In addition to the government-sponsored retirement income system, retirement wealth can be accumulated as regular discretionary savings in non-tax-advantaged assets such as insurance policies, investments and housing.

Canada's retirement income system is designed to ensure universal coverage and to protect the incomes of particularly vulnerable groups (for instance, individuals with interrupted labour force participation or those with low incomes) and performs well relative to those of its peers in this regard (Whitehouse, 2009). Characterizing the precise level of income adequacy in retirement is a complex empirical undertaking, but general indicators of retirement living standards show that, on average, Canada's retirees are relatively secure (Mintz, 2009; Whitehouse, 2009; Baker and Milligan, 2009). Poverty rates among elderly Canadians are low relative to international standards. Over the period of 2000-2009, the rate of poverty among elderly Canadians was, at 4.4 per cent, approximately one-third of the OECD average and one-sixth of the comparable figure in the United States. Disposable income for elderly people is about 90 per cent of average disposable income, well above the OECD average (Fig. 1). Indeed, the prevalence of poverty among elderly people in this country is significantly lower than among the Canadian population as a whole (Whitehouse, 2009).



Figure 1: Income in Old Age: Canada vs. Peer Countries



**Source:** Whitehouse (2009), adapted from OECD (2008, 2009).

Given the nature of the Canadian retirement system, the scope for individual decision-making may seem more limited than in peer countries such as the United States: all Canadians receive basic income support, workers benefit from the CPP/QPP and many private pension plans remain defined benefit in nature. Nevertheless, concerns about retirement preparedness have surfaced for three reasons.

First, although national averages suggest that elderly Canadians do comparatively well overall, a number of recent studies indicate that households that need to rely on their discretionary savings may not be saving enough to ensure income adequacy during retirement. Using Canada Revenue Agency data from 2006, Horner (2009) estimated that, for almost 70 per cent of Canadian households, savings in retirement plans would be sufficient to fully maintain consumption levels in retirement, while almost 80 per cent would be able to achieve a 90 per cent replacement rate. Although the necessary savings targets are easily met in low-income households, shortfalls are evident for medium- and high-income households. Although the highest-income households are likely to offset these gaps through savings in other financial assets, Horner (2009) highlights the finding that modest- and middle-income households are likely to fall short. Similar conclusions were

also reported by LaRochelle-Côté, Myles and Picot (2008), using a larger sample of longitudinal tax data.

Furthermore, alternative measures of income adequacy suggest that the status of low-income households in retirement is still relatively problematic. Schellenberg and Ostrovsky (2010) analyze subjective measures in the 2009 CFCS. They find that 28 per cent of retirees with annual incomes below \$20,000 report that their income is insufficient to meet their monthly expenses, and that 36 per cent report that their standard of living is not as good or is much worse than expected, as compared with 9 per cent and 14 per cent, respectively, for households in the highest income bracket (\$80,000 or more). It should also be noted that inequities persist across certain demographic groups: for instance, Schellenberg and Ostrovsky (2010) cite a 2008 report by M. R. Veall in *Canadian Public Policy* that low-income rates in retirement are higher among recent immigrants to Canada, and among Canadians who are divorced.

Second, in spite of Canada's remarkably strong public safety net, the proportion of retirement income from private sources is also among the highest in the OECD and is characterized by a relatively small but increasing share of defined-contribution plans (OECD, 2009). In the 2009 CFCS, over 80 per cent of labour force participants indicated that they expect to draw savings from RRSPs, while 26 per cent expected to do so from the sale of other financial holdings, and 16 per cent from other non-financial assets such as homes or other tangible assets (Schellenberg and Ostrovsky, 2010). The insolvency of several major defined-benefit plans, coupled with significant losses in the value of private pension funds overall, have intensified concerns with respect to moderate-income households about retirement savings adequacy; these concerns pre-date the financial crisis of 2008 (Mintz, 2009).

Finally, in general, complacency may result in an inability to adjust should conditions change. A large and increasing part of government expenditure (21 per cent of present total federal expenditure) is allocated to the direct provision of retirement income (Baker and

Milligan, 2009). Whitehouse (2009) notes that long-term projections show that the public retirement-income provision is financially sustainable, and that the system strikes a healthy balance between pay-as-you-go and pre-funding as financing mechanisms. However, Baker, Gruber and Milligan (2009) suggest that fiscal pressures associated with an increasingly aging population could lead to reductions in public retiree benefits in the future. In such a case, the authors argue, preserving the well-being of the elderly population will depend crucially on whether individuals are able to compensate for such reductions in benefits.

### 3. Financial Literacy and Behavioural Biases in Individual Decision-Making

From the perspective of traditional economic theory, a hypothetical decision-maker plans consumption and saving to maximize his or her expected lifetime utility subject to an intertemporal budget constraint. In approaching these decisions, rational individuals consider all aspects of their personal circumstances and make choices that are optimal for themselves.

However, people often depart from choices that lie in their own best interest, for broadly defined reasons. First, they may lack the financial skills and information to understand the need for a plan, or to correctly formulate the right plan. For the purposes of this paper, we define *financial literacy* as having the knowledge, skills and confidence to make responsible financial decisions. As Lusardi and Mitchell (2006) note, even the simplest of retirement planning models posit that the consumer is first able to form reasonable expectations of prospective survival probabilities, discount rates, investment returns, labour earnings, retirement benefits and inflation, and is then able to process all this information to come up with utility-maximizing consumption/savings plans. Given this complexity, individuals without sufficient financial literacy may make choices that are not in their best interest over the long term.

Among Canada's peer group, an increasing number of countries have completed or are in the process of implementing financial literacy or capability surveys, helping policy-makers to assess financial capability at the population level. In 2005, the OECD first reviewed surveys conducted in 12 of its member countries (OECD, 2005). Since then, a number of new national surveys have been conducted, including the 2009 CFCS in Canada, the results of which will allow better measurement and understanding of financial literacy.

Across many different countries, researchers find that a significant fraction of all consumers have a limited understanding of general financial concepts. For instance, in the 2009 United States National Study of Financial Capability, fewer than 10 per cent of respondents were able to answer three simple questions about compound interest, inflation and risk diversification (FINRA, 2009; Lusardi, 2010). In the United Kingdom, more than 60 per cent of respondents were identified as having at least one area of weakness related to financial capability (Atkinson et al., 2006). Financial literacy is also consistently correlated with socio-economic variables such as gender, ethnicity, education and income (see, for instance, Lusardi and Mitchell, 2008). At the same time, many people overestimate their ability to manage their finances: in a typical example, in the same 2009 United States financial capability survey, almost 40 per cent of respondents rated their knowledge as high or very high. This high self-ranking is consistent with findings from other surveys, but is incompatible with the measured level of financial literacy (Lusardi, 2010). Similarly, in the Netherlands, almost 15 per cent of individuals surveyed had poor financial knowledge but reported that they had no need for extra information about financial matters (CentiQ, 2007).

Evidence from other countries shows that, even among the older population, many people have little understanding of skills and topics specifically related to retirement. At the most basic level, a significant number of people are not fully aware of their own financial status: studies report that half of workers aged 50 years and older who have company pensions do not know what type of pension they have, and many do not know what factors influence their retirement payouts (Chan and Stevens, 2008; Gustman, Steinmeier, and Tabatabai,

2009). In initial studies using the 2004 Health and Retirement Survey (the leading survey of retirement-age adults in the United States), and more recent work using the 2008 Health and Retirement Survey, Lusardi and Mitchell (2006, 2007) and Lusardi, Mitchell and Curto (2009) found that Americans in this age group lacked even a basic understanding of concepts, such as inflation and compounding, that are fundamental to savings decisions, let alone a more advanced understanding of stock and bond prices, risk diversification, portfolio choice, and investment fees needed to successfully make long-term investments. Indeed, Lusardi, Mitchell and Curto (2009) suggest that, at most, only 25 per cent of this age group may be considered financially sophisticated.

Research discussed later in this report demonstrates that financial literacy does in fact matter for financial well-being in retirement. A large body of evidence documents relationships between financial literacy and financial management behaviours relevant to every stage of preparation for retirement. Financial literacy, however, is potentially only one part of the problem: financially literate individuals may still fail to make or execute plans because of psychological factors that affect decision-making, such as an inability to maintain discipline, a tendency to fall back on simple rules rather than thinking things through, and susceptibility to factors such as emotions and peer pressure (Baker and Milligan, 2009).

As noted previously, under the standard assumptions of economic theory, decision-makers are perfectly rational and are able to utilize fully all of the information available to them. Economists have long argued that these assumptions are not meant to accurately capture realistic human behaviour in a literal sense, but to provide mathematically tractable and empirically reasonable approximations for modelling and analysis. However, a growing body of evidence across multiple domains of observed behaviour suggests that this rationale often breaks down in important and significant ways: systematic biases and anomalies are found that contradict the predictions of models predicated only on rational behaviour. The field of behavioural economics draws on insights from psychology and

cognitive science to provide explanations for such biases and anomalies that lie outside the standard model.

In general, following DellaVigna (2009), three main classes of deviation from standard economic models are highlighted below; these are related to preferences, beliefs and decision-making processes. A review of the evidence related to retirement preparation is then presented. For a more complete review of the state of the field, the reader is encouraged to refer to DellaVigna (2009), while Yoong (2010) provides a selective review of topics related more generally to household finance.

### 3.1 Preferences

When considering future payoffs, it is intuitively clear that discount rates are likely to vary across individual. For instance, while most rational people would consider a payment of \$100 in a year's time to be worth less than \$100 today, all else equal, patient individuals with a low discount rate will value the future payment more highly than impatient individuals with a high discount rate, and would therefore be willing to forgo more order to receive it.

A common assumption in standard economic models of behaviour is time consistency, i.e. that individuals will maintain the same effective discount rate over different time horizons. However, research in psychology has shown that individuals are not time consistent. In fact subjective discount rates tend to vary not only across but also within individuals. Many people in fact may have short-term discount rates that are higher than their long-term discount rates: in other words, they are long-run patient, but short-run impatient. To continue the previous example, such a time-inconsistent individual may be willing to exchange \$50 in a year's time for \$100 in two years' time, but refuse the immediate opportunity to exchange \$50 today for \$100 in a year's time. This *present bias* can lead to *self-control problems*. Such individuals may not be able to stick to a long-term plan that involves immediate sacrifices, as they are continually susceptible to the temptation to maximize short-term utility at the expense of their own long-term well-being. Another

consequence of present bias can be *procrastination* or *inertia*, leading to a *default effect* (whereby very small immediate costs can cause individuals to follow the path of least resistance and/or put off implementing a decision, even if it would result in relatively large but delayed benefits).

A related issue with intertemporal decision-making is *myopia*, or an inappropriate weighting of the time dimension. For example, bad news from one day to the next (“the market value of an investment has fallen since yesterday”) is treated in the same way as bad news referring to a longer period (“the market value of an investment has fallen since last year”).

Another important departure from standard preferences is *reference dependence*, a concept examined in Kahneman and Tversky’s body of work on decision-making (see for instance Tversky and Kahneman (1991)). According to their *prospect theory*, individuals derive utility on the basis of differences from a given reference point rather than from an absolute value. When this is the case, the presentation or framing of choices becomes critically important, as preferences may be reversed when the same problem is framed in different ways. For instance, individuals may fixate on an arbitrary *anchor* or reference point that is unintentionally introduced; alternatively, people who are *loss-averse* tend to weigh losses more than gains. A related manifestation of reference dependence is the *endowment effect* (Kahneman, Knetsch and Thaler, 1991), which leads individuals to place a higher value on an object when they are in possession of it. In combination, loss aversion and the endowment effect can result in *status quo bias*, or an inherent preference for one’s current state.

In standard economic models, individuals evaluate decisions in the context of all other decisions that they face. *Narrow framing* refers to the tendency to treat the outcome of decisions in isolation. Thaler (1985, 1999) describes a series of cognitive processes, termed *mental accounting*, that embody reference dependence: individuals organize, evaluate and keep track of financial activities in a manner analogous to real accounting systems. Sources

and uses of funds tend to be grouped using categories (housing, food, etc.) with implicit or explicit budgets, and the balancing of these “mental accounts” may take place at particular intervals. This can have strong implications for behaviour: for instance, individuals may tend to mentally set aside funds.

*Social preferences* depart from the standard model by implying that individuals derive utility from and thus base decisions on the payoffs or decisions they observe in other individuals. Peer effects on behaviour have been found across various cultural settings, although their magnitude differs. These can operate through direct social interactions such as word of mouth or learning by observation (e.g., Brown, Ivković et al., 2008; Duflo and Saez, 2003; Hong, Kubik and Stein, 2004), or by direct or indirect social pressure (such as the implicit desire for conformity, acceptability and social identity), all of which can powerfully affect decision-making (Bikhchandani, Hirshleifer and Welsh, 1998).

### 3.2 Belief Formation

Non-standard beliefs can be manifested in a number of ways relevant to saving and money management. These include *overconfidence*—the tendency to overestimate the performance or ability of oneself or other actors—and a tendency to be *overly optimistic* about one’s environment and to consistently underestimate the probability of negative events across multiple domains (e.g., natural disasters, hospitalization or falls in stock prices (Barberis and Thaler, 2003). Both types of overconfidence can lead to excessive risk-taking or other mistaken decisions (e.g., Camerer and Lovallo, 1999).

In addition, researchers in psychology and decision science have shown that individuals have difficulty formulating accurate beliefs about risk, particularly in the form of numerical probabilities. One common tendency is to overweight immediately available information and to draw false conclusions about how accurately that information represents the underlying reality. Such *availability* and *representativeness* heuristics can be manifested in many ways, a common example of which is *overinference* (the belief that a sequence of signals is likely to mean that the next signal is of the same type).



### 3.3 Decision-making Processes

Some individuals fundamentally lack the cognitive capacity to process all the information in their environment, particularly as complexity increases. *Limited attention* results in selective filtering—a preference for more salient and/or more recent information and stimuli—and to *confirmatory bias*, the tendency to gather and retain information that reinforces already-held beliefs (Mullainathan and Shleifer, 2005). Limited cognitive capacity also results in the adoption of simplifying heuristics or cognitive “rules of thumb”. For instance, Stango and Zinman(2009) note that when individuals assess functions containing exponential terms, there is a systematic tendency to adopt a simpler linear approximation. Finally, when people are faced with a choice that is perceived as too complicated, *information overload* can lead not only to stress but ultimately to *choice avoidance*, such that they simply forgo making any decisions.

People are also driven by emotional responses to automatic triggers, which may have positive or negative effects on decision-making, depending on the context. Seminal work by Loewenstein and coauthors shows that emotional state matters: individuals in a “hot” emotional state tend to respond more viscerally than they otherwise might. The nature of emotional disposition also matters: people in good moods make overly optimistic judgments. Individuals also find it hard to predict their own behaviour in different emotional states (see, for example, Loewenstein, 1996; Loewenstein and Lerner, 2003) and may also suffer from *projection bias*, systematically expecting that their future preferences will be similar to their present ones (Loewenstein, O’Donoghue and Rabin, 2003). Finally, individuals are naturally attracted to stimuli that give rise to positive affective reactions. Unsurprisingly, therefore, framing and marketing techniques that provoke emotional responses have large effects on choice.

## 4. Implications for Retirement Preparedness in Canada

As mentioned, the retirement system in Canada relieves individuals of a large share of decision-making relative to some other country settings. However, in at least five specific

domains of behaviour, choice still plays an important part in determining long-term financial well-being. These are:

- making and keeping to plans for retirement;
- increasing personal savings, including voluntary enrolment and contributions to private pension plans;
- investing and using financial products wisely;
- making choices about annuitization; and
- asking for and using financial advice.

The next section of this report highlights current research on financial literacy and behavioural factors relevant to these five domains in the Canadian context. Evidence from Canada is used where available; otherwise, findings from comparable settings are relied upon. (For instance, when relatively few studies investigating behavioural economics and RPPs/RRSPs are available, this analysis draws heavily upon the extensive work done on similar 401(k)-type plans in the United States.)

#### **4.1 Making Timely and Appropriate Plans for Retirement**

In the research literature, financial literacy has been shown to be integral to retirement planning. The more literate are more likely to set aside time to plan, and to stick to their plans: using data from the Health and Retirement Survey, Lusardi and Mitchell (2006, 2007) found that, overall, people who are more financially literate are more likely to successfully make plans for retirement. Using a representative sample of American households, Hung and colleagues (2009) also found that those with higher financial literacy gave more thought to retirement planning and to how their money would be spent down over the course of their retirement (2009).

Financial literacy can be measured explicitly, using the 12 objective knowledge questions included in the CFCFS that cover basic financial concepts such as inflation (see Appendix 1). Table 1 presents this measurement as the average number of correct answers, and as an

index generated using factor analysis to weight the various answers in a manner that best explains the observed variation. The value of the index is normalized to zero for the population average. As the table shows, on average, respondents to the CFCS answered only 8 of the 12 questions correctly. Moreover, important differences relevant to retirement can be seen across demographic groups. First, financial literacy increases up to the age of 60, and then begins to decline. Second, financial literacy is higher among men than among women. Third, financial literacy increases with income and education; among immigrants it also increases with tenure in Canada.

**Table 1: Financial Literacy in Canada, by Selected Characteristics, 2008**

| Characteristic   |                                    | Average number of correct answers (total = 12) | Financial literacy index (baseline = population average) |
|--|------------------------------------|--|--|
| Total  |                                    | 7.95   | 0.00   |
| Immigration status   | Born in Canada                     | 8.22   | 0.34   |
|  | Immigrated before 1980             | 7.57   | -0.12  |
|  | Immigrated 1980–1998               | 6.89   | -0.29  |
|  | Immigrated after 1998              | 6.47   | -0.41  |
| Age  | 25–34                              | 8.15   | 0.06   |
|  | 35–44                              | 8.32   | 0.10   |
|  | 45–54                              | 8.52   | 0.15   |
|  | 55–59                              | 8.58   | 0.16   |
|  | 60–64                              | 8.30   | 0.09   |
|  | 65–69                              | 7.90   | -0.01  |
|  | 70 and over                        | 6.06   | -0.50  |
| Gender   | Female                             | 7.65   | -0.06  |
|  | Male                               | 8.25   | 0.07   |
| Employment   | Employed                           | 8.47   | 0.14   |
|  | Not in labour force                | 7.12   | -0.22  |
|  | Unemployed                         | 7.35   | -0.16  |
| Income quintile  | Less than \$13,001 (0%–20%)        | 6.95   | -0.26  |
|  | \$13,001–\$24,999 (21%–40%)        | 7.13   | -0.21  |
|  | \$25,000–\$39,999 (41%–60%)        | 7.81   | -0.02  |
|  | \$40,000–\$62,999 (61%–80%)        | 8.53   | 0.16   |
|  | \$63,000 and over (81%–100%)       | 9.32   | 0.33   |
| Education  | Less than a high school diploma    | 5.91   | -0.54  |
|  | High school / some post-secondary  | 7.68   | -0.05  |
|  | Post-secondary certificate/diploma | 8.39   | 0.13   |
|  | University undergraduate degree    | 9.09   | 0.27   |
| <b>Source:</b> <i>Canadian Financial Capability Survey</i> . Sample size N = 15, 519, weighted population = 26,212,439 |                                    |  |  |

Further results from the CFCS suggest that these patterns of financial literacy are consistent with observed patterns of retirement planning in Canada. Respondents were asked whether they were preparing for their retirement, either on their own or through an employer plan. As Table 2 shows, the majority of individuals reported doing so (81 per cent), and many cited financial reasons as a barrier. However, the quality of retirement preparation is far less reassuring. The findings summarized in Table 2 also show that more than half of the population also reported a lack of relevant knowledge: only 46 per cent said that they knew how much they needed to save to maintain their standard of living (Schellenberg and Ostrovsky, 2010).

Groups with the lowest levels of financial literacy are least likely to report planning for retirement and, unsurprisingly, report the least knowledge of how much to save. Worryingly, this lack of knowledge and confidence extends even to individuals in the age groups closest to retirement: of those aged 55–64, only 57 per cent responded positively. Similarly, this is also evident among the most highly educated: although positive responses increased with formal education, just over half of all university graduates reported knowing how much to save.

Finally, we explored the relationship between financial literacy and retirement planning more rigorously. As both financial literacy and the propensity to plan are observed to vary systematically with certain background factors, the observed relationship between financial literacy and retirement planning may well be confounded by these other factors.

To account for this, we used the CFCS data to estimate the relationship between an individual's financial literacy score and whether or not he or she reported financial planning for retirement, while holding fixed other background characteristics (age, region, immigration status, gender, relationship status, employment, income, education and private pension plan ownership). Specifically, we employed a multivariate regression analysis, using financial planning for retirement as the dependent variable and treating financial literacy as well as the set of demographics above as explanatory variables. To

account for the fact that financial planning for retirement is dichotomous (individuals are observed to either plan or not plan), we used logistic regression analysis. This empirical model predicts the odds of observing financial planning for each individual (in logarithmic form) as a linear function of the explanatory variables. The size and sign (positive or negative) of the estimated coefficient on any explanatory variable is a reflection of its relative positive or negative influence on the probability of financial planning for retirement, independent of the others. The model was estimated with SAS software (SAS Institute, Inc., Cary, NC) using maximum likelihood estimation.

**Table 2: Preparations for Retirement Financial Literacy in Canada, by Selected Characteristics, 2008**

|                    |                                    | Financially preparing<br>for retirement, % | Reported knowing how<br>much to save to maintain<br>standard of living, % |
|--------------------|------------------------------------|--|---|
| Total              |                                    | 81.0                                       | 45.6  |
| Immigration status | Born in Canada                     | 83.0                                       | 46.7  |
|                    | Immigrated before 1980             | 83.7                                       | 53.0  |
|                    | Immigrated 1980–1998               | 75.9                                       | 42.6  |
|                    | Immigrated after 1998              | 67.4                                       | 33.2  |
| Age                | 25–34                              | 75.0                                       | 37.2  |
|                    | 35–44                              | 82.3                                       | 44.0  |
|                    | 45–54                              | 83.0                                       | 48.4  |
|                    | 55–64                              | 85.1                                       | 56.8  |
| Gender             | Female                             | 80.7                                       | 39.9  |
|                    | Male                               | 81.3                                       | 50.6  |
| Household income   | Less than \$20,000                 | 39.3                                       | 24.6  |
|                    | \$20,000–\$39,999                  | 58.8                                       | 30.3  |
|                    | \$40,000–\$59,999                  | 73.7                                       | 35.2  |
|                    | \$60,000–\$79,999                  | 80.8                                       | 40.2  |
|                    | \$80,000–\$99,000                  | 87.5                                       | 45.7  |
|                    | > \$100,000                        | 92.4                                       | 58.1  |
| Education          | Less than a high school diploma    | 61.1                                       | 28.8  |
|                    | High school / some post-secondary  | 79.5                                       | 41.1  |
|                    | Post-secondary certificate/diploma | 81.1                                       | 45.9  |
|                    | University undergraduate degree    | 87.8                                       | 53.5  |

**Source:** Schellenberg and Ostrovosky (2010), based on *Canadian Financial Capability Survey*.

Our results show, first, that many of the demographic characteristics have independent associations with retirement planning (see Table 3). As suggested by the descriptive statistics, all other factors being equal, recent immigrants are significantly less likely to plan, and the more educated are more likely to plan. Interestingly, in the multivariate regression, men were shown to be significantly less likely to plan than women, suggesting that the slight planning gap in favour of men observed in the summary statistics may be explained by confounding factors, including financial literacy.

**Table 3: Multivariate Logistic Regression Results, Financial Preparation for Retirement and Financial Literacy**

| Dependent variable: 1 = Financially planning for retirement, 0 = otherwise |                                   |                           |
|--|-----------------------------------|---------------------------|
|  |                                   | Estimate (Standard Error) |
| Intercept  |                                   | 0.20 (0.18)               |
| Financial literacy score   |                                   | 0.24 (0.03)*              |
| <b>Additional controls</b>   |                                   |                           |
| Immigration status   | Born in Canada, non-Aboriginal    | -0.01 (0.14)              |
|  | Immigrated before 1980            | 0.02 (0.13)               |
|  | Immigrated 1980–1998              | -0.41 (0.15)*             |
|  | Immigrated 1999–2009              | -0.31 (0.12)*             |
| Region   | Atlantic                          | -0.25 (0.12)**            |
|  | British Columbia                  | -0.04 (0.11)              |
|  | Manitoba and Saskatchewan         | 0.72 (0.13)*              |
|  | Ontario                           | -0.40 (0.12)              |
|  | Quebec                            | -0.34 (0.07)              |
| Age groups   | 25–34                             | 0.67 (0.08)               |
|  | 35–44                             | 0.19 (0.08)**             |
|  | 45–54                             | 0.06 (0.08)               |
|  | 55–59                             | 0.17 (0.11)               |
|  | 60–64                             | 0.22 (0.16)               |
|  | 65–69                             | -0.73 (0.25)*             |
|  | 70 and over                       | 0.03 (0.31)               |
| Gender   | Male                              | -0.15 (0.05)*             |
| Relationship   | Not in a couple relationship      | -0.49 (0.06)*             |
| Employment   | Not in the labour force           | -0.93 (0.07)*             |
|  | Unemployed                        | 0.03 (0.10)               |
| Private plan   | Has private pension plan          | 0.77 (0.08)*              |
| Household income   | Less than \$13,001 (0%–20%)       | -2.25 (0.11)*             |
|  | \$25,000–\$39,999 (41%–60%)       | 0.71 (0.07)*              |
|  | \$40,000–\$62,999 (61%–80%)       | 0.49 (0.08)*              |
|  | \$63,000 and over (81%–100%)      | 0.78 (0.11)*              |
| Education  | Less than a high school diploma   | -0.52 (0.09)*             |
|  | High school diploma or equivalent | -0.01 (0.07)              |
|  | Some college, university          | 0.39 (0.10)               |
|  | University undergraduate degree   | -0.09 (0.12)              |
|  | University graduate degree        | 0.49 (0.12)*              |

**Source:** *Canadian Financial Capability Survey*. N = 15,519; weighted population = 26,212,439. \*  $p < .01$  \*\*  $p < 0$   
Omitted categories: Birth status—born in Canada, Aboriginal; Region—Alberta; Age 18–24; Gender— Female;  
Household income—21%–40%; Employment—employed; Education—post-secondary certificate/diploma

Most importantly for this report, however, we can conclude that increasing financial literacy significantly and positively predicts preparation for retirement, a finding that is robust to the inclusion of demographic controls. A unit increase in the financial literacy score is associated with an increase of 0.24 in the log odds of an individual being financially prepared for retirement. Applying the appropriate transformation to the coefficients, this implies that a unit increase in the financial literacy score increases an individual's odds of planning by 1.2 times. Note that this analysis does not absolutely establish causality: although we are able to control for key demographic characteristics, this does not rule out other potentially unobservable and relevant omitted variables or other sources of endogeneity. However, the strongly predictive and highly suggestive results point to a worthwhile and potentially fruitful avenue for future research using the CFCS.

Apart from financial literacy, other important and typically unobservable behavioural tendencies are likely to affect financial planning. Procrastination is likely to be a major factor behind a lack of future planning for many individuals. Those who are susceptible to present bias and problems with self-control are likely to put off any course of action with large delayed benefits but small short-term costs (Laibson 1997; O'Donoghue and Rabin 1999), such as setting aside the necessary planning time or investing in tools, materials and information-gathering. In addition, individuals who are unaware about their time inconsistency may face problems with setting realistic long-term goals: they may make plans for the long term involving ambitious goals that are ultimately not sustainable.

Finally, for some people, although potentially a minority, overconfidence and overoptimism may also play a role in inhibiting retirement planning behaviour. Individuals who are overconfident in their ability to earn high incomes or invest their personal funds successfully may feel no need to set aside regular amounts for retirement. On the other hand, some may underestimate the resource needs that will arise as a result of aging and medical risks. This is often compounded by a general but potentially unfounded conviction that other entities, likely the government, will somehow ensure an adequate standard of living—the so-called “Samaritan dilemma” (OECD, 2008).



## 4.2 Personal Savings and Wealth Accumulation

Finding ways to increase overall savings remains a challenge in Canada and elsewhere. Indeed, a considerable amount of debate centres on the apparent fall in personal savings rates in Canada. Mintz (2009) and Horner (2009) note that studies based on National Accounts data show a steady decline in savings rates from a peak of 20 per cent in the 1980s to a current estimate of 5 per cent. Although some alternative methodologies, such as tracking changes in the net accumulation of household assets and capital gains, indicate that personal savings rates may still have been relatively stable, the fact that not all Canadians achieve successful income replacement rates in retirement suggests that building discretionary savings should remain a key priority.

Although failure to save may be attributable to exogenous financial circumstances in many cases, individual predisposition related to time inconsistency has been shown to be related to wealth accumulation. In general, self-control problems are an intuitively appealing explanation for persistent individual overconsumption and undersaving (Laibson, Repetto and Tobacman, 1998). This has also been characterized as “poor savings discipline” (Mintz, 2009). Individuals who have self-control problems may not be able to forgo consumption and may also tend to acquire excessive debt, building (expensive) liabilities that compromise their ability to save for the long term. Laibson, Repetto and Tobacman (2007) suggest that short-term impatience leads people to overspend their liquid assets and use credit cards, and Meier and Sprenger (2010) show that present bias is positively related to increased credit-card borrowing.

In theory, private pension plans such as RPPs and RRSPs are attractive vehicles for retirement savings, offering tax advantages as well as, in some cases, bonuses from matching employer contributions. From a behavioural economics perspective, such plans also offer additional benefits for encouraging savings. First, from a mental accounting perspective, individuals account for these funds differently from regular income flows. In the context of retirement savings plans in the United States, Card and Ransom (2007) found that individuals treat their own savings and employer or government contributions

as if they came from different mental accounts, and that lump-sum transfers may be easier to save because individuals see them as surplus or bonus funds that can be saved (Shefrin and Thaler, 1988; Thaler, 1994). In addition, the withdrawal restrictions in some retirement plans act as commitment devices, and this can help individuals with self-control issues.

Despite the theoretically attractive features of RPPs and RRSPs, TD Bank Financial Group (2010) reports that between 1997 and 2008 overall participation in RRSP plans fell from 41 per cent to 34 per cent, and that this decline occurred in every income quintile and across age groups. Research from the United States and elsewhere shows that, when enrolment is voluntary, participation rates in RRSP-type plans such as 401(k) retirement plans fall short of what is regarded as desirable. In an extreme case from the United Kingdom, Thaler and Benartzi (2007) cite evidence from a sample of 25 defined benefit plans: even though all the plans were fully paid for by employers and required no employee contribution at all, only 50 per cent of eligible employees actually participated.

A large literature has shown that procrastination and inertia may have a large role to play: relatively small transaction costs or burdensome paperwork can be a real barrier to action, including the decision to participate in retirement savings plans (Choi et al., 2002). In the United States, Madrian and Shea (2001) found that participation rates under the standard opt-in approach were barely 20 per cent after 3 months of employment, gradually increasing to 65 per cent after 36 months of employment. Under auto-enrolment of new employees with an opt-out feature, the immediate enrolment rate was 90 per cent, and after 36 months almost all employees were participating. Subsequent research by Choi and colleagues (2004) shows that individuals consistently follow the path of least resistance and/or procrastinate when making such decisions. Cronqvist and Thaler (2004) found similar evidence for the default effect in Sweden.

Even when individuals take an active part in the decision to participate in retirement savings plans, limited attention can affect the outcome. Benartzi and Thaler (1999) remark

that most people spend very little time on this important financial decision: the majority of participants in their survey of University of Southern California faculty and staff reported that they spent less than an hour determining their contribution rates and investment elections. Moreover, many revert to simple heuristics or rules of thumb (Benartzi and Thaler, 2002).

Finally, as with many other aspects of behaviour, peer effects can influence savings behaviour. Duflo and Saez (2003) suggest, for example, that in a workplace setting social network effects can raise participation in retirement savings plans: first, through direct transmission of information through word of mouth and, second, through peer pressure or the desire to conform.

#### **4.3 Investing and Using Financial Products Wisely**

As previously noted, investments are an important source of long-term income support for many Canadians, whether through private pension plans or through other investment accounts. Financial literacy related to investments can thus be a fundamental determinant of a household's eventual financial status. Individuals who are more financially literate are likely to manage their wealth better. Although knowledge of more sophisticated concepts such as diversification are likely to improve returns for the average investor, many individuals lack even the basic facts about investing that can substantially affect their portfolios. Evidence from the Netherlands, Italy and the United States shows that the more financially literate are more likely to participate in the stock market (Van Rooij, Lusardi and Alessi, 2007; Christelis, Jappelli and Padula, 2010; Yoong, forthcoming) and are more likely to choose financial products with lower fees (Hastings and Tejada-Ashton, 2008). In a most striking example, Guiso and Jappelli (2005) show that a large fraction of Italian households may not participate in the stock market for the simple reason that they are entirely unaware of the existence of stocks, mutual funds and investment accounts.

The field of behavioural finance has also much to say about the psychology of typical retail investors. For instance, it is well known that investors tend to place too much weight on

past performance. Many studies demonstrate that investors tend to overextrapolate from past performance (e.g., DeBondt and Thaler, 1985). Such overinference can result in portfolios that are overpriced, and hence likely to underperform in the future (De Bondt and Thaler, 1985). Although past performance may be informative (as in the case of actively managed investment funds), Choi, Laibson and Madrian (2010) show that, even when comparing essentially identical index funds, individuals are sensitive to information about past returns.

Loss aversion is also an important phenomenon that generates anomalies such as the *disposition effect*: investors who find it unpleasant to realize losses have a tendency to sell winners and to hold on to losing stocks (Grinblatt and Han, 2003; Shefrin and Statman, 1985; Odean, 1998; Barber, Odean and Zhu, 2009). When investors are loss averse and also tend to evaluate their portfolios very frequently, this combination can lead to an excessive tendency to overreact to short-term losses and avoid taking risks (Thaler et al., 1997; Benartzi and Thaler, 1999; Gneezy, Kapteyn and Potters, 2003). Thaler and colleagues (1997), Gneezy and Potters (1997) and Gneezy, Kapteyn and Potters (2003) show that, in the context of United States and Holland, this myopic risk aversion appears to increase as investors receive more frequent information. Investors who are myopic may sell out of risky assets too quickly in a downturn and buy back in too late in a recovery. This can be exacerbated by an overly narrow focus on stocks—Barberis, Huang and Thaler (2006) found that investors with a diversified portfolio appear to derive utility primarily from the fluctuations in their stock investments, independent of the overall fluctuation of their entire wealth portfolio—as well as by overconfidence in one's ability to time the market.

For retirement savings, these biases are particularly relevant, given the significant amount of retirement wealth held in private plans and other investments in Canada and elsewhere around the world that were heavily hit by the financial crisis. For investors with myopic loss aversion, poor market timing may have resulted in permanent and irrecoverable losses. Recent data from the field provide some support for this finding: data on almost three million Vanguard investors in the United States show that during the stock market

crisis of 2008 and 2009, men were 10 per cent more likely to abandon stocks than women (potentially implying that men were more likely to have taken losses and to have missed the market's initial rally) (Ameriks, Marshall and Ren, 2009).

Another issue that can seriously affect long-term savings is lack of attention to fees. Mintz (2009) notes that a significant number of Canadians often pay for asset management, and that the most expensive fees are associated with mutual funds. However, it is not clear whether investors do so with a full appreciation of their cost. Gabaix and Laibson (2006) demonstrate that firms tend to shroud attributes of their products to extract more profits, and financial firms are no exception. Even in the absence of deliberate shrouding, consumers show a robust insensitivity to the features and fees associated with financial products and services (Dominitz, Hung and Yoong, 2009). Barber, Odean and Zheng (2005) find that mutual fund purchases are sensitive to salient fees, such as front-end loads and brokerage commissions, but are insensitive to less salient charges such as expense ratios. However, over time even small fees can significantly erode long-term value.

Finally, as with overall savings behaviour, social interactions matter in the choice of investments. Hong, Kubik and Stein (2005) found that U.S. households that reported having many social interactions were more likely to have invested in the stock market than non-social households, a conclusion also reached by Christelis, Jappelli and Padula (2005) using data from 10 European countries. Brown, Ivković, and colleagues (2008) also showed a causal relation between an individual's stock ownership and the average stock market participation in their community (and, further, that the results are stronger in more sociable communities).

The problems described above hold generally: investments for retirement, whether in a tax-advantaged retirement savings plan or in other assets, can be thought of simply as separate components in an individual's overall portfolio. Yet Choi, Laibson and Madrian (2009) show that, in fact, individuals generally treat their investment accounts as distinct, and many handle their retirement savings plans without considering the allocations in

their other accounts. The lack of overall integrated investment strategies is a first-order concern. Furthermore, this suggests that we need to consider the idiosyncrasies shown by typical retail investors in addition to a host of specific issues that have emerged as particularly relevant in the context of retirement savings plans.

For the increasing number of individuals in Canada and elsewhere with defined-contribution retirement savings plans, choosing investment options from a set of offerings is an integral part of determining future portfolio outcomes. Menu effects—behaviours that arise systematically when consumers are presented with a list of choices—are therefore particularly important, and the nature and presentation of options within retirement savings plans can matter significantly. In many retirement savings plans, increasing the number of investment options is seen as beneficial, as it ensures that participants have the flexibility to meet their individual needs. However, although standard economic theory predicts that more choice improves the consumer's welfare, in practice increasing complexity can adversely affect both participation and investment allocations. Iyengar, Huberman and Jiang (2004) and Choi, Laibson and Madrian (2006) show that participation in retirement savings plans tends to drop as the number of options increases. Iyengar and Kamenica (2008) also show that increasing the number of options in a plan affects behaviour by causing investors to reallocate their savings toward low-risk, simpler options.

Furthermore, for any given list of options, common rules of thumb can result in arbitrary risk profiles that are unrelated to true risk preferences. One of the most well-known examples is the “ $1/n$  heuristic” described by Benartzi and Thaler (2001), which results in the naive diversification of portfolios. When investors are offered  $n$  choices they tend to allocate  $1/n$  of their investment to each of the choices offered, independent of the risk characteristics of each option. Even when investors choose a subset of the menu of investment options, they tend to apply a conditional version of the rule and split their allocation evenly across that subset (Huberman and Jiang, 2006). Benartzi and Thaler (2002) also show that investors appear to use a naive heuristic of avoiding extremes and picking the middle option: when a particular asset is the most risky in a set, it is least

preferred, but when it is offered as a middle choice, investors tend to prefer it more. Finally, overall framing matters: Benartzi and Thaler (2002) find that the choice of retirement savings portfolios varies significantly when portfolio choices are reframed in terms of ultimate outcomes (i.e., projected retirement income).

When it comes to overall investing, some investors may be overconfident in their own abilities, and hence trade in an overly aggressively manner. In the context of retirement savings, this is particularly problematic, as the costs of such trading behaviour can erode value and eventually lead to portfolio losses (Odean, 1998; Barber and Odean, 2001; Barber, Odean and Zhu, 2009). Notably, overconfidence in this setting is associated with gender: Barber and Odean (2001) found that, other factors being equal, men traded almost 50 per cent more than women, driving up their transaction costs and lowering their returns. However, when it comes to the holdings of retirement savings plans, the opposite may be true: inertia and procrastination can result in allocations that are out of date, as most investors rarely rebalance their portfolios. Over a 10-year period, Ameriks and Zeldes (2004) found that only a quarter of individuals ever reallocated their accumulated assets.

Some observed anomalies related to savings and investment have additional nuances in the context of retirement savings plans. Consider the issue of overinvestment in one's own company stock, which has negative implications for overall household risk diversification. Some of this is attributable to poor financial literacy: Benartzi and colleagues (2007) found that only 33 per cent of respondents who owned company stock realized that this investment was riskier than a "diversified fund with many different stocks." A leading explanation for this behaviour in investors acting as individuals is overconfidence about the performance of their employer, which can lead them to seek out and hold a large percentage of savings in their employer's stock or stock options (Mitchell and Utkus, 2002; Benartzi et al., 2007). Benartzi and Thaler (2007) cite evidence from a 2002 Boston Research Group survey of 401(k) participants in the United States that found even though respondents were aware of the Enron meltdown and its impact on employee retirement holdings, half still said that their own company stock carried the same or less risk than a

money market fund. In the context of retirement savings plans, however, many employees receive stock options or company stock by default (Oyer and Schaefer 2005), for instance in the form of matching contributions. Largely because of inertia, many of these may continue to voluntarily hold large amounts. In addition, they may view their employer's decision to match their company company purchases as implicit advice. Benartzi (2001) showed that employees who receive employer matches in stock tend to allocate significantly more of their own discretionary contributions to company stock than employees who have full discretion over their employer matches.

#### **4.4 Making Decisions about Annuitization**

Longevity risk, or the risk of exhausting one's assets in the course of a lifetime, is an important issue for retirees, particularly given gains in health and life expectancy. The rising cost of health care is also a concern (albeit more so in other countries such as the United States). Many retirees simply cope by purposefully limiting consumption, at the potential cost of leaving substantial resources behind in the event of an early death. Because of this, some suggest that partial annuitization could be a desirable way of hedging longevity risk, ensuring benefits as long as the annuity holder is alive (Mitchell and Utkus, 2004). Canadian retirees, being guaranteed a minimum lifetime income, are already *de facto* partly protected against longevity risk. However, many still have to make an implicit decision about annuitization: individuals with RRSPs ultimately have to close them out by transferring the RRSP into a RRIF, purchasing an annuity with an insurance company or taking a lump-sum payment.

In spite of the theoretical benefit of annuitization, in many developed countries the demand for annuities is relatively small. Many factors explain this: individuals may underestimate mortality risk or may have strong bequest motives; in countries where annuity markets are limited, pricing may be unattractive and less than transparent.

Nevertheless, rational models of risk-averse consumers have difficulty explaining limited annuity demand. Somewhat in contrast to the strong positive relationships in other areas



of behaviour, although annuitization is regarded by many people as a sensible option for insuring retirement consumption, financial literacy has not been shown to be clearly related to annuitization decisions at least in the United States (Brown, 2007; Brown, Kling et al., 2008; Brown, Casey and Mitchell, 2009). Agnew and colleagues (2008) found that more financially literate individuals are less likely to annuitize, while Brown, Casey and Mitchell (2008) observed the opposite. Overall, the evidence suggests that individuals tend to fundamentally and significantly undervalue a lifetime annuity (Mitchell and Utkus, 2004).

Behavioural factors may be very important in this case. First, thinking about survival and death can be inherently unpleasant, and those who find it so may thus be prone to procrastination about taking any decision (resulting in the default of non-annuitization). Mitchell and Utkus (2004) suggest that loss aversion is a powerful explanation: individuals worry about potential losses from dying sooner rather than later, and heavily discount the utility of coverage should they lead a long life. Brown (2007) and Brown, Casey and Mitchell (2008) propose an alternative view based on framing. When consumers think in terms of consumption, annuities are seen as valuable insurance, whereas when they think in terms of investment risk and return, annuities are perceived as a risky asset because the payoff depends on an uncertain date of death. Brown, Casey and Mitchell (2008) show that individuals prefer an annuity over alternative products when the question is framed in terms of consumption, but the reverse is true when information is presented in terms of risk and return (Brown 2007; Brown, Kling et al., 2008).

#### **4.5 Asking For and Using Financial Advice**

The provision of financial advice is often suggested as a means of helping consumers to compensate for a lack of financial literacy and to navigate the complexities of the financial landscape. Overall, fewer than half of Canadians report having a financial advisor (TD Bank Financial Group, 2010). However, it is not always clear that the neediest are those most likely to seek out advice. In a study of U.S. households, Hung and Yoong (2009) found that those with lower financial literacy were more likely to seek out advice—conditional on its

being free. However, in a study of German brokerage accounts, Hackethal, Haliassos and Jappelli (2009) found that the more financially experienced were more likely to use advisors, and suggested a theory of “babysitters” whereby wealthy individuals outsource their financial management to others.

It is likely that some level of financial awareness is necessary to understand the need for help, to distinguish between good and bad advice, and to use advice wisely. In the first instance, Malmendier and Shanthikumar (2007) show that small investors are more naive about incentives than large institutional investors: they tend to respond literally to the recommendations of security analysts, while large investors tend to discount stock recommendations from potentially biased sources. In a study conducted for the United States Securities and Exchange Commission, Hung and colleagues (2008) found that most people (including those who had employed financial professionals) did not have a clear understanding of the legal distinctions between investment advisers and broker-dealers. Many also reported confusion about the fees they paid. Respondents also tended to derive satisfaction from personal attention received, rather than the quality of professional services. Mintz (2009) notes that the research suggests that, on average, the cost of advice is not justified by performance for Canadians who pay for asset management.

On the flip side, even when good advice is given, it is not always followed: evidence from the United States suggests that, although investors often express a desire for more advice, it is unclear how and when they implement the advice they are given (Helman, VanDerhai and Copeland, 2007). There is a long-standing literature in psychology and organizational behaviour on general advice-taking. A robust finding is that individuals who receive advice by default tend to discount it significantly (Bonaccio and Dalal, 2006; Yaniv, 2004a; Yaniv, 2004b; Yaniv and Kleinberger, 2000). Although explicitly solicited advice is perceived as helpful, unsolicited advice or imposed support is perceived as intrusive and can even lead to negative responses (Deelstra et al., 2003; Goldsmith, 2000; Goldsmith and Fitch, 1997). Hung and Yoong (2009) found that, in the context of investment advice, individuals do indeed appear to respond more to advice that is actively sought out. Overall, however,

although some behaviour such as trading activity has been shown to be correlated with advice (Agnew, 2006) the relationship between the receipt of advice and positive outcomes remains weaker than we might expect.

## 5. Policy Tools and Strategies Relevant to Canada

### 5.1 Financial Literacy and Financial Education

If financial knowledge or literacy is the core problem, the intuitive policy solution would appear to be (and, indeed, has been for many years) financial education. In line with the OECD's work in this area (2005), we define *financial education* as the process by which financial consumers improve their understanding of financial products, concepts and risks, and through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being. In this context, providing *information* involves equipping consumers with facts, data and specific knowledge to make them aware of financial opportunities. Providing *instruction* involves ensuring that individuals acquire the skills and ability to understand financial terms and concepts through the provision of training and guidance. Giving *advice* involves counselling consumers about generic financial issues and products so that they can make the best use of the financial information and instruction that they have received. We also define a *financial education program* as a project or service (or a related collection of projects and services) that is systematically structured with the intention of meeting specific financial education goals.

In fact, many governments in Canada's peer group have made financial education a priority. The U.K. Financial Services Authority launched a program called "Building Financial Capability" in 2003, headed by a public-private steering committee to improve overall financial education. In the United States, the Department of the Treasury established the Office of Financial Education in 2002 to promote access to financial education tools. It also coordinates the efforts of the Financial Literacy and Education Commission, a group

composed of representatives from 20 federal departments, agencies and commissions. In Japan, France and the Netherlands, committees that bridge both the public and private sector have also been formed to provide national-level guidance on financial education (OECD, 2008).

Cakebread (2009) has noted that one reason Canada may lag globally in the area of financial education is the lack of a national strategy. In 2007, the Government of Canada proposed a \$3 million contribution to fund the first phase of the Financial Consumer Agency of Canada's financial literacy activities over a two-year period. In 2009, under the aegis of the national Economic Action Plan, the federal government set up a Task Force to make further recommendations on a national financial literacy strategy.

Training consumers in financial matters related to retirement savings is by no means new or unpopular, as is shown by the large number of existing financial education programs conducted by schools, governments and other organizations, including non-profit agencies and financial institutions. In countries with employer-sponsored plans, employers may also provide retirement seminars and counselling as part of their benefits programs, as often happens in the United States. Indeed, in its first major international survey of financial education programs, the OECD (2005) found that programs related to savings and investment for retirement account for an increasingly large share of all financial education programs. In 2008, the OECD (2008) released a study reviewing financial education programs related to insurance and private pensions that documented a continuing expansion among member countries as well as increased use of websites and Internet tools. In the wake of the financial crisis, several countries have intensified their existing programs, or have instituted new ones, to address the adverse effects on households. In the United States, Hung, Mihaly, and Yoong (2010) surveyed all federal financial literacy programs and found that a significant majority explicitly addressed retirement issues.

Despite this seeming abundance of programs (and a statutory obligation on the part of many governments to provide such education), no strong consensus exists about the

general effectiveness of financial education programs. As evaluation has become more widespread, so has the evidence base on financial education become correspondingly more diverse. There is much support for the view that financial education programs can positively affect financial knowledge and expressed intent (see, for instance, Braunstein and Welch [2002] for a general review of findings drawn from the United States). However, few studies have been able to demonstrate a compelling and direct relationship between financial education and behavioural change. For example, Clark and colleagues (2006) showed that although participants in a retirement savings seminar reported immediately afterward that they had changed goals and intended to save, there were only weak links between these intentions and actual behaviour. In the absence of unambiguous evidence that financial education alters behaviour, some have argued that financial education does not “work,” and instead have advocated the use of more paternalistic interventions. More emphatic critics further argue that financial education programs may even be counterproductive in so far as they can engender false confidence or feelings of guilt (Willis, 2008, 2009).

However, the current lack of conclusive results may be explained in part by the diversity of programs utilized, and in part by the lack of systematic evaluation. A detailed commentary on these methodological issues lies beyond the scope of this report, but a few broad points should be mentioned. First, the chain of relationships linking education and behavioural change is complex, and many programs are designed with the fairly modest aim of addressing only one part of this chain (Lyons et al., 2006). Lusardi (2008) notes that it is hardly surprising to find that one retirement seminar does little to change behaviour, or that widespread financial illiteracy cannot be cured by a one-time event at which employers give employees the opportunity to explore their benefit options whereas evidence shows that programs with a sustained series of education sessions can be effective in stimulating saving. Second, true impact evaluation is still often not performed, particularly in circumstances where either the scope or the budget of the program is limited (Lyons et al., 2006). At this point, researchers agree, the current state of program

evaluations precludes definitive conclusions about the impact of financial education (see, for instance, Atkinson, 2008; Fox and Bartholomae, 2008).

Indeed, given the diversity of financial education interventions, the question of whether financial education as a whole works is inherently ill-posed, as much depends on the specifics of each program. What is generally clear, however, is that many financial education programs tend to show few immediate effects on behavioural outcomes, and in many cases a full evaluation of the program's true long-term impact may not be practicable. As with any interventions, such programs can be wasteful, ineffectual or even counterproductive when poorly implemented, whereas in other settings financial education is appropriate and useful. Some questions remain open for researchers as they determine what works best. For instance, who can best provide financial education for retirement savings? What role does pedagogy play? What are the relative costs and benefits of different forms of dissemination, such as mass-media campaigns or more intensive methods such as one-on-one counselling?

Based on the current state of evidence, potential ways to enhance existing public programs targeted at retirement preparedness may include the following:

**Low costs to sign up and participate.** Given that procrastination and inertia are likely to inhibit financial planning for retirement, it is critical to minimize the barriers to receiving financial education. Meier and Sprenger (2008) demonstrate that present-biased individuals have more pathological financial behaviour, but are also least likely to sign up for financial education programs. Programs need to be easily and cheaply accessible for all. For older individuals, this may involve local neighbourhood or employer associations, or popular physical/virtual communities.

**Appropriate timing and location: expanding school and work-based programs.** Rabin (1998) suggests that financial education may work better in a context where people are cognitively prepared (e.g., work or school). Many advocate general financial education in a

school-based setting as a means of cultivating basic skills from the start. Bernheim, Garrett, and Maki (2001) show, for instance, that financial education in schools is related to higher savings rates in adulthood and Bayer, Bernheim and Scholz(2009) show that employer provision of retirement seminars can positively affect employee participation in voluntary savings plans. However, this would not be of assistance to the current generations of older individuals; on the flip side, it is not clear that retirement is particularly salient for the young, and information may need to be reinforced further at the appropriate time. Tufano and Schnieder (2008) note that, for most Americans, the primary source of funds is employment, and that a number of saving options aim to divert funds at this source, making the workplace both the most substantively relevant and the most psychologically salient place for financial education. More ad hoc programs should exploit opportunities to offer education when the context is especially salient (Rabin, 1998): these could include “teachable moments” just before a key financial decision, the attainment of a qualifying age for particular government benefits, recurrent events such as tax deadlines and pension distributions, or periods such as the current financial crisis.

**Explicit, tightly related follow-on steps for participants.** Although timing matters, research also suggests that making a direct connection with a small number of concrete actions is the best way to ensure that the motivation and knowledge gained during financial education programs translates into behavioural change. For instance, researchers studying a financial access initiative found that the presence of a bank representative who could complete most of the necessary paperwork to open an account had a large positive effect during a financial education event (Bertrand, Mullainathan and Shafir, 2006). Providing simple tools or checklists to be carried out may play a similar role, reducing the cognitive barriers to action and enabling follow-on steps to be taken quickly while motivation is high.

**Intensity of program and thoughtful presentation.** As with any kind of educational intervention, the format and intensity of programs clearly matter for results. In particular, the presentation of material on retirement preparation has to walk a fine line: while the

subject may be viewed as boring or uninteresting, the program has to be sufficiently serious to retain sufficient credibility. The material should be made vivid in creative ways (see for instance, the use of video testimonials from individuals that the viewer can easily identify with by Lusardi, Keller and Keller (2009) and by the New Zealand Retirement Commission at [www.sorted.org.nz](http://www.sorted.org.nz)). For different groups, specific framing or marketing techniques may be needed: for example, a significant body of research suggests that gender has an important differentiating role to play in financial decision-making—women and men differ in their preferences, investment behaviour and responses to the framing of choices (Croson and Gneezy, 2009; Barber and Odean, 2001). Older populations experience changes in cognitive ability and an increased role of affect in decision-making, suggesting that programs targeting this group should be particularly sensitive to potential emotional triggers (Agarwal et al., 2007). For the young, who may overly discount the future needs of retirement, emphasis could be placed on the immediate benefits of taking a few small steps today.

**Targeted content.** For some groups, content has to be specific and relevant. Recent immigrants, for instance, may require more introduction to the Canadian retirement system and the requirements for receiving public benefits. This is important not only for efficient delivery, but also to engage and retain attention. Indeed, where possible, for smaller and more intensive programs Braunstein and Welch (2002) suggest using credit score records and other demographic information to develop education materials specific to the needs and difficulties of each individual. Alternatively, short and simple diagnostic tools could be used to collect basic data about financial experience, subjective preferences and knowledge, as well as tests for common psychological biases.

**Leveraging social networks in savings interventions.** One example of using social networks to reinforce positive behaviour is the America Saves! Campaign in the United States, which applies a traditional model of using peer groups to encourage savings. Begun in 2001, the program aims to encourage people to save by setting up city-wide savings campaigns based in education and encouragement. Enrollees make a savings plan and



pledge to meet their savings goals, supported by various resources such as print media, one-on-one meetings, and saver clubs. Given the lack of financial literacy among immigrant populations in Canada, for instance, interventions that address such specific communities may carry particular weight.

In addition, promulgating better financial education is only one part of the strategy needed to move forward. Supporting the regular collection and analysis of data related to financial capability through the CFCS is an important step. A next step, given the state of evaluation, is to take stock of financial education programs already in place and to bring the whole together in the context of an overall evaluation framework, as suggested by Cakebread (2009). Such an exercise is important to first understand what is currently being done, to identify potential duplication or unmet needs and, finally, to set down standards of best practice.

## **5.2 Behavioral Economics and Policy Initiatives**

While debates on financial education continue, behavioural economics has captured the attention of policy-makers. In 2007, the Australian Government Productivity Commission organized a Roundtable on Behavioural Economics and Public Policy (AGPC, 2008). A similar meeting to discuss behavioural economics was also held in the United States by the Federal Trade Commission in 2007. In 2008, the European Commission Director General for Health and Consumers convened a conference entitled “How Can Behavioural Economics Improve Policies Affecting Consumers?”

As behavioural economics has gained popularity, many innovations in program and product design have been developed to compensate for—or even leverage—known cognitive biases. Below, we highlight some of the better-known strategies that are currently in place or have been suggested, focusing only on practices that are relevant to retirement preparedness.

**Improving choice architecture in retirement savings plans and products.** An obvious first principle is to design choice environments that account for limited attention and potential information overload. In the case of retirement savings plans, simplifying enrolment and investment choices is a clear first step. For instance, Iyengar, Huberman and Jiang (2004) suggest that participation in private pension plans may be boosted by offering only a handful of carefully selected funds, as compared to plans offering a bewildering array of options. Choi, Laibson and Madrain (2006) suggest that Quick Enrollment™, a mechanism that simplifies enrolment in employer-sponsored retirement plans by giving individuals the option to enrol at a pre-selected contribution rate and asset allocation, can also boost enrolment rates.

Indeed, providing a simple, easily accessible alternative savings vehicle can be a powerful intervention. Although RRSPs have been declining, TFSAs introduced in 2008 have been extremely well received, although the total amount that may be contributed in one year is relatively small. In part, these trends reflect differences in product features, but TFSAs are also easier to open and access for the ordinary consumer. Expanding the scope of TFSAs along the lines of Roth IRAs<sup>1</sup> in the United States may be an interesting policy option to explore further. Davies (2009) suggests that in the Canadian context the creation of new tax-advantaged products is not likely to crowd out other savings, and may indeed increase net savings by an estimated 30 per cent.

As for more dramatic changes to the choice environment, default options can be put in place to overcome inertia and achieve desired outcomes, particularly in the case of retirement savings plans. The most widely cited example of this is to switch the default option for employee savings plans from non-enrolment to enrolment at a default contribution rate (while allowing the individual to opt out if desired). Changing the default to enrolment (with opt-out) dramatically increases participation: results observed across different firms and countries are often in the range of 80 to 90 per cent. Beshears and

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1 Roth IRAs are a type of individual retirement account for which contributions, but not withdrawals (subject to certain conditions), are taxed.

colleagues (2009b) demonstrate that defaults have a strong impact on retirement savings outcomes at all stages of the savings life cycle, including savings plan participation, savings rates, asset allocation and post-retirement savings distributions.

The automatic IRA currently proposed in the United States is intended to address the problem of individuals without retirement savings plans by imposing a mandatory auto-enrolment program on employers. In brief, the proposal requires all but the smallest firms to automatically enrol their employees into tax-advantaged individual retirement accounts (IRAs) if they do not offer their own retirement plans, with a minimum of 3 per cent of pre-tax earnings to be deposited directly into these accounts. Although the IRAs would be held at private-sector financial service providers, the default allocation would be held in a statutorily determined low-cost investment option, and other investment alternatives would also be statutorily prescribed. Under this plan, employees would retain the option to opt out, increase their allocations or change their investments.

As previously mentioned, however, the power of inertia cuts both ways: many individuals will stick with the default option whether or not it is optimal for them. One approach has been to tailor the default option as far as possible to individual circumstances: in some countries, such as the United States, plan fiduciaries are increasingly selecting life-cycle funds (in which portfolios are rebalanced toward safer assets as the individual approaches retirement age) as the most appropriate default option. This is also the most common default choice in the Latin American region (including pension systems in Chile, Mexico and Peru), where individuals who do not make an active investment choice are allocated to the provider's different funds according to age (OECD, 2008). Another option is to force active decision-making rather than impose a default: in the United States, Carroll and colleagues (2009) found that compelling new hires to make active decisions about 401(k) enrolment raised the initial fraction that enrolled by 28 percentage points relative to a standard opt-in enrolment procedure, producing a savings distribution three months after hiring that would have taken 30 months to achieve under standard enrolment.

**Encouraging wider use of voluntary commitment devices.** An increasing number of financial products address savings discipline by incorporating a commitment feature in the form of withdrawal restrictions or a savings commitment. Such devices may be incorporated into public programs: as mentioned previously, in Canada, withdrawal restrictions on RRSPs are a prime example of such commitment devices (unlike TFSAs, which have no such restrictions). Ashraf, Karlan and Yin (2006) have shown that there can be significant demand for such products from consumers who have self-control problems but are aware of their own biases. As such, one approach may be to emphasize these restrictions as a positive and desirable feature for consumers who have trouble saving.

Another strategy is to promote the creative use of savings commitments by employers in the context of savings plans, or by financial institutions. One of the most well-known arrangements is Save More Tomorrow, a strategy to increase savings developed by Thaler and Benartzi (2004). Individuals are offered the option to participate in their retirement savings plan at a low initial contribution rate that automatically escalates to the maximum in later pay periods, a design that helps overcome loss aversion by pushing perceived sacrifices into the future while taking advantage of inertia to ensure that the savings are realized. In their evaluation, Thaler and Benartzi (2004) found that Save More Tomorrow not only successfully increased average savings but was also extremely popular, achieving high voluntary participation and retention rates.

It should be noted that the use of commitment devices is not incompatible with a desire for contingent liquidity or emergency withdrawals, and that some exemptions of this type may also be added to increase the appeal of savings plans (for instance, the ability to borrow against plan balances in times of hardship).

**Taking advantage of transfer programs to build savings.** Given that many tend to regard lump-sum transfers as particularly “savable,” opportunities can be built into transfer programs to enhance saving. For instance, in the United States, several non-profit and private-sector entities such as professional tax-preparers have launched initiatives to

leverage the opportunity provided by tax deadlines and refunds. These include using the prospect of future refunds to motivate unbanked filers to open savings accounts, as well as providing the option to divert funds to savings months or weeks before a tax refund is received. Starting in January 2007, the United States Internal Revenue Service began to allow multiple destinations for refunds with its introduction of Form 8888, a policy change that has significantly lowered the costs of facilitating such programs (Tufano and Schneider, 2008).

**Enabling the creative use of incentives such as lotteries.** Lotteries can be used as an incentive for positive behaviour by exploiting individuals' natural tendency to be overly optimistic and to overweight small probabilities. One application is to make savings more attractive by adding lotteries that give savers the chance to win randomly allocated prizes. This has been shown to be particularly effective among consumers with low incomes (Haisley et al., 2008; Haisley, Mostafa and Loewenstein, 2008). Although regulations against gambling have prevented the widespread adoption of this design (particularly in the United States), lotteries have in fact been used to promote savings and investment for centuries (Tufano and Schneider, 2008). A contemporary example is the United Kingdom's Premium Bonds, which award random prizes as part of the savings product's return.

Private financial institutions in Kenya, Mexico, Venezuela, Columbia, Japan and South Africa have also marketed savings products with a lottery component. In an example also related to the previous discussion, ING Bank Canada has previously advertised an opportunity for clients to win cash equivalent to the amount of their tax refund provided they chose to have the funds deposited directly into a savings account.

**Improving financial product disclosures.** Although improving disclosure is often a first-order demand from entities concerned with consumer protection, the impact of existing consumer and investment disclosures is surprisingly mixed. In the context of investment disclosures, Choi, Laibson and Madrian (2010) show that presenting potential investors with a one-page summary sheet that explained charges and showed how to calculate the

impact of fees on portfolio value had only modest positive effects on altering portfolio allocations. Beshears and colleagues (2009a) compared individuals' performance using newly adopted Summary Prospectuses from the United States Securities and Exchange Commission against standard prospectuses and found that, although simplified disclosure significantly improved satisfaction and reduced time on task, actual choices were not much affected. In another example, fee disclosure in the context of 401(k) plans in the United States is intended to increase transparency for plan participants, but the array of fees and expenses that are eventually reported may end up alienating the very population it is meant to serve. Evidence from multiple settings suggests that excessive disclosure can even harm consumers by introducing unnecessary confusion (Jacko and Pappalardo, 2004; Better Regulation Executive, 2008).

As the Better Regulation Executive report points out, disclosure regulations that are ineffective may have a negative overall effect upon welfare, as they are costly to implement and oversee, and ultimately appear to leave consumer behaviour unchanged. However, it should also be noted that behavioural research does suggest ways to improve disclosure. First, given the often limited attention of consumers, the principle that “more is better” should be reconsidered. Disclosure presentations should emphasize the saliency of key facts. When comparisons are needed, appropriate use of graphics and tables should be made and standardized information formats for all firms in a given industry should be provided to avoid marketing biases. In particular, an effort should be made to highlight particular information that is likely to be underweighted by consumers or shrouded by firms, such as the true probability of insurance losses or fees for mutual fund purchases.

### **Setting, disseminating and promoting best practices for the financial industry.**

Although many of the steps outlined above are relevant mostly to public programs, there is also a role for public entities in leading and directing the activities of private actors. Various initiatives (including that of the OECD and others) are currently aimed at creating common benchmarks and best practices in this area. Kahneman and Riepe (1998) and Benartzi (2010), for example, provide simple checklists for financial advisors and financial services

providers that could be emulated and disseminated for use by interested firms. Other means of supporting best practices can be more financially explicit in nature: for instance, Barr, Mullainathan and Shafir (2008) propose giving pay-for-performance tax credits to banks that offer low-income accounts with some of the features mentioned above.

## 6. Conclusion

The Canadian retirement system serves the majority of its population remarkably well with respect to basic needs. However, there is considerable scope for individual choice to have a significant impact on retirement outcomes. Furthermore, research suggests that there is no single silver bullet that improves financial decision-making: retirement planning is a complex process, and financial literacy as well as a host of behavioural factors all may have a role to play. As such, forward-looking policy-makers who are concerned with ensuring the continued welfare of a growing older population will be best served by working to strengthen core financial skills among the population as well as countering and perhaps even exploiting known biases in decision-making.

The background research suggests that opportunities exist in multiple areas: these include the expansion of workplace and school-based financial education programs as well as point-of-action programs, the expansion of successful savings products such as TFSAs, the simplification of existing retirement savings plans and more careful structuring of default options, the creative use of public transfer programs to increase savings, and more emphasis on the design of disclosure in the realm of financial products and services.

A final major observation is implicit in the discussion: this report has relied heavily on findings and potential strategic implications drawn from many settings comparable to Canada. More data from Canada are needed, not only to document the breadth and impact of financial capability in more detail, but also to map out the breadth and impact of behavioural factors in decision-making. Mintz (2009) suggests that understanding individual investment choices and savings instrument design remain two key gaps in the knowledge base needed to develop sound retirement policy. The CFCS is a significant first

step, but more research undertaken in greater depth is clearly needed to support more policy-specific recommendations in the future.



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## Appendix

### Objective assessment questions, *Canadian Financial Capability Survey*

1. If the inflation rate is 5 per cent and the interest rate you get on your savings is 3 per cent, will your savings have at least as much buying power in a year's time?

- Yes
- No
- Don't know

2. A credit report is...?

- A list of your financial assets and liabilities
- A monthly credit card statement
- A loan and bill payment history
- A credit line with a financial institution
- Don't know

3. Who insures your stocks in the stock market?

- The National Deposit Insurance Corporation
- The Securities and Exchange Commission
- The Bank of Canada
- No one
- Don't know

4. True or false? By using unit pricing at the grocery store, you can easily compare the cost of any brand and any package size.

- True
- False
- Don't know

5. If each of the following persons had the same amount of take home pay, who would need the greatest amount of life insurance?

- A young single woman with two young children
- A young single woman without children
- An elderly retired man, with a wife who is also retired
- A young married man without children
- Don't know

6. If you had a savings account at a bank, which of the following statements would be correct concerning the interest that you would earn on this account?
- Sales tax may be charged on the interest that you earn
  - You cannot earn interest until you pass your 18th birthday
  - Earnings from savings account interest may not be taxed
  - Income tax may be charged on the interest if your income is high enough
  - Don't know
7. Inflation can cause difficulty in many ways. Which group would have the greatest problem during periods of high inflation that lasts several years?
- Young working couples with no children
  - Young working couples with children
  - Older, working couples saving for retirement
  - Older people living on fixed retirement income
  - Don't know
8. Lindsay has saved \$12,000 for her university expenses by working part-time. Her plan is to start university next year and she needs all of the money she saved. Which of the following is the safest place for her university money?
- Corporate bonds
  - Mutual funds
  - A bank savings account
  - Locked in a safe at home
  - Stocks
  - Don't know
9. Which of the following types of investment would best protect the purchasing power of a family's savings in the event of a sudden increase in inflation?
- A twenty-five year corporate bond
  - A house financed with a fixed-rate mortgage
  - A 10-year bond issued by a corporation
  - A certificate of deposit at a bank
  - Don't know

10. Under which of the following circumstances would it be financially beneficial to borrow money to buy something now and repay it with future income?

- When something goes on sale
- When the interest on the loan is greater than the interest obtained from a savings account
- When buying something on credit allows someone to get a much better paying job
- It is always more beneficial to borrow money to buy something now and repay it with future income
- Don't know

11. Which of the following statements is not correct about most ATM (Automated Teller Machine) cards?

- You can get cash anywhere in the world with no fee
- You must have a bank account to have an ATM card
- You can generally get cash 24 hours a day
- You can generally obtain information concerning your bank balance at an ATM machine
- Don't know

12. Which of the following can hurt your credit rating?

- Making late payments on loans and debts
- Staying in one job too long
- Living in the same location too long
- Using your credit card frequently for purchases
- Don't know