

CANADIAN *Social Trends*

Features

Working at home
Conservation at home
Ethical consumption
Financial knowledge
Family debt
Bankrupt pre-retirees

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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- ^p preliminary
- ^r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published

Working at home: An update

by Martin Turcotte

Introduction

In the post-industrial economy, where nearly 3 out of 4 jobs are in services, a growing number of workers are able to do their work with very few tools—basically a telephone and a computer with Internet access. For most workers, these tools are readily available at home, since many households adopted new information technologies at a rapid pace in the 2000s.¹

A number of factors came together resulting in the increasing popularity of working at home over the last decade: a greater number of jobs requiring computer use, more willingness by some employers to allow working at home (particularly in the public sector), increasing public awareness about work–life balance,² etc. However, although the working-at-home expansion has been observed to some extent among self-employed workers, the same cannot be said for employees. For example, an earlier study by Statistics Canada revealed that, after substantial growth in the 1990s, there was a very small increase in the proportion of employees working at home between 2000 and 2005 (either full- or part-time, excluding overtime).³ Do the most recent statistics show the same trend?

This question is addressed in the first part of this article, with data from various cycles of the General Social Survey from 2000 to 2008. The characteristics of workers who

are most likely to work at home are outlined in the second part of the article, and the reasons why some people work at home are examined in the third part of the article. The fourth section focuses on how the place of residence and distance from work impact the incidence of working at home. There is also a text box on perceptions about working at home and another on work–life balance.

Evolution of working at home between 2000 and 2008

The number of employees working at home in 2008 was 1,748,600, compared with 1,425,700 in 2000. Despite this increase, the proportion of employees working at home remained relatively stable during the 2000s (Chart 1). In 2008, 11.2% of employees worked at home, 1 percentage point more than in 2000.⁴ While there is an upward trend, the increase is small and the pace moderate.⁵

The situation is somewhat different for self-employed workers—the incidence of working at home for this group has increased in recent years. After a few years of stagnation, their participation rate climbed from 54% to 60% between 2006 and 2008 (Chart 1). In other words, 1,842,000 self-employed persons worked at home in 2008.

The combined effect of the slight increase for employees and the more substantial one for the self-employed pushed the overall proportion of

people working at home up about 2 percentage points between 2000 and 2008 (from 17% to 19%).

In general, employees who work at home do so on a part-time basis. In 2008, the median hours worked at home by full-time employees was 8 hours per week, unchanged from 2000 (for employees with the same characteristics) (data not shown). A minority worked at home more than one day per week, with 67% of them doing so for 10 hours or less per week.

More than 1 in 5 university-graduate employees work at home

Not all jobs provide the opportunity to work at home. Professionals' duties, for example, are often well-suited to working at home. However, customer-service (e.g., retail trade and accommodation industry) or assembly-line (manufacturing) workers seldom, if ever, have the same opportunity. Research has shown that, overall, more highly educated employees, who often hold jobs involving greater independence, found it easier than others to get permission from their employers to work at home.⁶

The latest data from the 2008 General Social Survey (GSS) confirm the findings of previous studies on the existence of disparities between occupational groups in the incidence of working at home.⁷ For example, the proportion of employees who

What you should know about this study

General Social Survey

This study uses data from the GSS from the 2000 to 2008 period. The General Social Survey (GSS) is conducted every year. GSS data for 2002 and 2007 are not presented in this article because only persons aged 45 and over were surveyed in those years. In the 2004 cycle, there were no questions about working at home.

The target population for the 2008 GSS was the non-institutional population aged 15 and over living in Canada's 10 provinces. The data were collected from February 1, 2008, to November 30, 2008. During that period, 20,000 people were interviewed. This article focuses on workers aged 15 and over, yielding a sample of 12,897 workers representing nearly 18,977,900 workers in 2008 (see definition below).

Workers: Employees and the self-employed

Workers in this study are persons who had paid employment or were self-employed at some point in the previous 12 months. For the majority of them, working at a paid job or being self-employed was their main activity during the year. There are two types of workers: *employees* (paid workers) and the *self-employed*. About 85% of all workers are employees. This study includes workers from every industry, including the public sector, for every reference year (2000, 2001, 2003, 2005, 2006 and 2008).

Working at home

To identify people who worked at home, workers were asked the following question: "Some people do all or some of their paid work at home. Excluding overtime, do you usually work any of your scheduled hours at home?" Those who answered "yes" were asked, "How many paid hours per week do you usually work at home?"

The expression "working at home" rather than "teleworking" is used in this article. First, the concept of teleworking applies mostly to employees, and this study also provides information on the self-employed.¹ Second, while teleworking does not necessarily involve working at home, working at home does. Third, telework is implicitly associated with the use of information technology. In contrast, while most people who work at home² use the newer technologies, not all of them do so (for example, some artists or craftspeople can easily work at home without such devices).

Overtime worked at home, whether paid or not, is not included in this study's definition of working at home.

Satisfaction with work-life balance

In the 2008 GSS, respondents were asked, "How satisfied are you with the balance between your job and home life?" Their response options were "very satisfied," "satisfied," "neither satisfied nor dissatisfied," "dissatisfied" and "very dissatisfied,"

1. For more detailed information on teleworking, visit the InnoVisions Canada website (www.ivc.ca).
2. Sullivan, Cath. 2003. "What's in a name? Definitions and conceptualisations of teleworking and homeworking." *New Technology, Work and Employment*. Vol. 18, no. 3. p. 158-165.

had worked at home in 2008 was 23% for professionals and managers, compared with 7% for sales and service workers (Table 1). There was also a large difference based on education: 22% of university graduates worked at home, compared with 7% of high school graduates.

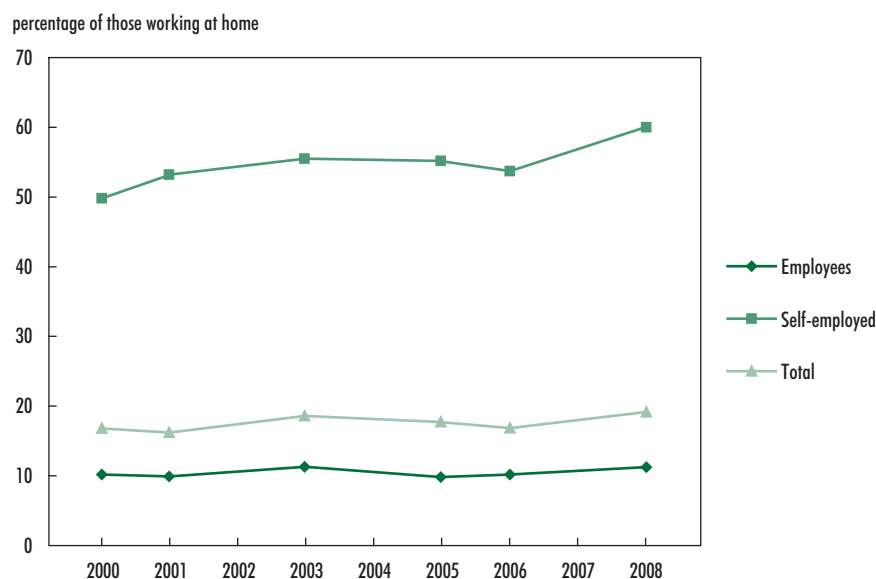
The variation in participation rates by worker characteristics was reflected in the profiles of employees who do and those who do not work at home. In 2008, for example, 54% of all employees who worked at home

had a university degree, compared with 25% of those who never worked at home. Similarly, 55% of employees who worked at home at least occasionally were in professional or managerial jobs, compared with 23% of employees who did not work at home. In addition, 52% of employees who worked at home had a personal income of more than \$60,000 a year, compared with 25% of employees who did not work at home (data not shown).

Professionals' tendency to work at home varies by industry

Professionals are among the workers most likely to work at home. Though poorly documented, their tendency to work at home varies appreciably by industry (Chart 2). In the health care and social assistance sector, for example, 8% of professional employees worked at home (Chart 2). This is probably due to the fact that physicians and nurses have to deal directly with their patients. In comparison, 27% of educational

Chart 1 The incidence of working at home grew faster for the self-employed than for employees, 2000 to 2008



Note: Since data were not collected for the study population in 2002, 2004 and 2007, an average for the preceding year and the following year has been used to illustrate the trend better.

Source: Statistics Canada, General Social Survey, 2000, 2001, 2003, 2005, 2006 and 2008.

services professionals worked at home at least occasionally. Aside from their work in the classroom, teachers have various ancillary duties associated with class preparation and homework and test correction that can generally be performed at home.

In short, since the nature of the work performed varies from one industry to another (and even within industries), it may be difficult to ascribe greater work-at-home opportunities to specific occupational groups.

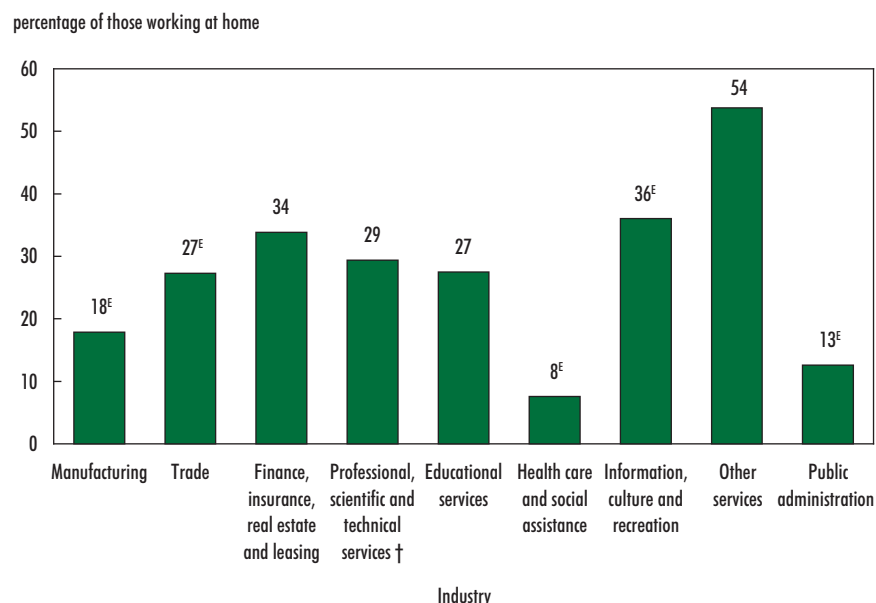
Among employees, women are less likely than men to work at home

For all types of employees combined, the data show that women were slightly less likely than men to work at home (10% and 12% respectively).⁸ Among professional employees, however, the gap between men and women was wider: 29% of male professionals worked at home compared with 19% of female professionals in 2008. This difference may be attributable in part to the fact that women are overrepresented among health professionals, especially nursing professionals (who seldom work at home).

Employees who usually worked 50 or more hours per week, had on-call or irregular work schedules and were not unionized were also among those with a higher-than-average incidence of working at home (Table 1). An analysis of data from Statistics Canada's Workplace and Employee Survey has shown that non-unionized workers (especially those working for smaller businesses) had more opportunities for variable schedules and working at home.⁹

In addition, employees who had children aged 12 and under were somewhat more likely than those who did not to work at home (13% and 10% respectively).

Chart 2 Professionals' tendency to work at home varied by industry, 2008



† reference group

Source: Statistics Canada, General Social Survey, 2008.

Table 1 Percentage of people working at home, by select characteristics, 2008

| | Employees | Self-employed | All workers | | Employees | Self-employed | All workers |
|---|------------------|------------------|-----------------|--|------------------|------------------|-----------------|
| percentage working at home | | | | percentage working at home | | | |
| Total | 11 | 60 | 19 | Unionized | | | |
| Men † | 12 | 56 | 20 | No † | 13 | ... | 13 |
| Women | 10* | 67* | 18* | Yes | 8* | ... | 8* |
| Highest level of educational attainment | | | | Work schedule | | | |
| Less than high school | 3 ^{E*} | 41* | 10* | Days/regular † | 12 | 53 | 18 |
| High school diploma † | 7 | 59 | 14 | Evenings or nights | 3 ^{E*} | 45 ^E | 5 ^{E*} |
| College or trades diploma | 9* | 59 | 17* | Rotating or split schedule | 4 ^{E*} | 69* | 10* |
| University degree | 22* | 69* | 31* | On call, irregular or other | 19* | 73* | 41* |
| Occupation | | | | Age | | | |
| Management | 23 | 56* | 31 | 15 to 19 | 3 ^{E*} | 27 ^{E*} | 4 ^{E*} |
| Professional staff † | 23 | 71 | 33 | 20 to 24 | 6* | 55 | 10* |
| Technical staff, technicians and technologists | 13* | 72 | 25* | 25 to 34 | 12 | 56 | 17* |
| Office staff | 9* | 67 | 15* | 35 to 44 † | 13 | 62 | 22 |
| Sales and service | 7* | 53* | 12* | 45 to 54 | 14 | 60 | 23 |
| Trades, transport and equipment operators | 2 ^{E*} | 40* | 9* | 55 and over | 12 | 63 | 27* |
| Occupations unique to primary industry | 9 ^{E*} | 61 | 33 | Presence of a child 12 and under in the household | | | |
| Processing, manufacturing and utilities | F | 54 ^E | 4 ^{E*} | Total | | | |
| Industry | | | | No † | 10 | 61 | 19 |
| Agriculture | 16 ^E | 70 | 48 | Yes | 13* | 58 | 21* |
| Forestry, fishing, mining, oil and gas | 10 ^{E*} | 64 | 18* | Men | | | |
| Utilities | F | F | F | No † | 12 | 58 | 20 |
| Construction | 7 ^{E*} | 48* | 19* | Yes | 13 | 50* | 20 |
| Manufacturing | 7* | 55* | 9* | Women | | | |
| Trade | 8* | 58* | 13* | No † | 9 | 65 | 16 |
| Transportation and warehousing | 8* | 34 ^{E*} | 12* | Yes | 13* | 71 | 21* |
| Finance, insurance, real estate and leasing | 16* | 73 | 30* | Season | | | |
| Professional, scientific and technical services † | 26 | 77 | 44 | Winter † | 12 | 62 | 20 |
| Business, building and other support services | 9 ^{E*} | 46* | 18* | Spring | 11 | 62 | 19 |
| Educational services | 20* | 64 | 23* | Summer | 12 | 56 | 19 |
| Health care and social assistance | 8* | 63* | 15* | Fall | 11 | 61 | 19 |
| Information, culture and recreation | 16* | 71 | 25* | Distance between home and work | | | |
| Accommodation and food services | 3 ^{E*} | 42* | 6* | 0 to 4 km † | 7 | 40 | 10 |
| Other services | 25 | 46* | 32* | 5 to 9 km | 9 | 42 | 12 |
| Public administration | 8* | F | 8* | 10 to 29 km | 10* | 42 | 13* |
| Hours worked per week | | | | 30 km or more | 13* | 48* | 16* |
| 0 to 29 † | 7 | 63 | 18 | Area of residence | | | |
| 30 to 39 | 9* | 64 | 14* | Census metropolitan area | 12* | 61 | 20 |
| 40 to 49 | 10* | 57 | 14* | Toronto | 13* | 63 | 22* |
| 50 or more | 23* | 60 | 35* | Montréal | 11 | 60 | 17 |
| | | | | Vancouver | 14* | 63 | 24* |
| | | | | Ottawa—Gatineau | 16* | 64 | 23 |
| | | | | Calgary | 11 ^E | 56 | 18 |
| | | | | Edmonton | 12 ^E | 50 | 19 |
| | | | | Québec | 16 ^{E*} | 57 | 21 |
| | | | | Winnipeg | 12 | 54 | 17 |
| | | | | Other metropolitan areas | 10 | 60 | 17* |
| | | | | Census agglomeration | 8 | 55 | 16* |
| | | | | Outside urban areas † | 9 | 61 | 20 |

† reference group

* statistically significant difference from reference group at $p < 0.05$

Source: Statistics Canada, General Social Survey, 2008.

Among the self-employed, women are more likely than men to work at home

In some respects, the differences in working-at-home participation across the various categories of employees were echoed in the self-employed population. For example, self-employed workers with a university degree were also more likely to work at home. However, there were some differences—among self-employed workers, women were more likely than men to work at home (67% and 56% respectively), whereas the opposite was true among employees.

Why work at home?

Working at home is generally thought of as an option that, when available, allows employees the choice of whether or not they wish to work at home. For many employees, however, working at home all or some of the time is not necessarily a choice. The most common reason for working at home (25% of employees) was that it was a job requirement or they had no choice (Table 2).¹⁰ The next most common reasons were that it provided better working conditions (23%) and that home was their usual place of work (18%).

The likelihood of declaring home as the usual place of work varied depending on certain worker characteristics. For instance, 30% of part-time employees (those working less than 30 hours per week) said home was their usual place of work, compared with 14% of employees working between 30 and 49 hours per week. College or university graduates, on the other hand, were less likely to identify their home as their usual place of work—they were more likely to say that working at home provided better working conditions.

Not surprisingly, employees and the self-employed with a child at home were more likely to say that they were working at home for family reasons. Unlike employees, female self-employed workers were more likely than their male counterparts to be working at home for family-related reasons (caring for children or other family members, or other personal or family responsibilities). In 2008, 12% of female self-employed workers reported that they were working at home for family reasons, compared with 3% of their male counterparts (Table 2). Moreover, 25% of female self-employed workers with children aged 12 and under at home said they were working at home for family-related reasons (compared with 10% of men in the same situation) (data not shown). Some self-employed women probably chose to work at home (temporarily or permanently) because of their family responsibilities. This group of women entrepreneurs has even been dubbed 'mompreneurs'¹¹ by some.

The collection of information on reasons for working at home began only recently. There were no noteworthy changes in the reasons given by employees and the self-employed between 2005 and 2008. At the moment, no information is available regarding reasons for not working at home.

Employees who live outside urban areas are less likely to work at home

When the new information technologies emerged and gained popularity, some authors speculated that working at home might become more widespread and that workers might move away from metropolitan areas, because they could perform their duties without ever going to the office.¹² However, those predictions

never materialized. Only a minority of employees work at home, almost none do it on a full time basis, and metropolitan areas continue to grow.

In 2008, employees who lived in metropolitan areas (12%) were more likely than those who did not (9%) to work at home (Table 1). This is consistent with the results of a similar study in the United States.¹³ According to the authors, face-to-face contact between workers is too important, especially for worker well-being, sense of attachment to the company, innovation, productivity and knowledge-sharing. In their view, the decentralization of the workplace is highly unlikely in the short term.

Distance between home and work is positively correlated with the incidence of working at home

Encouraging more workers to work at home occasionally is frequently mentioned as a way to help reduce traffic congestion.¹⁴ The opportunity to avoid heavy traffic or driving many kilometres to work on a daily basis might encourage people to work at home for a few days from time to time. That is what the figures suggest, to some degree. Of employees who lived within 4 kilometres of their workplace, 7% had worked at home, compared with 13% of those who lived at least 30 kilometres away (Table 1).

However, living in an area where commuting between home and work was not so easy was not associated with a higher frequency of working at home. In Canada, the two metropolitan areas with the longest average commuting times are Toronto and Montréal,¹⁵ but the proportion of employees who had worked at home was not appreciably higher there than in areas with shorter average commuting times (Table 1).

Table 2 Main reasons given for working at home, 2008

| | Family-related reasons (care of children or others) | Work requirements, no choice | Home is usual workplace | Better working conditions | Saves time, money | Other |
|--|---|------------------------------------|-------------------------------|---------------------------------|-------------------------|-------------------|
| percentage of employees | | | | | | |
| Total | 9.3 | 25.4 | 17.9 | 23.3 | 15.5 | 8.6 |
| Men † | 8.1 | 24.5 | 16.0 | 24.9 | 16.7 | 9.8 |
| Women | 10.7 | 26.4 | 20.2 | 21.4 | 14.1 | 7.2 |
| Highest level of educational attainment | | | | | | |
| High school diploma † | 6.1 ^E | 29.2 | 26.5 | 13.8 ^E | 12.7 ^E | 11.9 ^E |
| College or trades diploma | 10.2 ^E | 22.1 | 20.0 | 24.9* | 15.6 | 7.2 ^E |
| University degree | 10.2* | 25.1 | 13.5* | 26.4* | 16.8 | 8.0 |
| Presence of a child 12 and under in the household | | | | | | |
| No † | 3.6 ^E | 26.2 | 20.2 | 24.6 | 15.6 | 9.8 |
| Yes | 20.5* | 23.6 | 13.3* | 20.9 | 15.3 | 6.3 ^E |
| Time worked at home per week | | | | | | |
| 10 hours or less † | 10.8 | 28.8 | 7.8 | 26.2 | 18.0 | 8.4 |
| 10 hours or more | 6.5 ^{E*} | 18.5* | 37.5* | 17.6* | 12.3 ^{E*} | 7.6 ^E |
| Hours worked per week | | | | | | |
| 0 to 29 † | 14.9 ^E | 19.5 ^E | 29.6 | 23.0 ^E | 9.4 ^E | F |
| 30 to 49 | 11.0 | 26.3 | 13.6* | 24.7 | 15.6 | 8.8 |
| 50 or more | 6.4 ^{E*} | 26.1 | 19.2* | 23.0 | 14.9 | 10.5 ^E |
| percentage of the self-employed | | | | | | |
| Total | 6.8 | 12.0 | 49.5 | 14.4 | 11.7 | 5.5 |
| Men † | 3.4 ^E | 14.4 | 45.7 | 15.1 | 14.6 | 6.7 |
| Women | 11.6* | 8.7* | 54.7* | 13.5 | 7.7* | 3.9 ^{E*} |
| Highest level of educational attainment | | | | | | |
| High school diploma † | 6.6 ^E | 11.5 ^E | 53.6 | 11.2 | 10.9 ^E | 6.2 ^E |
| College or trades diploma | 8.3 ^E | 13.5 | 48.2 | 12.6 | 12.8 ^E | 4.7 ^E |
| University degree | 6.1 ^E | 11.2 | 46.9 | 18.5* | 11.7 | 5.6 ^E |
| Presence of a child 12 and under in the household | | | | | | |
| No † | 2.5 ^E | 11.5 | 52.9 | 15.0 | 12.1 | 6.0 |
| Yes | 17.3* | 13.4 ^E | 41.3* | 13.0 | 10.7 ^E | 4.5 ^E |
| Time worked at home per week | | | | | | |
| 10 hours or less † | 7.9 ^E | 17.4 | 30.5 | 22.7 | 14.7 | 6.8 ^E |
| 10 hours or more | 5.8 ^E | 8.6* | 62.2 | 8.9* | 10.1 | 4.4 ^E |
| Hours worked per week | | | | | | |
| 0 to 29 † | 7.0 ^E | 5.2 ^E | 57.8 | 16.1 | 7.6 ^E | 6.4 ^E |
| 30 to 49 | 7.5 ^E | 11.3* | 50.1 | 15.4 | 10.6 | 5.1 ^E |
| 50 or more | 6.1 ^E | 16.3* | 41.2* | 15.5 | 15.9* | 4.9 ^E |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

Source: Statistics Canada, General Social Survey, 2008.

Perceptions also affect the popularity of working at home

Besides educational attainment, the popularity of certain types of occupations and the performance of certain industries in the economy, other factors may influence the popularity of working at home.

One such factor is both employees' and employers' perception of the pros and cons of working at home. Many tend to believe that most employees like the idea of working at home. According to some sources, however, numerous employees have found working at home to be an unsatisfactory experience for a variety of reasons: a lack of workplace interaction and a feeling of isolation, feeling forgotten by the employer, negative response from co-workers, difficulty separating job-related activities from family roles and responsibilities, etc.¹ Some people realized that they did not have the right kind of personality (a high level of independence, the ability to work alone, etc.)² to work at home. Such negative perceptions, if widespread, could reduce employee demand to work at home.

On the other hand, it is also possible that employers have been limiting work-at-home arrangements. For example, according to some sources, many employers recognize the positive effects working at home have on reducing operating costs (office space, energy costs, etc.) but remain skeptical

about the value of such arrangements. Their perceptions of disadvantages include difficulty supervising employees, lack of communication, security issues associated with information handling, decline in team spirit and sense of attachment to the company, and problems with the confidentiality of information.³ According to some experts, the slower-than-expected growth in the incidence of working at home is mainly due to managers' reluctance—they would rather continue managing behaviour (physical presence in the office for many hours) than results (completed tasks).⁴ In a nutshell, the factors underlying the evolution of working at home (in terms of industry and human capital changes) cannot be completely understood until certain information about the supply and demand of working at home is available.

1. For further details, see Ellison, Nicole B. 2004. *Telework and Social Change: How Technology is Reshaping the Boundaries Between Home and Work*. Westport. Preager Publishers.
2. See the InnoVisions Canada website (www.ivc.ca) for references concerning personal qualities that are important for positive, successful home-working experiences.
3. Levitt, Howard. 2009. "Beware of time wasters: How to monitor staff who say they are on outside calls." *National Post*. FP Careers. FP12.
4. For a summary of these studies and arguments, see Ellison 2004.

Working at home and work–life balance

One of the most frequently cited advantages of working at home is that it promotes better work–life balance.¹ For example, working at home provides greater freedom in choosing working hours and helps reduce commuting time. It also allows more time for domestic activities like child care, and time saved can be spent on recreational activities. On the other hand, as some other studies have pointed out, people who work at home could have increased workloads—after all, the office is never very far away. As a result, the boundary between personal life and work can become blurred, perhaps lowering satisfaction with work–life balance² (due to greater interference between family roles and job-related responsibilities).³

To focus on a more homogeneous population of employees and eliminate people whose work responsibilities probably have less impact on their personal lives, the following analyses are restricted to full-time employees (those working 30 hours or more per week).

According to data from the General Social Survey, employees who worked at home did not have a greater sense of balance between job and home life. In 2008, those who worked at home more than 10 hours per week were even slightly more likely than those who never worked at home to report that they were dissatisfied or very dissatisfied with their work–life balance (17% for employees who worked at home 10 hours or more per week, 14% for those who worked at home less than 10 hours per week, and 12% for those who did not work at home).

However, this difference in dissatisfaction levels was entirely due to the fact that employees who worked at home, especially those who worked more than 10 hours, also tended to have high total work hours (and the more hours they worked, the less satisfied they were with their work–life balance). For equal hours worked, employees who worked at home showed no difference from those who did not in satisfaction or dissatisfaction levels (according to a logistic regression model not shown).

This result was supported by the finding that among full-time employees who said they were dissatisfied with their work–life balance, 54% of those who worked at home attributed their dissatisfaction to spending too much time working. For employees who never worked at home, the proportion was 44%.

1. Kurland, Nancy B. and Diane E. Bailey. 1999. "Telework: The advantages and challenges of working here, there, anywhere and anytime." *Organizational Dynamics*. Vol. 28, no. 2. Fall. p. 53-68.
2. Bailey, Diane E. and Nancy B. Kurland. 2002. "A review of telework research: Findings, new directions, and lessons for the study of modern work." *Journal of Organizational Behavior*. Vol. 23, no. 4. p. 383-400. Kurland and Bailey 1999.
3. Golden, Timothy D. John F. Veiga and Zeki Simsek. 2006. "Telecommuting's differential impact on work–family conflict: Is there no place like home?" *Journal of Applied Psychology*. Vol. 91, no. 6. p. 1340-1350.

Summary

Between 2000 and 2008, the proportion of employees working at home rose one percentage point to 11.2%. However, there was considerable variation in the incidence of working at home by level of education, occupation, industry and number of hours worked. The employees most likely to work at home were university graduates, managers (especially in the health care and social assistance sector) and professionals. Participation was highest in the professional, scientific and technical services sector.

Even though about 15% of all workers in Canada are self-employed, they account for about one-half of those who work at home. In 2008, 60% of self-employed workers did paid work at home: 67% for women and 56% for men.

The three most common reasons given by employees for working at home were work requirements (25%), better working conditions (23%) and home being their usual place of work (18%).

The data also show that, in urban areas, workers who lived farther from their workplaces were more likely to work at home than those who lived closer. Those living outside urban areas were less likely to work at home.

The logo for the Government of Canada's Statistics Canada, featuring the letters "GST" in white inside a green oval shape.

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1. For example, the proportion of households with a computer at home nearly doubled in 10 years, climbing from 40% in 1997 to 79% in 2008. The proportion of households with Internet access grew even faster, jumping from 17% in 1997 to 75% in 2008 (CANSIM, Table 203-0020, Survey of Household Spending).
2. While some researchers believe that working at home increases satisfaction with work–life balance, others are not convinced, even arguing that it may erode satisfaction in some cases. For example, see Golden, Timothy D., John F. Veiga and Zeki Simsek. 2006. “Telecommuting’s differential impact on work–family conflict: Is there no place like home?” *Journal of Applied Psychology*. Vol. 91, no. 6. p. 1340-1350. See also Ellison, Nicole B. 2004. *Telework and Social Change: How Technology is Reshaping the Boundaries Between Home and Work*. Westport. Praeger Publishers.
3. Akyeampong, Ernest B. 2007. “Working at home: An update.” *Perspectives on Labour and Income*. Vol. 8, no. 6. June. Statistics Canada Catalogue no. 75-001-X. p. 16-18.
4. The difference between 2000 and 2008 is barely statistically significant ($p = 0.0492$).
5. There are other methodologies besides the one used in the General Social Survey to measure the incidence of working at home, which may lead to different conclusions about its evolution over time. For example, a 2001 EKOS survey found that if the definition of working at home were expanded to include overtime worked at home, 40% of Canadians (employees and self-employed workers) would have worked at home at least occasionally. See EKOS Research Associates. 2001. *Canadians and Working from Home*. Ottawa. May 18. In addition, the Census of Population measures working at home as a usual place of work, which contributes to lower estimates of the proportion of people working at home (for most people, home is not the usual place of work, since they only work there occasionally). For more details, see Statistics Canada. 2008. *Commuting Patterns and Places of Work of Canadians, 2006 Census*. Statistics Canada Catalogue no. 97-561-XIE. Ottawa.
6. For a summary of the research, see Bailey, Diane E. and Nancy B. Kurland. 2002. “A review of telework research: Findings, new directions, and lessons for the study of modern work.” *Journal of Organizational Behavior*. Vol. 23, no. 4. p. 383-400.
7. Akyeampong, Ernest B. 2007; Bureau Of Labor Statistics. 2005. *Work at Home in 2004*. Washington.
8. The slight difference between men and women was not statistically significant when the following factors were controlled for simultaneously in a logistic regression: level of education, occupation, number of hours worked per week, union status, work schedule, employee age, presence of a child, and distance between home and work (results not shown).
9. Confort, Derrick, Karen Johnson and David Wallace. 2003. *Part-time Work and Family-friendly Practices in Canadian Workplaces*. The Evolving Workplace Series. Statistics Canada Catalogue no. 71-584-MIE. Ottawa.
10. Some workers may choose their jobs specifically because of the requirement to work at home. However, the proportion cannot be estimated.
11. See Ellison. 2004.
12. Toffler, Alvin. 1981. *The Third Wave*. New York. Bantam Publishing. For a summary of the debate on this topic, see Gould Ellen, Ingrid and Katherine Hempstead. 2002. “Telecommuting and the demand for urban living: A preliminary look at white-collar workers.” *Urban Studies*. Vol. 39, no. 4, p. 749-766.
13. Gould Ellen and Hempstead. 2002.
14. Downs, Anthony. 2002. *Still Stuck in Traffic: Coping with Peak-Hour Traffic Congestion*. Washington. Brookings Institution Press.
15. Turcotte, Martin. 2006. *The Time it Takes to Get to Work and Back*. Statistics Canada Catalogue no. 89-622-XIE. Ottawa.

Uptake of water- and energy-conservation devices in the home

by Avani Babooram and Matt Hurst

Introduction

Today, many Canadians are concerned about the environment, and increasing attention is focused on the scarcity of resources. Consequently, more and more individuals and governments are seeking ways to reduce or alter energy and water consumption patterns.

In 2007, the Canadian residential sector used 1.4 million terajoules (TJ) of energy (the energy equivalent of 3.1 billion 9-kg propane cylinders like those used for most barbecues).¹ Heating, major appliances² and lighting accounted for approximately 63%, 9% and 4% of this energy use, respectively.³ In 2006, the residential sector accounted for the majority of municipal water use (57%). The bulk of residential water was used in the bathrooms of peoples' homes—35% in showers and baths while another 30% was used flushing toilets.⁴

One well-known method of conserving resources is through the adoption of energy- or water-efficient technologies. These technologies allow people to maintain their standard of living while reducing their impact on the environment by using less energy or water, and, at the same time, reducing their utility bills. For example, using an energy-saving device like a programmable thermostat can reduce energy consumption and lower heating

bills by up to 15%.⁵ In addition, the use of an energy-efficient appliance can result in savings of hundreds of dollars in energy costs over the lifetime of the appliance.⁶

Depending on the cost of water and the amount of water used, households can save upwards of \$100 a year by switching from a standard to an ultra-low volume toilet.⁷ A low-flow showerhead can also decrease water use: a standard showerhead uses 17 litres of water per minute, while a low-flow showerhead uses only 10 litres of water per minute.⁸

Using data from the 2007 Households and the Environment Survey, this article examines which households are more likely to use energy- and water-efficient technologies. More specifically, this study examines the association between dwelling ownership, income, education, age of dwelling and the number of years lived at the dwelling and the uptake of conservation technologies. It focuses on five particular technologies that have been developed to reduce consumption of water or energy in the home: low-volume toilets; low-flow showerheads; compact fluorescent light bulbs (CFLs); programmable thermostats; and appliances bought to save energy or water (see "What you should know about this study" for concepts, definitions and details).

Most Canadian households use CFLs and low-flow showerheads

In 2007, more than 70% of households had one or more CFLs (Chart 1). Low-flow showerheads were also a popular conservation device, with just under two-thirds of households (64%) reporting using them in their homes.

Low-volume toilets were not quite as popular, with less than one-half of households (42%) having a low-volume toilet. Just over one-third of households had purchased an appliance to save energy or water in the five years prior to 2007 (36%), and almost the same proportion of households used a programmable thermostat (34%).

Compared to the other technologies, CFLs and low-flow showerheads are less expensive and easier to install. This could explain their popularity relative to other, more costly, technologies like energy-efficient appliances, and technologies that are more time-consuming and difficult to install, like low-volume toilets or rainwater-collection devices.

Owners more likely to use conservation devices in their homes than renters

In 2007, homeowners were more likely to have water- or energy-conservation devices than were renters (Chart 2). Dwelling ownership

What you should know about this study

What you should know about this study

The Households and the Environment Survey (HES) collects information on a variety of environmental themes. The survey was designed to address the needs of its funding source, the Canadian Environmental Sustainability Indicators (CESI) project, a joint venture between Statistics Canada, Environment Canada and Health Canada. The CESI project reports annually on air quality, water quality and greenhouse gas emissions in Canada using indicators to identify areas of importance to Canadians and monitor change in these areas.

The target population for the HES was households in Canada, excluding households in which no member was 18 years of age or older. Also excluded were households located in the Yukon, Northwest Territories and Nunavut, households located on Indian reserves and military bases, and households consisting entirely of full-time members of the Canadian Forces. In 2007, the survey collected information from a sample of 21,690 households representing about 13 million households from across Canada.

Definitions

Income: total annual household income before tax.

Education: the highest level of education completed by any member of the household.

Programmable thermostats: thermostats that can be programmed for different temperatures over a period of time (e.g., daily, weekly, etc.). For example, using a programmable thermostat to save energy often involves allowing the temperature at night to fall during the heating season, or allowing the temperature to rise while occupants are not at home during the cooling season. In this article, discussion of programmable thermostats refers to households with programmable thermostats and who use them.

Low-volume toilets: toilets that use less water per flush or toilets where a device has been placed in the toilet tank to lower the volume of water held by the tank and thus lower the volume of water used when the toilet is flushed.

Buying an appliance to save energy or water: major appliance purchased within the five years prior to 2007 where the respondent reported that energy or water consumption was one of two major factors considered in the purchase of the appliance.

The **sample for Table 1** is a subset of all households interviewed in the survey. Households excluded from the analysis in Table 1 are those that, for the questions regarding sociodemographic information, either responded that they did not know the answer, refused to answer, did not have a response recorded for the question, or who were not asked the question because it did not apply to them. There is one exception to this general rule: the household income variable has a special category that represents households where valid responses could not be obtained.

Exclusions are handled differently for the questions relating to the use of programmable thermostats, low-flow showerheads and low-volume toilets. For these questions, any type of response other than "yes" has been grouped in the "no" category. As a result, for these three variables in the analysis no households were excluded and thus there was no "non-response" by definition. This is the convention used by Statistics Canada's Environment Accounts and Statistics Division. Based on the above-mentioned rules, 1,667 households were excluded, leaving 20,023 households for analysis in this table.

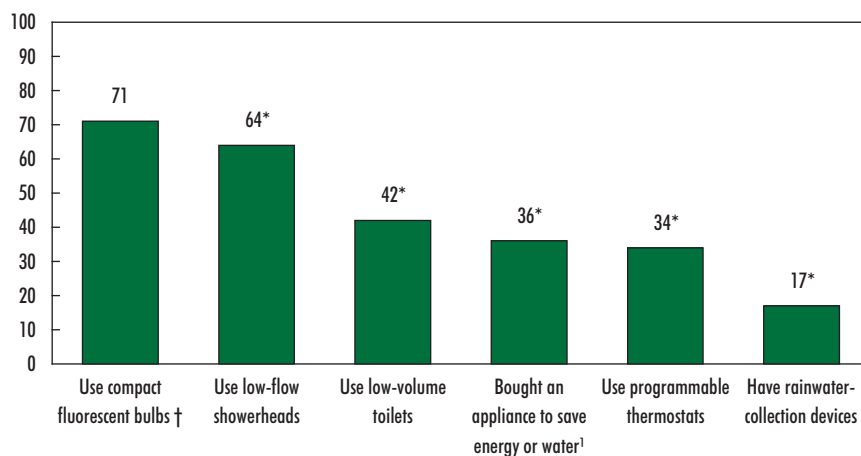
The **sample for Table 2** is also a subset of all households interviewed in the survey. The rules that define the subset follow those described above for Table 1. The exclusion rules apply to questions regarding low-flow showerheads, low-volume toilets and rainwater-collection devices. All of these rules exclude 2,357 households from the analysis. One additional rule applies to the analysis of rainwater collection devices: for estimates in these two columns, households that do not have a lawn or garden to water are excluded from the analysis.

Modeling

Logistic regression was used to determine the strength of the associations between particular household characteristics and the use of a conservation device while simultaneously accounting for the effect of other characteristics, expressed in terms of odds ratios. Standard errors were calculated for all estimates using bootstrap methods, unless otherwise noted.

Chart 1 Less expensive conservation technologies are more popular

percentage of households



† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Major appliance bought in the last five years.

Note: Estimates are based on sub-samples of the population. Please refer to "What you should know about this study" for detailed information on the sub-sample definitions.

Source: Statistics Canada, Households and the Environment Survey, 2007.

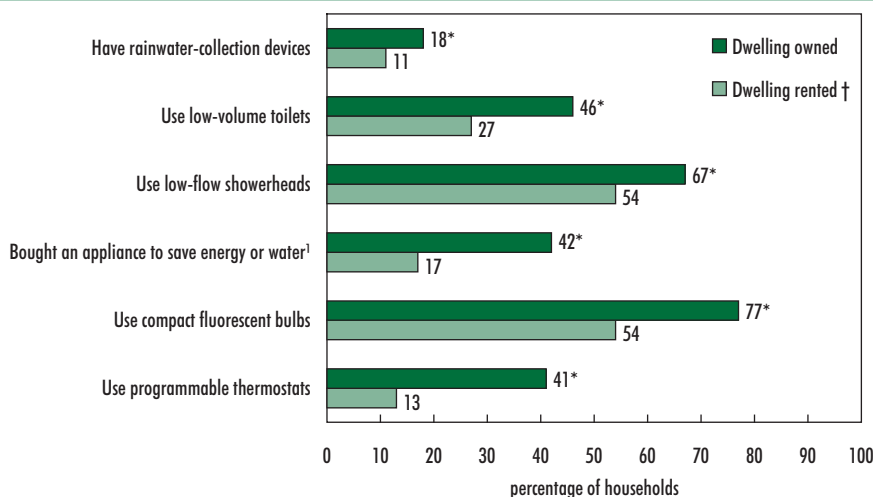
was the characteristic most strongly associated with adopting these technologies, even after controlling for education and income.

Households who owned their homes had more than twice the odds of using a programmable thermostat or buying an appliance to save energy or water than households that lived in a rented dwelling (Table 1). Use of water-saving devices followed a similar trend.

Renters may have less freedom than owners to change appliances and fixtures like toilets and showerheads, and water and electricity costs may be included in their rent, removing the monetary incentive to save. This may partly explain the differences in their adoption of conservation technologies.

The use of programmable thermostats also depends on having the device in the home. For example, 13% of households in rented dwellings used a programmable thermostat compared to 41% of owner-occupied households. This difference is largely explained by the differing prevalence of programmable thermostats—households that rented their dwelling were much less likely to have a programmable thermostat in their homes than owner-occupied dwellings (22% versus 41%) (data not shown).

Chart 2 Owners have a greater uptake of conservation technologies than renters



† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Major appliance bought in the last five years.

Note: Estimates are based on sub-samples of the population. Please refer to "What you should know about this study" for detailed information on the sub-sample definitions.

Source: Statistics Canada, Households and the Environment Survey, 2007.

Conservation technologies more popular in higher-income households

People with higher incomes are more likely to engage in proactive environmental behaviours, often because they have the resources to do so.⁹ The 2007 Households and the Environment Survey data support this, as a greater proportion of higher-income households had conservation technologies than did lower-income households (Chart 3).

This was particularly true for big-ticket items like new appliances. About 47% of households in the highest income bracket (\$80,000 or more) had bought an appliance in order to save energy or water in the

Table 1 Proportion of households using energy-conservation devices, by household characteristics, 2007

| | Use a programmable thermostat | | Use compact fluorescent bulbs | | Bought an appliance to save energy or water ¹ | |
|---|-------------------------------|------------|-------------------------------|------------|--|------------|
| | percentage | odds ratio | percentage | odds ratio | percentage | odds ratio |
| All households | 34 | ... | 71 | ... | 36 | ... |
| Household age composition | | | | | | |
| 18 to 44 years | 27* | 0.78* | 63* | 0.76* | 29* | 0.74* |
| 45 to 64 years | 31* | 0.91 | 71* | 0.93 | 37* | 0.95 |
| 65 and over | 22* | 0.84 | 63* | 0.89 | 23* | 0.62* |
| Adults and children (aged 0 to 19 years) † | 42 | 1.00 | 76 | 1.00 | 43 | 1.00 |
| Other compositions | 36* | 0.93 | 75 | 0.97 | 37* | 0.83* |
| Highest level of education² | | | | | | |
| Less than a high school diploma † | 17 | 1.00 | 52 | 1.00 | 20 | 1.00 |
| High school diploma | 26* | 1.11 | 66* | 1.43* | 33* | 1.20 |
| Postsecondary below university | 34* | 1.37* | 73* | 1.89* | 37* | 1.18 |
| University degree | 41* | 1.38* | 75* | 1.87* | 39* | 1.11 |
| Household income | | | | | | |
| Less than \$20,000 | 17* | 1.06 | 54* | 0.71* | 15* | 0.49* |
| \$20,000 to \$39,999 | 22* | 0.95 | 66* | 0.89 | 28* | 0.78* |
| \$40,000 to \$59,999 † | 27 | 1.00 | 72 | 1.00 | 36 | 1.00 |
| \$60,000 to \$79,999 | 38* | 1.47* | 77* | 1.22 | 41* | 1.13 |
| \$80,000 and over | 49* | 1.75* | 78* | 1.09 | 47* | 1.30* |
| Don't know/refused/not stated | 32* | 1.17 | 66* | 0.72* | 27* | 0.63* |
| Geographic area | | | | | | |
| Montréal CMA ³ | 29* | 0.60* | 64* | 0.58* | 37 | 1.02 |
| Ottawa-Gatineau CMA † | 45 | 1.00 | 77 | 1.00 | 41 | 1.00 |
| Toronto CMA | 44 | 0.89 | 74 | 0.80 | 35 | 0.75 |
| Winnipeg CMA | 36 | 0.71 | 65* | 0.53* | 33 | 0.72 |
| Calgary CMA | 39 | 0.53* | 63* | 0.45* | 32 | 0.59* |
| Edmonton CMA | 41 | 0.76 | 62* | 0.46* | 37 | 0.79 |
| Vancouver CMA | 31* | 0.50* | 71 | 0.72 | 23* | 0.43* |
| All other geographic areas | 31* | 0.49* | 73 | 0.77 | 38 | 0.86 |
| Period of construction of the dwelling | | | | | | |
| 1960 and earlier | 28* | 0.61* | 72 | 1.17 | 35 | 1.26* |
| 1961 to 1983 | 31* | 0.75* | 69 | 1.03 | 36 | 1.31* |
| 1984 to 1995 | 36* | 0.72* | 73 | 1.04 | 37 | 1.21* |
| 1996 to 2007† | 46 | 1.00 | 71 | 1.00 | 36 | 1.00 |
| Years lived in dwelling | | | | | | |
| 5 years or less † | 34 | 1.00 | 67 | 1.00 | 35 | 1.00 |
| 6 to 10 years | 35 | 0.83* | 73* | 1.18* | 33 | 0.72* |
| 11 to 20 years | 36 | 0.83* | 75* | 1.19* | 39* | 0.82* |
| More than 20 years | 29* | 0.66* | 74* | 1.13 | 38 | 0.83* |
| Dwelling type | | | | | | |
| Single detached | 42* | 1.76* | 78* | 1.38* | 43* | 1.31* |
| Other † | 22 | 1.00 | 61 | 1.00 | 25 | 1.00 |
| Dwelling owned by household member | | | | | | |
| Yes | 41* | 2.81* | 77* | 1.81* | 42* | 2.57* |
| No † | 13 | 1.00 | 54 | 1.00 | 17 | 1.00 |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Major appliance bought in the last five years.

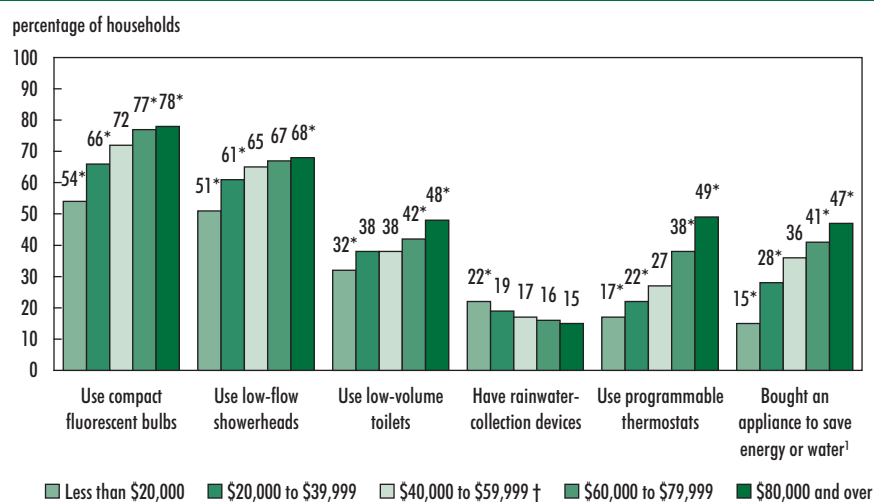
2. Highest level of education in the household.

3. Census metropolitan area.

Note: Estimates are based on sub-samples of the population. Please refer to "What you should know about this study" for detailed information on the sub-sample definitions.

Source: Statistics Canada, Households and the Environment Survey, 2007.

Chart 3 Higher-income households more likely to use conservation devices



† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Major appliance bought in the last five years.

Note: Estimates are based on sub-samples of the population. Please refer to "What you should know about this study" for detailed information on the sub-sample definitions.

Source: Statistics Canada, Households and the Environment Survey, 2007.

five years prior to 2007 compared to 15% of those in the lowest income bracket (under \$20,000). Use of programmable thermostats followed a similar trend: 49% of households in the highest income bracket used a programmable thermostat, compared to 17% of households in the lowest income bracket.

However, for more affordable technologies like CFLs and low-flow showerheads, the relationship between income and usage was not as strong. Of households in the highest income bracket, 78% used CFLs, compared to 54% of those in the lowest income bracket. Similarly, for low-flow showerheads, 68% of those in the highest income bracket used this device, compared to 51% in the lowest income bracket.

The proportion of households with conservation technologies increases with education

People with higher levels of education tend to engage in more proactive environmental behaviours because they have had more opportunity to

gain knowledge about environmental issues.¹⁰ This finding also holds true for the use of resource-conservation devices: for more expensive items like programmable thermostats, 41% of households where at least one household member had completed a university degree used a programmable thermostat, compared to 17% of households where the highest completed level of education was less than a high school diploma. A similar trend was observed for the less expensive CFL: 75% of households where at least one household member had completed a university degree had a CFL, compared to 52% of households where the highest completed level of education was less than a high school diploma. These relationships held even after the effects of income, age, dwelling type and region had been taken into account.

Buying an appliance to save energy or water was not related to the level of education once other factors like income had been taken into account (Table 1). This suggests that, for these

higher-priced items, income may play a more important role than education.

Age of dwelling related to use of programmable thermostats

Households living in older homes were less likely to use programmable thermostats. Of those living in homes built from 1996 to 2007, 46% used a programmable thermostat, while only 28% of those living in homes built before 1961 did so. This is partially explained by the fact that older homes are less likely to have been built with programmable thermostats, which are now a standard option in many newer homes.

However, the age of a dwelling was not related to the use of CFLs, the recent purchase of appliances, or the use of low-flow showerheads. About 70% of households were using one or more CFLs in 2007, regardless of the age of the dwelling.

Homes built between 1984 and 1995 were less likely to have low-volume toilets than those built prior to 1984. However, the trend reverses for homes built between 1996 and 2007—they are the most likely out of all homes to have low-volume toilets. The period from 1984 to 1995 may be a blip in a growing trend of installing low-volume toilets. Homes built during this period are less likely than homes more recently constructed to have low-volume toilets as a standard feature, and may not be old enough to have had toilets replaced or devices installed in tanks through home-improvement projects.

Established households more likely to have conservation technologies

For many of the conservation devices, the longer a household had been in a dwelling, the more likely the household had water- and energy-conservation devices. Of households who had lived in their dwellings for 5 years or less, 60% used low-flow showerheads, compared to 70% of those who had lived in their dwellings for 11 to 20 years, and 64% of those who lived in their dwellings for more

than 20 years (Table 2). Of those who had lived in their dwellings for 5 years or less, 38% used low-volume toilets, while 47% of those who had lived in their homes for more than 20 years did so.

The opposite, however, was observed for the use of programmable thermostats. Of households who had been in their dwellings for 5 years or less, 34% used a programmable thermostat compared to 29% of those who had been in their dwellings for more than 20 years. This association remained even when other factors like the age of the dwelling and the composition of the household had been taken into account (Table 1).

Rainwater collection devices buck the trend

In general, for the conservation technologies discussed to this point, higher levels of income and education were associated with an increase in the proportion of households using conservation technologies. However, no association was observed between rainwater-collection devices, such as rain barrels, and income; and an opposite relationship was found with education. That is, higher education was related to a lower chance of having a rainwater-collection device (Table 2).

Dwelling ownership and the age of a dwelling were strong determinants of whether households used rainwater-collection devices. Of owned dwellings, 18% had such devices compared to 11% of rented dwellings. Of dwellings built before 1961, 21% had such devices, compared to 11% of dwellings built from 1996 to 2007.

Popularity of conservation devices varies by CMA

The use of conservation devices varied from one census metropolitan area (CMA) to another. Programmable thermostats were more popular in Ottawa–Gatineau (45%), Toronto (44%), Calgary (39%) and Edmonton (41%), and less popular in Montreal (29%) and Vancouver (31%). CFLs

were more common in Ottawa–Gatineau (77%) and Toronto (74%), and less common in Edmonton (62%), Winnipeg (65%), Calgary (63%) and Montreal (64%) (Table 1).

Of households in Toronto and Ottawa–Gatineau, 67% and 66%, respectively, used low-flow showerheads, compared to 56% of households in Vancouver. Households in Edmonton were most likely to have low-volume toilets, with 53% of households having one. At 30%, those in Montreal were least likely to have one (Table 2).

The use of rainwater-collection devices varied. They were most common in Edmonton (38%) and least common in Montreal (6%), Toronto (8%), and Vancouver (8%). For Vancouver, this is likely related to the fact that of all the CMAs studied, Vancouver had the highest average annual rainfall (1476 millimetres annually¹¹) and thus rainwater-collection devices may not be required.

Households with water meters more likely to have water-conservation devices

For households living in dwellings connected to municipal water systems, having a water meter increased the chances of having a water-conservation device. Of metered households, 68% had low-flow showerheads, compared to 60% of un-metered households. In addition, 50% of metered households had low-volume toilets, compared to 33% of un-metered households (Table 2).

Households with water meters pay for each cubic metre of water used, which may increase their desire to conserve water by using water-saving devices like low-flow showerheads and low-volume toilets. In comparison, when municipal water costs are not based on the volume of water used, there may be less incentive to conserve. Overall, residential water-use rates for Canada reflect this relationship. In 2001, residential households who did not

pay for their water by volume used 474 litres per person per day, which was 74% more than those who paid by volume (and thus had meters).¹²

Households that were not connected to a municipal water supply—and thus likely drew water from a well—had levels of water-conservation device uptake higher than un-metered households for two of the three devices. Of households not connected to a municipal water supply, 62% had low-flow showerheads and 45% had low-volume toilets. Although the day-to-day cost of water use from wells is relatively inexpensive—usually only for the electricity to pump the water—the possibility of a well running dry and the future costs of deepening an existing well or drilling a new one may encourage these households to conserve. Consequently, both metered households and households that were not connected to a municipal water supply had incentives to conserve water and were more likely to exhibit conservation behaviour than those who were connected to the municipal water system but did not have a meter.

Summary

A number of factors were related to the uptake of energy- and water-conservation devices by households. Dwellings owned by a household member were more likely to have these devices and the proportion of households that used energy- and water-saving devices was greater with higher levels of income and education.

Small-ticket items like CFLs and low-flow showerheads were more popular than more expensive items like appliances and low-volume toilets. The less expensive conservation devices also tend to be easier to install than the other conservation technologies like low-volume toilets and programmable thermostats.

Table 2 Proportion of households using water-conservation devices, by household characteristics, 2007

| | Use low-flow showerheads | | Use low-volume toilets ¹ | | Have rainwater-collection devices | |
|---|--------------------------|------------|-------------------------------------|------------|-----------------------------------|------------|
| | percentage | odds ratio | percentage | odds ratio | percentage | odds ratio |
| All households | 64 | ... | 42 | ... | 17 | ... |
| Household age composition | | | | | | |
| 18 to 44 years | 55* | 0.80* | 31* | 0.75* | 15 | 1.05 |
| 45 to 64 years | 68 | 1.17* | 43 | 1.10 | 19* | 1.19* |
| 65 years and over | 54* | 0.77* | 40* | 1.11 | 23* | 1.44* |
| Adults and children (aged 0 to 19 years) † | 66 | 1.00 | 44 | 1.00 | 14 | 1.00 |
| Other compositions | 69 | 1.14 | 46 | 1.11 | 18* | 1.33* |
| Highest level of education² | | | | | | |
| Less than a high school diploma † | 52 | 1.00 | 32 | 1.00 | 22 | 1.00 |
| High school diploma | 61* | 1.13 | 39* | 1.28* | 19 | 1.03 |
| Postsecondary below university | 68* | 1.39* | 44* | 1.49* | 18* | 1.05 |
| University degree | 62* | 0.95 | 43* | 1.33* | 14* | 0.87 |
| Household income | | | | | | |
| Less than \$20,000 | 51* | 0.71* | 32* | 1.01 | 22* | 1.24 |
| \$20,000 to \$39,999 | 61* | 0.90 | 38 | 1.07 | 19 | 1.02 |
| \$40,000 to \$59,999 † | 65 | 1.00 | 38 | 1.00 | 17 | 1.00 |
| \$60,000 to \$79,999 | 67 | 1.08 | 42* | 1.10 | 16 | 0.94 |
| \$80,000 and over | 68* | 1.09 | 48* | 1.26* | 15 | 0.97 |
| Don't know/refused/not stated | 59* | 0.75* | 44* | 1.13 | 19 | 1.07 |
| Geographic area | | | | | | |
| Montréal CMA ³ | 65 | 1.06 | 30* | 0.66* | 6* ^E | 0.47* |
| Ottawa-Gatineau CMA † | 66 | 1.00 | 42 | 1.00 | 16 ^E | 1.00 |
| Toronto CMA | 67 | 0.96 | 47 | 1.10 | 8* | 0.46* |
| Winnipeg CMA | 58 | 0.65 | 40 | 0.79 | 16 ^E | 0.83 |
| Calgary CMA | 59 | 0.68 | 48 | 1.03 | 23 | 1.93* |
| Edmonton CMA | 61 | 0.69 | 53* | 1.32 | 38* | 2.84* |
| Vancouver CMA | 56* | 0.65* | 34 | 0.76 | 8* ^E | 0.58 |
| All other geographic areas | 64 | 0.89 | 43 | 0.96 | 20 | 1.01 |
| Period of construction of the dwelling | | | | | | |
| 1960 and earlier | 62 | 0.93 | 41* | 0.87 | 21* | 2.16* |
| 1961 to 1983 | 65 | 1.08 | 43 | 0.94 | 18* | 1.82* |
| 1984 to 1995 | 65 | 0.97 | 35* | 0.59* | 15* | 1.45* |
| 1996 to 2007 † | 63 | 1.00 | 47 | 1.00 | 11 | 1.00 |
| Years lived in dwelling | | | | | | |
| 5 years or less † | 60 | 1.00 | 38 | 1.00 | 14 | 1.00 |
| 6 to 10 years | 66* | 1.24* | 44* | 1.16* | 16 | 1.08 |
| 11 to 20 years | 70* | 1.42* | 44* | 1.16* | 17* | 0.98 |
| More than 20 years | 64* | 1.12 | 47* | 1.12 | 21* | 0.93 |
| Dwelling type | | | | | | |
| Single detached | 67* | 1.21* | 47* | 1.14 | 19* | 1.48* |
| Other † | 58 | 1.00 | 33 | 1.00 | 10 | 1.00 |
| Dwelling owned by household member | | | | | | |
| Yes | 67* | 1.23* | 46* | 1.56* | 18* | 1.58* |
| No † | 54 | 1.00 | 27 | 1.00 | 11 | 1.00 |
| Household water is metered | | | | | | |
| Not connected to municipal water | 62 | 0.81* | 45* | 1.14 | 32* | 3.45* |
| No † | 60 | 1.00 | 33 | 1.00 | 9 | 1.00 |
| Yes | 68* | 1.21* | 50* | 1.43* | 16* | 1.75* |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Includes toilets that have been modified by the owner to lower tank volume.

2. Highest level of education in the household.

3. Census metropolitan area.

Note: Estimates are based on sub-samples of the population. Please refer to "What you should know about this study" for detailed information on the sub-sample definitions.

Source: Statistics Canada, Households and the Environment Survey, 2007.

More than one-third of households had purchased an appliance to save energy or water within the last five years. Similarly, one-third of households used a programmable thermostat in their homes, indicating that, despite the initial cost of these devices, Canadians are willing to adopt them.

GST

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Ethical consumption

by *Martin Turcotte*

Introduction

One of the significant movements marking the last decade is the greater awareness Canadians have about the impact their daily activities can have on the environment. This new environmental consciousness is reflected in tangible actions and new habits such as participating in recycling programs, using reusable bags, purchasing organic foods, and using environmentally friendly products at home.

A number of ethical issues have accompanied the growing concern for the environment. For example, there has been condemnation of the working conditions and wages of garment and food (particularly coffee) industry workers, the treatment of laboratory animals, certain marketing practices, and anti-union activities.

In addition to numerous calls to boycott certain companies,¹ new products have emerged under the fair-trade banner. These fair-trade products are the result of a production and marketing process considered to be more fair to workers and less harmful to the environment (or at least they are presented as such). Once relegated to a few specialized businesses, products labelled 'fair trade' or 'responsible' are now available in most supermarkets, on stock exchanges, and even through travel agencies.

The idea that citizens can effect change through their behaviour and consumption choices has become an integral part of the environmental and activist discourse. It follows that many political scientists consider ethical consumption, including boycotting, a form of political participation, because its objective is to provoke social change² (for other perspectives on the relevance and actual effectiveness of ethical or responsible consumption, see "Conflicting opinions about ethical consumption").

Survey data from a group of industrialized countries show that from the mid-1970s to the early 2000s, boycotting was the form of non-traditional political participation that saw the biggest growth³ (there are no data on the evolution of ethical purchases over that same period).

What is the consumers' propensity to choose certain products and boycott others based on ethical criteria? Were more of them doing so in 2008 than in 2003? Who is most likely to choose or boycott a product for ethical reasons? And how does the evolution of responsible consumption compare with the evolution of the other forms of political participation? Using data from the 2003 and 2008 General Social Survey (GSS), this article attempts to answer all of these questions (see "What you should know about this study" for details on data and concepts).

Proportion of people who buy or boycott a product for ethical reasons on the rise

In addition to voting, citizens wishing to participate in public life and potentially influence political decisions or society in general can also: volunteer for a political party, sign a petition, attend and participate in public meetings, etc. In recent years, some analysts have become concerned about declining civic participation, notably decreasing participation in elections.

The GSS data show that, in 2008, participation rates for most forms of political activity measured by the survey were either lower than or practically identical to those recorded in 2003. For example, the proportion of citizens aged 25 or older who had attended a public meeting was 19% in 2008, down from 23% in 2003 (Table 1). The proportion that had volunteered for a political party remained virtually unchanged, at approximately 3%. Elections Canada data reveal an appreciable decline in the participation rate in federal elections over the past 20 years: from 75% in 1988; to 67% in 1997; and to 59% in 2008.⁴

However, two types of civic participation increased between 2003 and 2008: searching for political information (up 3 percentage points) and ethical consumption (up 7 percentage points) (Table 1).

What you should know about this study

This study is based on data collected by Statistics Canada in the General Social Survey (GSS). In 2003 and 2008 the survey collected data on the political engagement, social participation and social networks of Canadians aged 15 years and over living in private households in the 10 provinces.

This study deals with people aged 25 and over. This corresponds to a survey sample of 18,457 respondents representing nearly 23 million people in 2008 and a sample of 21,785 in 2003. Individuals aged 15 to 24 were excluded because most of them were still attending school and living with their parents so they were not necessarily responsible for daily consumption choices.

While the study doesn't focus on young adults, according to GSS, 17% of those aged 15 to 19 and 28% of those aged 20 to 24 said they had chosen or boycotted a product for ethical reasons in 2008.

Definitions

Ethical or responsible consumption: Individuals were classified depending on whether they responded "yes" or "no" to the following question: "In the past 12 months, have you done any of the following activities: [...] boycotted a product or chosen a product for ethical reasons?" The same formulation was used to measure participation in the eight other types of political activity listed in Table 1.

Feeling of personal control: This variable is constructed from responses to seven questions with the following preamble: "Please tell me if you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree that...". Using these response options, respondents then provided their positions on the following statements:

- "you have little control over the things that happen to you;"
- "there is really no way you can solve some of the problems you have;"
- "there is little you can do to change many of the important things in your life;"
- "you often feel helpless in dealing with problems in life;"
- "sometimes you feel that you are being pushed around in life;"
- "what happens to you in the future mostly depends on you;" and
- "you can do just about anything you really set your mind to."

The responses were recoded into a numeric scale such that responses reflecting a greater feeling of control had a higher value. Based on the resulting rankings, respondents were then classified into five categories. For the logistic regression model, this variable is treated as a constant, with a value ranging from 1 to 5.

Participation in organized groups: Respondents were asked whether they had been members or participants, in the 12 months before the survey, in any of the following groups, networks or organizations: union or professional associations; political parties or groups; sports or recreational organizations; cultural, educational or hobby organizations; religious-affiliated groups; school groups, neighbourhood, civic or community associations; service clubs or fraternal organizations; or other groups (and the number of groups).

This increase in ethical consumption, between 2003 and 2008, was observed among men and women, higher and lower income households, people with and without children, etc. However, there were some significant regional variations. In fact, while the increase in ethical consumption was 8 percentage points in Quebec and 10 in Prince Edward Island it was 1 percentage point in Alberta (Table 2).

Men as likely as women to have chosen or boycotted a product for ethical reasons

Generally speaking, men were more likely than women to participate in political activities, such as attending a public meeting (Table 2). This is consistent with several studies on the subject.⁵ However, the GSS found that there was no difference between the sexes regarding ethical consumption. Studies have shown that women are more likely than men

to exhibit environmental values and behaviour,⁶ and, particularly in the Scandinavian countries, to purchase products with a view to ethical or social considerations.⁷ At the same time, other data sources show that, in Canada, men are more inclined than women to participate in a boycott.⁸ In the GSS, purchasing and boycotting a product for ethical reasons are measured together, which may explain similarities between men and women.

Table 1 Participation in political activities, 2003 and 2008

| | 2003 † | 2008 | Change from 2003 to 2008 |
|---|------------|------|-----------------------------|
| | percentage | | percentage point |
| In the 12 months prior to the survey... | | | |
| Searched for information on a political issue | 24 | 27 | 3* |
| Volunteered for a political party | 3 | 3 | 0 |
| Expressed views on an issue by contacting a newspaper or a politician | 14 | 13 | -1* |
| Signed a petition | 28 | 24 | -3* |
| Boycotted or chose a product for ethical reasons | 20 | 27 | 7* |
| Attended a public meeting | 23 | 19 | -4* |
| Spoke out at a public meeting | 10 | 8 | -2* |
| Participated in a protest or march | 5 | 3 | -2* |
| Was a member of a political party | 5 | 6 | 1* |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

Source: Statistics Canada, General Social Survey, 2003 and 2008.

It has been well-established that the most politically involved people are generally better educated.⁹ The GSS data confirm that education is strongly and positively associated with both political participation and ethical consumption (Figure 1 and Table 2). Specifically, in 2008, the proportion of university graduates who chose or boycotted a product for ethical reasons was 41%, compared with 8% of individuals without a high school diploma. When the impact of other factors (e.g., household income, immigrant status and place of residence) are controlled for, university and college graduates remain more likely than less educated people to have chosen or boycotted a product for ethical reasons (Table A.1).¹⁰

Generally speaking, a certain amount of information is required to actively incorporate ethical or political considerations into consumption choices. People with more education have a greater tendency to read newspapers and use the Internet to find information. The Internet is an excellent way to learn about ethical products or boycotts that have been organized.¹¹

It was also observed that, among people who said they had chosen or boycotted a product for ethical reasons, a higher proportion had used the Internet to look for information about products or services in general (81% compared with 60% for others) (results not shown).

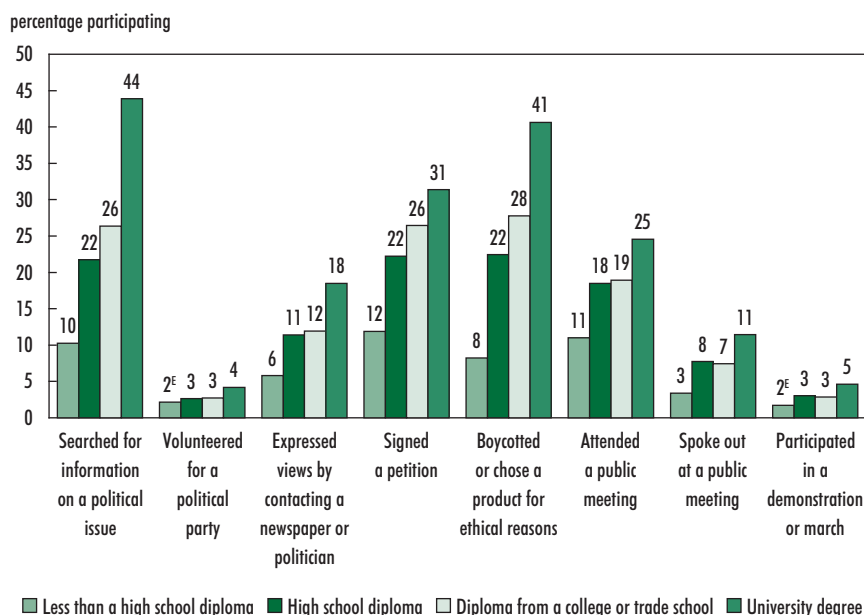
An association similar to that observed between education and ethical consumption also existed for income: the higher the household income, the higher the proportion of individuals who engaged in ethical consumption. For example, 24% of people living in households with an annual income between \$40,000 and \$59,999 had chosen or boycotted a product for ethical reasons, compared with 40% of those with an annual household income higher than \$100,000. It often costs a little more to purchase products that have been fair-trade certified and this additional cost will have less impact on the personal finances of people with higher incomes. In addition, those with the highest income normally spend and consume more than others, whether it be for food, entertainment and recreation, or home renovations. All else being

equal, the greater the quantity of goods and services purchased by an individual, the more likely that at least some of those products were purchased for ethical reasons.

Ethical consumption less frequent among those 65 years and older

People aged 65 or older, who are the most likely to vote in elections,¹² were the least likely to choose products for ethical reasons (15% compared with 30% of those aged 45 to 54, for example). They were also less inclined to sign a petition (Table 2). Studies have shown that 'post-materialist' values are positively associated with ethical consumption¹³ and boycotting.¹⁴ Post-materialist values include self-expression (i.e., emphasizing autonomy, quality of life and freedom of expression) and secularization (e.g., challenging authority and religion). In Canada, as in many other industrialized societies, these values developed in the generations born after the Second World War—as a result, they are less prevalent among those aged 65 or older.¹⁵

Chart 1 People with the highest level of education are more likely to participate in the different activities



Source: Statistics Canada, General Social Survey, 2008.

Quebecers and British Columbians more likely to choose or boycott a product for ethical reasons

In general, ethical consumption was more common in the larger census metropolitan areas (CMAs) than in census agglomerations (CAs) and outside these regions (Table 2). It may be that some products that are easily accessible in larger centres like Toronto, Montréal, Vancouver or Ottawa–Gatineau are more difficult to find in more remote areas. Among the largest CMAs, Ottawa–Gatineau and Québec had the highest levels of ethical consumption (34% and 35% respectively in 2008).

In both 2003 and 2008, ethical consumption varied a great deal by province. In 2008, British Columbia (31%), Quebec (29%) and Ontario (27%) recorded the highest proportions of citizens who had consumed or boycotted certain products for ethical reasons. The lowest proportions were observed in Newfoundland and Labrador and New Brunswick (14% for both).

While ethical consumption was less frequent outside CMAs, CAs and in the Atlantic provinces, the same cannot be said for attending public meetings, an activity that requires a higher level of engagement (particularly in terms of time). Participation in public meetings was highest outside CMAs and CAs and higher in the Atlantic provinces, particularly Newfoundland and Labrador and Prince Edward Island than in other provinces.

Recent immigrants less likely to choose or boycott a product for ethical reasons

Some studies have demonstrated that recent immigrants, particularly those from countries with more limited democratic rights, are less likely than others to participate in non-traditional political activities or 'protests,' like boycotting a product.¹⁶ Some studies have also shown lower participation by recent immigrants in more traditional political activities, like voting in elections.¹⁷ According to the 2008

GSS, recent immigrants were less likely than individuals born in Canada to have chosen or boycotted a product for ethical reasons, to have contacted a newspaper or politician, to have signed a petition, or to have participated in a public meeting (Table 2).

Previous studies have also shown that the longer immigrants had lived in Canada, the more likely they were to have similar behaviour to non-immigrants in terms of political participation.¹⁸ That is also what happens when it comes to ethical consumption and other types of participation: in 2008, 29% of those born in Canada had purchased or boycotted a product for ethical reasons, compared with 24% of immigrants who arrived in Canada before 1990 and 12% of those who arrived between 1990 and 2008 (Table 2).

Ethical consumption more frequent among people who have less confidence in major corporations

Market research has shown that there are certain values and attitudes characteristic of people who make purchases based on ethical criteria. For example, one study found that those who liked fair-trade coffee, in addition to being better educated than average, were more idealistic and less conventional than other consumers.¹⁹

The GSS data are consistent with these conclusions. Individuals who expressed the least confidence in major corporations had a higher tendency than others to be ethical consumers (37% compared with 13% of those who reported more confidence in major corporations). Not surprisingly, individuals with the lowest level of confidence in major corporations were much more likely to sign petitions (Table 2).

Individuals who are religiously active are more likely to vote in elections,²⁰ volunteer and make donations to organizations;²¹ and, when they make donations, they tend

Table 2 Percentage of people who chose or boycotted a product for ethical reasons and rate of participation in various forms of political activity, select characteristics, 2008

| | Chose or boycotted a product for ethical reasons | | Searched for information on a political issue | Contacted a newspaper or a politician | Signed a petition | Attended a public meeting |
|--|--|------|---|---|----------------------|---------------------------------|
| | 2003 | 2008 | 2008 | | | |
| | percentage | | | | | |
| Total | 20 | 27 | 27 | 13 | 24 | 19 |
| Men † | 21 | 27 | 32 | 15 | 24 | 22 |
| Women | 20 | 27 | 23* | 11* | 25 | 16* |
| Age | | | | | | |
| 25 to 34 | 26* | 32 | 35* | 8* | 25 | 13* |
| 35 to 44 | 24 | 29 | 29* | 13 | 27 | 18* |
| 45 to 54 † | 22 | 30 | 26 | 13 | 27 | 21 |
| 55 to 64 | 19* | 27* | 26 | 16* | 25 | 24* |
| 65 and older | 8* | 15* | 20* | 14 | 16* | 20 |
| Highest level of education | | | | | | |
| Less than a high school diploma | 6* | 8* | 10* | 6* | 12* | 11* |
| High school diploma † | 17 | 22 | 22 | 11 | 22 | 18 |
| Diploma from a college or trade school | 22* | 28* | 26* | 12 | 26* | 19 |
| University degree | 35* | 41* | 44* | 18* | 31* | 25* |
| Household income | | | | | | |
| Less than \$20,000 † | 13 | 15 | 18 | 8 | 16 | 13 |
| \$20,000 to \$39,999 | 15* | 19 | 21 | 10 | 20 | 16 |
| \$40,000 to \$59,999 | 20* | 24* | 25* | 12* | 24* | 19* |
| \$60,000 to \$99,999 | 27* | 30* | 28* | 13* | 28* | 20* |
| \$100,000 or more | 33* | 40* | 39* | 17* | 31* | 24* |
| \$100,000 to \$149,999 | ... | 38* | 37* | 14* | 30* | 22* |
| \$150,000 or more | ... | 42* | 42* | 20* | 32* | 28* |
| Marital status | | | | | | |
| Married † | 19 | 26 | 28 | 14 | 24 | 21 |
| Common-law | 25* | 36* | 29 | 11* | 28* | 18* |
| Widowed | 8* | 13* | 15* | 10* | 14* | 14* |
| Separated | 21 | 27 | 26 | 12 | 28 | 19 |
| Divorced | 21* | 26 | 22* | 12 | 24 | 18* |
| Single | 25* | 31* | 33* | 9* | 25 | 15* |
| Children aged 0 to 12 years in the household | | | | | | |
| No † | 20 | 26 | 27 | 13 | 24 | 24 |
| Yes | 22* | 29* | 29* | 12 | 26 | 26 |
| Immigrant status | | | | | | |
| Born in Canada/Canadian citizens by birth | 22* | 29* | 27 | 13* | 27* | 20* |
| Other immigrants (arrived before 1990) | 17* | 24* | 29 | 14* | 21* | 19* |
| Recent immigrants (arrived in 1990 or after) † | 11 | 12 | 28 | 8 | 10 | 11 |
| Province of residence | | | | | | |
| Newfoundland and Labrador | 11* | 14* | 18* | 12* | 30* | 25* |
| Prince Edward Island | 12* | 22* | 24* | 21 | 19* | 29* |
| Nova Scotia | 16* | 24* | 22* | 16 | 23 | 20 |
| New Brunswick | 12* | 14* | 19* | 13 | 19* | 22 |
| Quebec | 21 | 29 | 21* | 7* | 24 | 15* |
| Ontario † | 20 | 27 | 31 | 14 | 24 | 20 |
| Manitoba | 17* | 24* | 27* | 15 | 23 | 20 |
| Saskatchewan | 17* | 19* | 25* | 14 | 18* | 21 |
| Alberta | 22 | 23* | 33 | 16 | 20* | 21 |
| British Columbia | 25* | 31* | 30 | 15 | 31* | 22* |

Table 2 Percentage of people who chose or boycotted a product for ethical reasons and rate of participation in various forms of political activity, select characteristics, 2008 (continued)

| | Chose or boycotted a product for ethical reasons | | Searched for information on a political issue | Contacted a newspaper or a politician | Signed a petition | Attended a public meeting |
|--|--|------|---|---|----------------------|---------------------------------|
| | 2003 | 2008 | 2008 | | | |
| percentage | | | | | | |
| Region of residence | | | | | | |
| Toronto | 21* | 28* | 35* | 14 | 21* | 17* |
| Montréal | 25* | 31* | 21 | 6* | 23 | 12* |
| Vancouver | 23* | 30* | 31* | 12 | 26 | 16* |
| Ottawa—Gatineau | 23* | 34* | 36* | 15 | 30 | 22 |
| Calgary | 26* | 28* | 39* | 17* | 18* | 18* |
| Edmonton | 24* | 22 | 32* | 14 | 17* | 18* |
| Québec | 21* | 35* | 28* | 9 ^E | 22 | 14* |
| Winnipeg | 19 | 29* | 29* | 16 | 21* | 16* |
| Other census metropolitan areas | 21* | 28* | 29* | 14 | 28 | 20* |
| Medium-sized urban areas (census agglomerations) | 16 | 25* | 24* | 13 | 24 | 20* |
| Outside census metropolitan areas and census agglomerations † | 16 | 21 | 20 | 13 | 26 | 25 |
| Confidence in major corporations | | | | | | |
| A great deal of confidence † | 10 | 13 | 20 | 9 | 16 | 14 |
| Quite a lot of confidence | 18* | 23* | 25* | 11 | 21* | 19* |
| Not very much confidence | 27* | 34* | 32* | 15* | 30* | 21* |
| No confidence at all | 35* | 37* | 34* | 17* | 31* | 21* |
| Religious affiliation | | | | | | |
| No † | 31 | 36 | 34 | 14 | 27 | 19 |
| Yes | 18* | 25* | 26* | 12* | 24* | 19 |
| Feeling of personal control | | | | | | |
| 1 to less than 3 † | 12 | 18 | 21 | 12 | 19 | 17 |
| 3 to less than 3.5 | 16* | 21* | 22 | 11 | 21 | 16 |
| 3.5 to less than 4 | 22* | 28* | 28* | 12 | 25* | 19 |
| 4 to less than 4.5 | 26* | 29* | 30* | 13 | 26* | 20* |
| 4.5 to 5 | 36* | 43* | 41* | 19* | 34* | 25* |
| Participation in organized groups (number) | | | | | | |
| None † | 11 | 16 | 18 | 6 | 14 | 8 |
| 1 or 2 | 19* | 25* | 23* | 9* | 20* | 13* |
| 3 or 4 | 24* | 31* | 32* | 15* | 29* | 22* |
| 5 or more | 36* | 42* | 44* | 26* | 41* | 40* |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

Source: Statistics Canada, General Social Survey, 2003 and 2008.

to give more than others. However, individuals who reported a religious affiliation were less likely to choose products based on ethical criteria than those who did not declare a religious affiliation (Table 2). Married people were also less likely to have chosen a product for ethical reasons than single people or those living common-law (Table 2 and Table A.1).

People involved with organizations more likely to participate in various activities

Political scientists have demonstrated that citizen participation in associations and organizations of all sorts

(political or not) encourages civic and political participation. In fact, people who participate in political life often do so because they have been in contact with someone who encouraged or mobilized them. The results show that the people who were most involved in organizations were also the most likely to choose or boycott products for ethical reasons (42% of people who were members of 5 or more organizations versus 16% of those who did not belong to any organization).

A greater feeling of control associated with ethical consumption

People who choose products based on ethical criteria may do so because they believe that their actions, combined with those of others who do the same, can have an impact. In keeping with this idea, people who had the greatest feeling of personal control were also more likely to participate in ethical consumption (43%) compared to those who felt they had less control (18%). People with a greater feeling of personal control generally believe that they can influence what happens to

Conflicting opinions about ethical consumption

Opinions related to ethical or responsible consumption vary. According to some critics, this form of individualized political action requires relatively little effort and, while attractive due to its relative simplicity, will never be as effective as legislation and regulations when it comes to 'changing things.'¹ One of the obstacles to being a more effective form of political action is the inability of consumers to assimilate the huge amount of information necessary to make ethical purchasing decisions on every occasion. Other authors point out that some 'socially acceptable' or 'green' products are not necessarily so, particularly when it is the manufacturers themselves who designate their products as such.² Finally, the truly cynical believe that ethical consumption is just a way for the more fortunate to stand out socially without being concerned for anything other than their personal prestige and their reputation, for example, to appear green or morally superior to others.³

In contrast to these viewpoints, others believe—and support their arguments with historical examples—that consumers can have a great deal of power and influence over corporate conduct and government policy.⁴ Organized movements against sweatshops in the garment industry, for example, led some large companies to overhaul their practices by opening their doors to independent monitoring, increasing minimum salaries and improving health and safety conditions in their factories.⁵ Some experts also point out that, for many young people, ethical consumption constitutes a new

and important way to become politically engaged.⁶ Finally, recognized fair-trade certification agencies, like TransFair Canada, claim that there is a real improvement in working conditions when this production process is put in place.

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them, that they have the resources to meet various problems, and that their future depends mostly on their actions.

Summary

In Canada, between 2003 and 2008, participation in ethical consumption increased while participation in most other types of political participation declined or remained the same. In 2008, the proportion of people who had purchased or boycotted a product for ethical reasons rose to 27%, compared to 20% in 2003.

Levels of education and income had an effect on the probability of having chosen or boycotted a product for ethical reasons. For example, in 2008, 41% of people with a university degree had purchased or boycotted a product for ethical reasons, compared with 22% of those whose highest level of education was a high school diploma. Also, people with the highest income were much more likely to have consumed or boycotted a product for ethical reasons than those with a lower income.

The other factors associated with greater participation in ethical consumption were being born in Canada; living common-law or being single; living in a metropolitan area; having little confidence in major corporations; not having any religious affiliation; having a greater sense of personal control; and actively participating in several organized groups.



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Table A.1 Logistic regressions of factors associated with ethical consumption

| | Unadjusted results ¹ | Model with socioeconomic variables only | Model with attitudes, values and personality traits | Full model |
|---|------------------------------------|---|---|---------------|
| odds ratio | | | | |
| Sex | | | | |
| Men † | 1.00 | 1.00 | ... | 1.00 |
| Women | 1.00 | 1.02 | ... | 1.10 |
| Age | | | | |
| 25 to 54 † | 1.00 | 1.00 | ... | 1.00 |
| 65 or older | 0.42* | 0.60* | ... | 0.64* |
| Highest level of education | | | | |
| Less than a high school diploma | 0.31* | 0.36* | ... | 0.41* |
| High school diploma † | 1.00 | 1.00 | ... | 1.00 |
| Diploma from a college or trade school | 1.33* | 1.25* | ... | 1.19* |
| University degree | 2.37* | 2.38* | ... | 1.88* |
| Household income | | | | |
| Less than \$60,000 † | 1.00 | 1.00 | ... | 1.00 |
| \$60,000 to \$99,999 | 1.63* | 1.18* | ... | 1.16* |
| \$100,000 or more | 2.47* | 1.49* | ... | 1.42* |
| Marital status | | | | |
| Married † | 1.00 | 1.00 | ... | 1.00 |
| Common-law | 1.60* | 1.37* | ... | 1.32* |
| Other | 0.99 | 1.17* | ... | 1.14* |
| Children aged 0 to 12 years in the household | | | | |
| No † | 1.00 | 1.00 | ... | 1.00 |
| Yes | 1.12* | 0.94 | ... | 0.91 |
| Immigrant status | | | | |
| Born in Canada/Canadian citizens by birth | 2.88* | 4.27* | ... | 3.16* |
| Recent immigrants (arrived in 1990 or after) † | 1.00 | 1.00 | ... | 1.00 |
| Other immigrants (arrived before 1990) | 2.24* | 3.20* | ... | 2.51* |
| Region of residence | | | | |
| Atlantic | 0.61* | 0.64* | ... | 0.70* |
| Quebec | 1.08 | 1.12 | ... | 1.43* |
| Ontario † | 1.00 | 1.00 | ... | 1.00 |
| Prairies | 0.78* | 0.79* | ... | 0.76* |
| British Columbia | 1.20* | 1.28* | ... | 1.13 |
| Type of region of residence | | | | |
| Census metropolitan areas and census agglomerations † | 1.00 | 1.00 | ... | 1.00 |
| Outside census metropolitan areas and census agglomerations | 0.66* | 0.81* | ... | 0.78* |

Table A.1 Logistic regressions of factors associated with ethical consumption (continued)

| | Unadjusted results ¹ | Model with socioeconomic variables only | Model with attitudes, values and personality traits | Full model |
|---|------------------------------------|---|---|---------------|
| odds ratio | | | | |
| Confidence in major corporations | | | | |
| A great deal of confidence † | 1.00 | ... | 1.00 | 1.00 |
| Quite a lot of confidence | 1.93* | ... | 1.70* | 1.36* |
| Not very much confidence | 3.44* | ... | 3.03* | 2.61* |
| No confidence at all | 3.97* | ... | 4.08* | 3.64* |
| Religious affiliation | | | | |
| No † | 1.00 | ... | 1.00 | 1.00 |
| Yes | 0.62* | ... | 0.63* | 0.67* |
| Feeling of personal control | | | | |
| | 1.74* | ... | 1.54* | 1.20* |
| Participation in organized groups (number) | | | | |
| None † | 1.00 | ... | 1.00 | 1.00 |
| 1 or 2 | 1.70* | ... | 1.54* | 1.29* |
| 3 or 4 | 2.31* | ... | 2.04* | 1.59* |
| 5 or more | 3.77* | ... | 3.34* | 2.50* |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Odds ratios when the other factors are not controlled. Corresponds to the descriptive percentages presented in Table 1, but changed to odds ratios to enhance the interpretation of Table 2.

Source: Statistics Canada, General Social Survey, 2008.

The financial knowledge of Canadians

by Leslie-Anne Keown

Introduction

For optimum control over their financial lives, Canadians need to be knowledgeable about a multitude of financial options and actively engaged in the financial sector. Research, mostly conducted in a non-Canadian context, has shown that the ability to function within this complex system may influence people's capacity to buy a home, retire comfortably or support their children's postsecondary education.¹

Many things influence how Canadians navigate their way through the many financial options and services available. One of the factors affecting the finances of individuals is their level of financial knowledge.² This article uses the objective assessment (quiz) of financial knowledge that was asked as part of the 2009 Canadian Financial Capability Survey (CFCS). It explores, for the first time in a national Canadian context, how financial knowledge is related to sociodemographic characteristics and other financial behaviours like having a budget or investments. In particular, this article looks at two sets of characteristics: individual demographic characteristics such as age, income and sex; and the financial behaviour of individuals. The study includes individuals aged 18 to 64 who responded to the household income question of the CFCS and answered all the questions in the

financial knowledge quiz (for more information about the data and concepts see "What you should know about this study").

The financial knowledge test of the CFCS was a multiple-choice quiz comprised of 14 questions compiled and adapted from a variety of

What you should know about this study

This article uses information from the 2009 Canadian Financial Capability Survey (CFCS). The CFCS was sponsored by Human Resources and Skills Development Canada, Finance Canada and the Financial Consumer Agency of Canada. Specifically, the survey was conducted to shed light on Canadians' knowledge, abilities and behaviour concerning financial decision making. In other words, how Canadians understand their financial situation, the financial services available to them and their plans for the future. The survey was designed to collect information surrounding respondents' approaches to day-to-day money management and budgeting, longer term money management and general financial planning.

The survey population was all persons 18 years and over living in the 10 provinces. The final survey sample was 15,519 individuals representing approximately 26 million Canadians. This article focuses on Canadians aged 18 to 64 who stated their household income and responded to all questions in the financial knowledge quiz. This gives a study population of 8,319 representing just over 14 million Canadians. Results are presented in the tables for those who did not report their household income, but these results are not discussed or analyzed in the text of the article.

Income¹ was grouped into three categories: people in households where the household income was in the median or middle income range (\$67,001 to \$95,000); people in households where the household income was lower than the median income range (\$0 to \$67,000); and those in households with incomes greater than the median range (over \$95,000).²

1. Approximately 30% of individuals did not state their household income and are not included in this article.
2. Collapsing of quintiles into three groups was done after the collapsed groups were verified as being similar.

sources.³ These questions were asked for the first time in a national survey and provide a baseline measure. The quiz included questions on inflation and interest rates, credit reports and credit ratings, stocks and risk, insurance, taxation, debts and loans, and banking fees. The quiz questions and answers appear in Appendix A.

How did Canadians do on the quiz?

Overall, Canadians received a grade of 67% on the quiz. In other words, the average Canadian between 18 and 64, who reported household income in the survey, answered about 9 of the 14 questions correctly. Since this was the first time this group of questions had been asked in a national survey, it is not possible to know if financial knowledge is increasing or decreasing. However, it is possible to determine which characteristics are related to scoring higher or lower than average on the quiz.

The importance of income

Past research, largely done outside Canada, has indicated that income and financial knowledge are related in important ways.⁴ Generally, it has been found that people with higher incomes do better on financial knowledge tests. One reason for this may be that people in lower income brackets may not need to use the same financial services as those in higher income brackets. As a result, people in lower income brackets may have less need for some financial services or knowledge and thus less experience in using these services.⁵ For instance, limited disposable income or other financial resources may mean some individuals do not invest in the stock market and may not have acquired the same knowledge as others who do invest in the stock market.

Another reason for the relationship between income and financial knowledge may be that characteristics associated with higher incomes, such as higher levels of education, also influence performance on the quiz.⁶

Furthermore, some international research has found a link between financial literacy (of which financial knowledge is an element) and financial behaviours like saving for retirement or using credit—particularly among those in lower income groups.⁷

The CFCS quiz confirms the important association between household income and financial knowledge. Canadians with household incomes of \$67,000 or less achieved an average score of 62%. Those with income in the median range (\$67,001 to \$95,000) had an average score of 67%. Those with incomes above the median (above \$95,000) had an average grade of 71%, about 10 percentage points greater than those in the lower income group (Chart 1).

Not only did income impact financial knowledge scores directly, but it often influenced the relationship of individual demographic characteristics and financial behaviours with financial

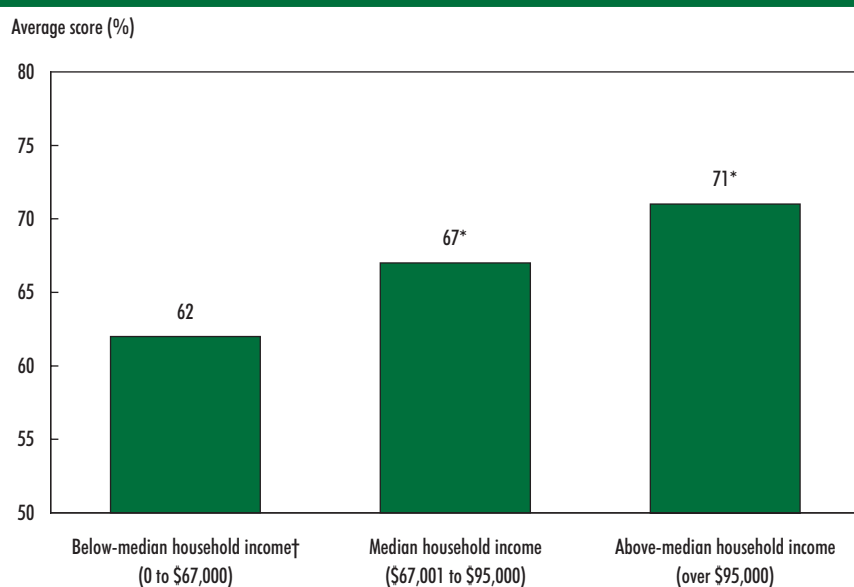
knowledge. Thus, it is also important to examine the relationship between financial knowledge and other characteristics both globally and within each income range.

The university-educated score higher on financial knowledge

Education was clearly associated with scores on the financial knowledge quiz. Across all income levels those who had a university degree had higher scores than those with less education. For example, university graduates had an average score of 73% while those with a high school diploma or less had an average score of 60% (Chart 2).

Men consistently scored somewhat higher than women on the quiz but the difference in scores was relatively small for those in the lower and median income groups. The difference was most pronounced in the upper income group where men, on average, scored 3.1 percentage points higher than women (Table 1).

Chart 1 Higher incomes associated with higher scores on financial knowledge assessment

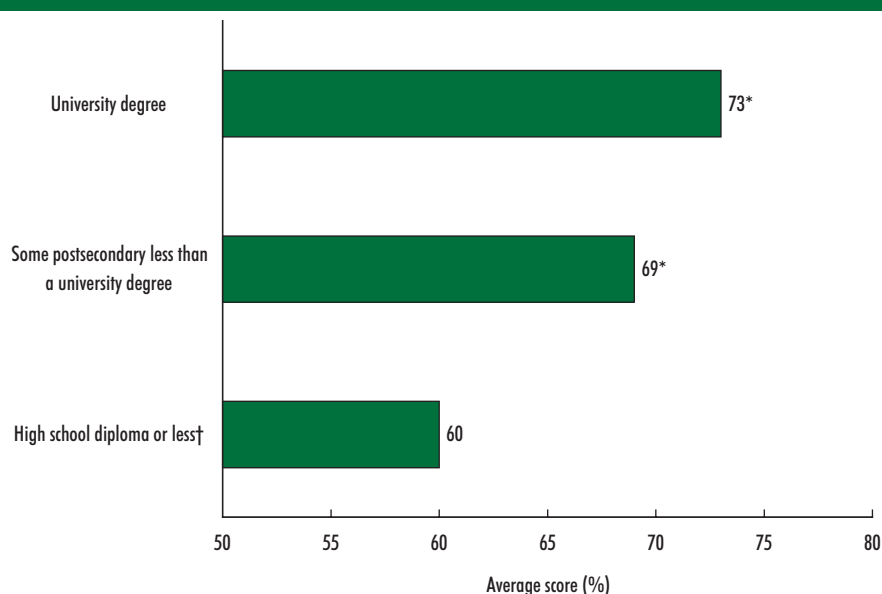


† reference group

* statistically significant difference from the reference group at $p < 0.05$

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

Chart 2 Higher education associated with higher financial knowledge scores



† reference group

* statistically significant difference from the reference group at $p < 0.05$

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

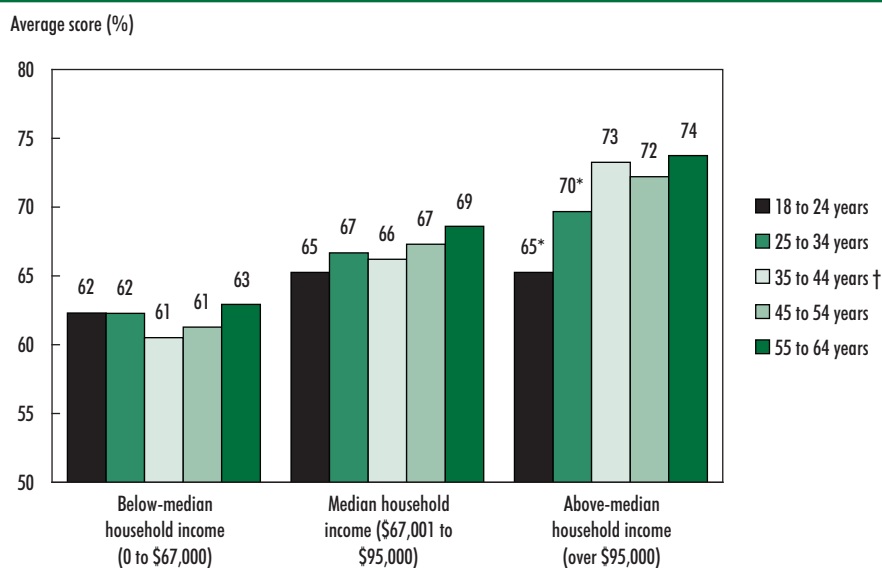
The relationship between certain characteristics and financial knowledge differs by income level

Labour force status was also associated with quiz scores but the relationship varied across income groups. In the lowest and highest income groups, those who were self-employed or those who were retired scored higher than those who were employed. In the median income group, the relationship between labour force status and financial knowledge was statistically significant but relatively weak.

In the aggregate, it appears that homeowners had higher financial knowledge scores than renters. However, once household income was considered, the relationship between home ownership and higher financial knowledge scores existed only for those in the lower income group. For the middle and higher income groups, home ownership was not associated with financial knowledge scores.

A similar situation occurs when the relationship between age and financial knowledge is considered. In general, the data show that younger individuals (18 to 24 years of age) had less financial knowledge than older individuals. However, once income is considered, the impact of age was seen only in the highest income group—it did not influence scores in the lower and middle income groups (Chart 3). Thus, older people with higher incomes had greater financial knowledge than their younger counterparts, but there were no age-based differences for the other two income groups.

Chart 3 Age only made a difference for the highest income group



† reference group

* statistically significant difference from the reference group at $p < 0.05$

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

Immigrants score lower on financial knowledge than those born in Canada

Immigrants had lower financial knowledge scores than people born in Canada. However, among immigrants, the length of time they had been in Canada was an important related characteristic—with those in Canada more than 10 years generally scoring higher than more recent immigrants

Table 1 Demographic characteristics and financial knowledge quiz scores

| Select characteristics | Average quiz score | | | | Household income not stated ² |
|--|------------------------------|---|--|---|--|
| | Overall average ¹ | Below-median household income (0 to \$67,000) | Median household income (\$67,001 to \$95,000) | Above-median household income (over \$95,000) | |
| | percentage | | | | |
| Total | 66.6 | 61.8 | 66.9 | 71.4 | 56.8 |
| Age | | | | | |
| 18 to 24 years | 64.1* | 62.3 | 65.3 ^E | 65.3* | 53.4 |
| 25 to 34 years | 66.0 | 62.3 | 66.7 | 69.7* | 57.3 |
| 35 to 44 years† | 67.2 | 60.5 | 66.2 | 73.2 | 56.7 |
| 45 to 54 years | 67.1 | 61.3 | 67.3 | 72.2 | 60.3 |
| 55 to 64 years | 67.5 | 62.9* | 68.6 | 73.8 | 56.9 |
| Sex | | | | | |
| Women† | 65.1 | 60.9 | 65.7 | 69.6 | 56.3 |
| Men | 68.0* | 62.7* | 68.0* | 72.7* | 57.5 |
| Family status | | | | | |
| Unattached | 66.6 | 64.4* | 73.3* | 78.4* | 58.9 |
| Couple only | 67.7 | 62.2* | 66.7 | 73.0 | 57.5 |
| Couple with children† | 67.2 | 59.4 | 66.3 | 72.3 | 58.9 |
| Single parent | 63.6* | 60.9 | 70.6 ^E | 68.3 ^E | 55.7 |
| Other | 64.3* | 62.8* | 65.2 | 65.3* | 54.5* |
| Immigrant status | | | | | |
| Born in Canada/Canadian citizen by birth† | 67.9 | 63.7 | 68.2 | 71.9 | 58.8 |
| Long-term immigrant | 63.0* | 57.3* | 62.4* | 69.1* | 52.0* |
| Recent immigrant (in last 10 yrs) | 57.6* | 52.0* | F | 69.5* ^E | 47.0* |
| Education | | | | | |
| High school diploma or less† | 60.0 | 57.1 | 61.2 | 65.0 | 49.4 |
| Some postsecondary (less than a university degree) | 68.8* | 64.9* | 68.5* | 72.1* | 61.3* |
| University degree | 73.1* | 65.9* | 72.4* | 76.3* | 65.3* |
| Labour force status | | | | | |
| Employed† | 67.4 | 62.3 | 67.0 | 71.4 | 58.4 |
| Self-employed | 69.9* | 65.5* | 67.8 | 74.3* | 62.6* |
| Unemployed | 60.9* | 57.6* | 64.3 | 68.3 | 50.2* |
| Retired | 67.9 | 64.5* | 70.2* ^E | 75.6* | 59.8 |
| Other | 62.8* | 60.2 | 64.6 ^E | 66.2* | 53.2* |
| Home ownership | | | | | |
| Own with no mortgage | 68.4 | 63.9 | 67.3 | 72.3 | 60.6 |
| Own with mortgage† | 68.1 | 63.4 | 67.1 | 71.2 | 57.9 |
| Rent | 61.9* | 59.4* | 65.6 | 70.1 | 52.3* |
| Region | | | | | |
| Atlantic Canada | 64.0* | 61.0 | 64.7 | 68.3* | 60.2* |
| Quebec | 64.0* | 60.2 | 65.5 | 68.7* | 55.9 |
| Ontario† | 67.1 | 60.7 | 66.8 | 72.6 | 55.4 |
| Saskatchewan/Manitoba | 67.3 | 64.5* | 66.9 | 71.0 | 57.4 |
| Alberta | 69.5* | 66.0* | 67.6 | 71.7 | 62.3* |
| British Columbia | 69.2* | 65.1* | 70.5 | 72.7 | 59.2 |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Overall percentage means do not include those who did not state their household income.

2. Results reported for those who did not state their household income, but no analysis is provided in the article.

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

(except in the highest income group). In addition, the difference in scores between those born in Canada and immigrants decreased in size as household income increased (Chart 4).

Financial knowledge scores vary by region of residence and income

Overall, scores on the financial knowledge quiz increased from east to west—from 64% in Atlantic Canada to 69% in British Columbia. However, as seen with the other socioeconomic and demographic characteristics, once household income is considered the relationship becomes more complex. For the lower income group, scores were higher in the west than in the east. For those in the middle income group, region of residence was not associated with financial knowledge. People in the highest income group had lower scores in Atlantic Canada and Quebec compared with those in Ontario and the west.

Among the various household types, people who lived alone did better on the financial knowledge quiz than those in families (Chart 5). This may be because those who live alone have sole responsibility for their day-to-day financial transactions and other financial decisions.

Financial behaviour and financial knowledge are related but income also plays a role

Not only is there a relationship between financial knowledge and demographic characteristics, but financial behaviour is also linked to financial knowledge. Individuals may acquire financial knowledge and subsequently use this knowledge in their day-to-day financial transactions. For example, individuals can learn about how credit, interest rates and general banking work when using a credit card to pay for purchases or withdrawing money for paying bills. Individuals can use and acquire financial knowledge while undertaking more complex and

Chart 4 Immigrants had lower financial knowledge scores than the Canadian-born

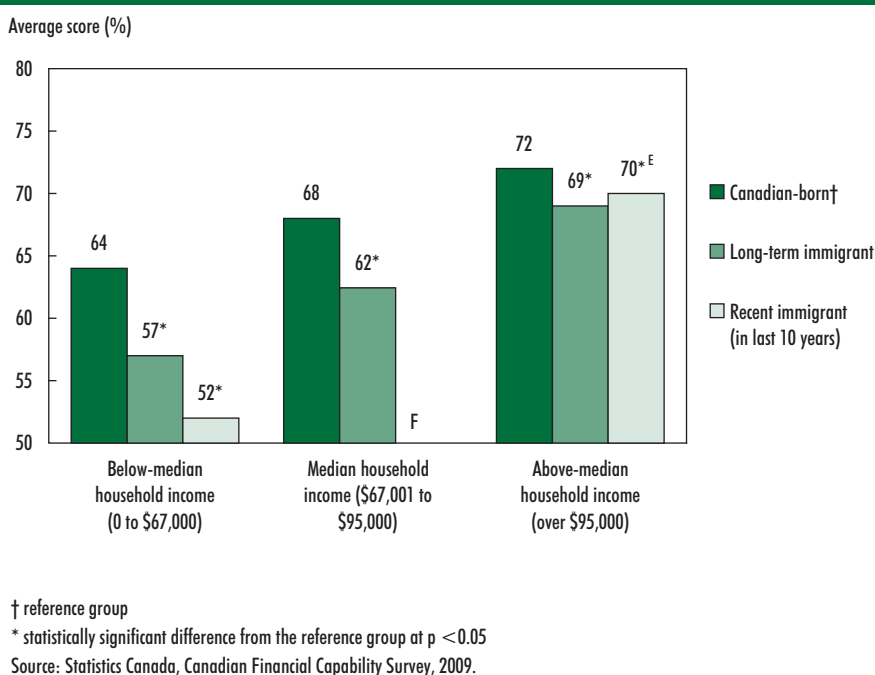


Chart 5 For all income groups, unattached individuals had the highest financial knowledge scores

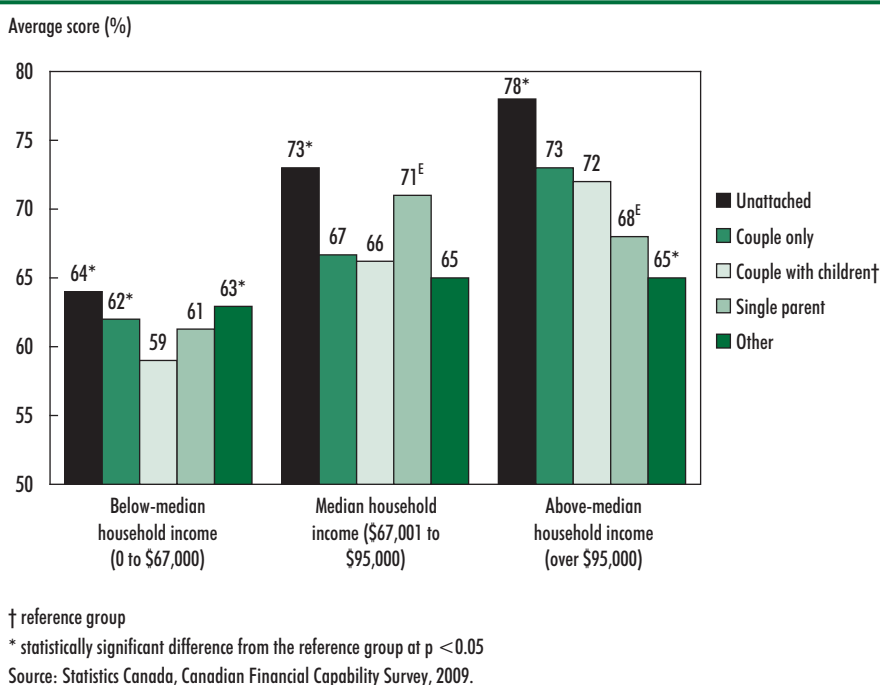


Table 2 Household financial behaviours and financial knowledge quiz scores

| Select characteristics | Average quiz score | | | | Household income not stated ² |
|---|------------------------------|---|--|---|--|
| | Overall average ¹ | Below-median household income (0 to \$67,000) | Median household income (\$67,001 to \$95,000) | Above-median household income (over \$95,000) | |
| | percentage | | | | |
| Total | 66.6 | 61.8 | 66.9 | 71.4 | 56.8 |
| Use a household budget | | | | | |
| Not† | 66.1 | 61.3 | 66.0 | 70.5 | 55.3 |
| Yes | 67.2* | 62.4 | 67.6 | 72.1* | 59.2* |
| Late payments in last twelve months | | | | | |
| Not† | 67.1 | 62.0 | 67.0 | 71.7 | 57.6 |
| Yes | 63.7* | 61.6 | 66.4 | 68.1* | 52.8* |
| Financial struggle | | | | | |
| Not† | 67.8 | 61.9 | 67.3 | 71.8 | 57.7 |
| Yes | 64.8* | 61.8 | 66.4 | 69.9* | 55.6 |
| Have a credit card | | | | | |
| Not† | 57.8 | 56.8 | 62.1 ^E | F | 45.8 |
| Yes | 67.5* | 62.9* | 67.2* | 71.6* | 58.7* |
| Have investments | | | | | |
| Not† | 63.7 | 60.0 | 65.2 | 69.6 | 52.7 |
| Yes | 70.8* | 67.2* | 69.4* | 72.9* | 63.4* |
| Responsibility for day-to-day bills | | | | | |
| Self† | 68.0 | 63.1 | 70.0 | 74.2 | 60.6 |
| Spouse | 65.9* | 58.5* | 64.0* | 71.3* | 56.0* |
| Both | 66.1* | 61.2 | 65.4* | 70.8* | 56.2* |
| Someone else | 62.5* | 60.1 | 61.7* ^E | 64.1* | 53.1* |
| Responsibility for financial decisions | | | | | |
| Self† | 68.4 | 63.3 | 70.3 | 76.1 | 60.0 |
| Spouse | 62.4* | 56.1* | 61.1* | 68.0* | 52.5* |
| Both | 67.1* | 61.6* | 66.2* | 71.4* | 59.5 |
| Someone else | 62.8* | 60.4* | 63.7* ^E | 64.0* | 52.8* |
| Taken finance-related course in last 12 months | | | | | |
| Not† | 66.2 | 61.2 | 66.4 | 71.5 | 56.2 |
| Yes | 69.5* | 67.1* | 70.2* | 70.8 | 60.4* |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Overall percentage means do not include those who did not state their household income.

2. Results reported for those who did not state their household income, but no analysis is provided in the article.

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

long-term financial transactions like investing, saving for retirement or making decisions about loans and mortgages.⁸ These activities and transactions can be thought of as financial behaviours and they play an important role in the financial knowledge of individuals.

One important element of financial behaviour when considering its relationship to financial knowledge is the choices, decisions and actions made regarding household financial decisions and transactions. There are two distinct areas of financial participation: day-to-day transactions like paying bills and longer term financial decisions like financial investment and planning. In both of these areas, regardless of household income, those who have sole responsibility for these decisions had higher financial knowledge scores than those who had no responsibility or shared the responsibility. For instance, in the below median income group those with sole responsibility for day-to-day financial transactions

scored 3 percentage points higher than when responsibility was assumed by someone else (63% versus 60%). In contrast, for those in the above median group, the difference between these two groups is larger at 10 percentage points (74% versus 64%) (Table 2).

Specific actions or behaviours like having a credit card or taking a financial course are also financial behaviours that are related to financial knowledge. Regardless of income level, people with a credit card had higher financial knowledge scores than those who did not (67% versus 58%). People with investments also scored higher than those without, but the magnitude of the difference varied by income. Similarly, having taken some type of financial course in the 12 months preceding the survey was associated with higher scores on the financial knowledge quiz. Furthermore, people in the highest income group who followed a budget or made bill payments on time were significantly more likely

to have higher financial knowledge scores than those who were in the high income grouping but did not make bill payments on time or follow a budget (Table 2).

Summary

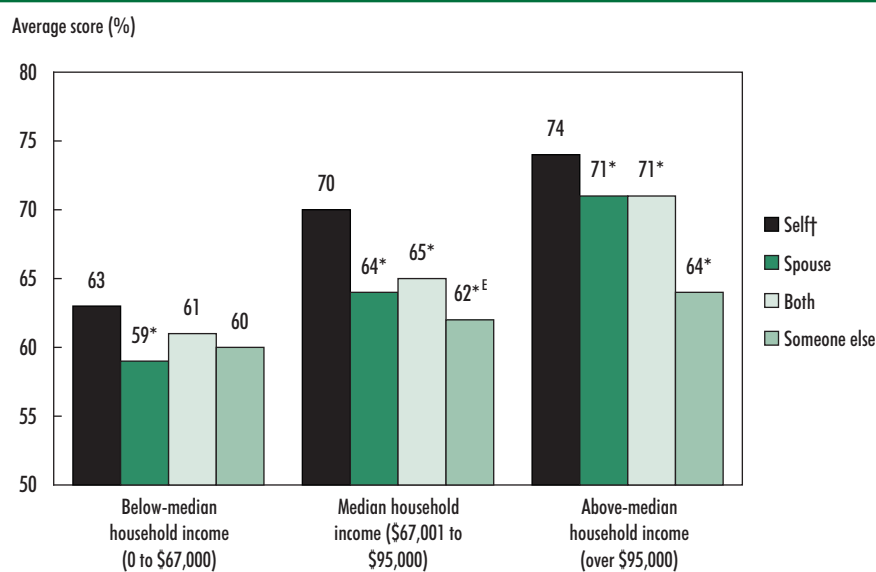
Navigating the myriad of financial options and understanding the underlying choices available can be a daunting task. Financial knowledge can assist with this navigation while simultaneously being enhanced by these activities.

The relationship between household income and financial knowledge is notable. Those in the higher income group had higher average scores than those in the lower and middle income groups, and the relationship between financial knowledge and other characteristics like demographics and financial behaviours often varied by income group.

Among the demographic characteristics, the relationship between education and financial knowledge was strong, with those with higher education having higher average scores. Men had slightly higher scores than women and the self-employed had higher scores than those employed by someone else and those without work. Home ownership, region of residence, family status and age were also related to financial knowledge and the nature of these relationships varied by income. Immigrants had lower financial knowledge scores than people born in Canada. This relationship was complex, with income and time in Canada being important considerations when looking at average financial knowledge scores among immigrants.

Financial behaviours and financial knowledge were also related and often varied by income group. Being solely responsible for day-to-day financial responsibilities and other types of financial decisions was associated with having higher financial knowledge scores compared to others who shared these responsibilities, but the magnitude

Chart 6 People with sole responsibility for day-to-day financial transactions had higher financial knowledge scores



† reference group

* statistically significant difference from the reference group at $p < 0.05$

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

of the difference varied by income group. Similarly, other financial behaviours like having a credit card or using a budget were also associated with financial knowledge.



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Appendix A The financial knowledge quiz of the Canadian Financial Capability Survey

Each of the 14 questions in the quiz is listed below. The correct answers and the percentage of the study population that selected the correct answer are presented in the answer key at the end of the box.

1. **If the inflation rate is 5% and the interest rate you get on your savings is 3%, will your savings have at least as much buying power in a year's time?**
 - a) Yes
 - b) No
2. **A credit report is...?**
 - a) A list of your financial assets and liabilities
 - b) A monthly credit card statement
 - c) A loan and bill payment history
 - d) A credit line with a financial institution
3. **Who insures your stocks in the stock market?**
 - a) The National Deposit Insurance Corporation
 - b) The Securities and Exchange Commission
 - c) The Bank of Canada
 - d) No one
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.**
 - a) True
 - b) False

Appendix A The financial knowledge quiz of the Canadian Financial Capability Survey (continued)

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) A young single woman with two young children
 - b) A young single woman without children
 - c) An elderly retired man, with a wife who is also retired
 - d) A young married man without children
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?**
 - a) Sales tax may be charged on the interest that you earn
 - b) You cannot earn interest until you pass your 18th birthday
 - c) Earnings from savings account interest may not be taxed
 - d) Income tax may be charged on the interest if your income is high enough
7. **Inflation can cause difficulty in many ways. Which group would have the greatest problem during periods of high inflation that lasts several years?**
 - a) Young working couples with no children
 - b) Young working couples with children
 - c) Older, working couples saving for retirement
 - d) Older people living on fixed retirement income
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?**
 - a) Corporate bonds
 - b) Mutual Funds
 - c) A bank savings account
 - d) Locked in a safe at home
 - e) Stocks
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) A twenty-five year corporate bond
 - b) A house financed with a fixed-rate mortgage
 - c) A 10-year bond issued by a corporation
 - d) A certificate of deposit at a bank
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?**
 - a) When something goes on sale
 - b) When the interest on the loan is greater than the interest obtained from a savings account
 - c) When buying something on credit allows someone to get a much better paying job
 - d) It is always more beneficial to borrow money to buy something now and repay it with future income
11. **Which of the following statements is not correct about most ATM (Automated Teller Machine) cards?**
 - a) You can get cash anywhere in the world with no fee
 - b) You must have a bank account to have an ATM card
 - c) You can generally get cash 24 hours-a-day
 - d) You can generally obtain information concerning your bank balance at an ATM machine

Appendix A The financial knowledge quiz of the Canadian Financial Capability Survey (continued)

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

- a) Making late payments on loans and debts
- b) Staying in one job too long
- c) Living in the same location too long
- d) Using your credit card frequently for purchases

13. What can affect the amount of interest that you would pay on a loan?

- a) Your credit rating
- b) How much you borrow
- c) How long you take to repay the loan
- d) All of the above

14. Which of the following will help lower the cost of a house?

- a) Paying off the mortgage over a long period of time
- b) Agreeing to pay the current rate of interest on the mortgage for as many years as possible
- c) Making a larger down payment at the time of purchase
- d) Making a smaller down payment at the time of purchase

Answer key:

| Question | Correct answer | Percentage giving correct answer | Question | Correct answer | Percentage giving correct answer |
|----------|----------------|----------------------------------|----------|----------------|----------------------------------|
| 1 | b | 70 | 8 | c | 68 |
| 2 | c | 51 | 9 | b | 43 |
| 3 | d | 38 | 10 | c | 30 |
| 4 | a | 76 | 11 | a | 79 |
| 5 | a | 81 | 12 | a | 94 |
| 6 | c and d | 14 and 64 | 13 | d | 75 |
| 7 | d | 57 | 14 | c | 92 |

Debt and family type in Canada

by Matt Hurst

Introduction

After several years of impressive economic growth, the world faced an economic slowdown in 2008. The housing market collapse in the United States raised concerns around the world about the sustainability of current levels of household debt. Although the Canadian economy fared better than that of many other countries, increasing levels of household debt remain a concern.

There are several reasons household debt has been increasing. Historically, low interest rates, combined with several other factors, contributed to current household debt levels. These factors include: increased household income from women's rising labour market participation; a cultural shift towards consumerism; increasing demand in the housing market from baby boomers and the echo generation; increased competition and deregulation in the financial sector; financial product innovation; and the relaxing of credit constraints.¹

While debt has been studied at the broad household level, little research has examined the relationship between debt and family type to determine if certain family types are more likely to face financial instability as a result of their debt. The first part of this article provides an overview of debt at the household level, using data from Statistics Canada's System of National Accounts. The second part examines family

structure and debt management indicators, using data from the 2009 Canadian Financial Capabilities Survey (CFCS). More specifically, it explores the amount of debt, debt-to-income and debt-to-asset ratios by household type. It will also look at whether Canadians with certain socio-demographic characteristics or who live in families of a certain type are more likely to have a high debt load, that is, their total debt service payment (interest and principal repayments) would represent 40% or more of their household income before tax (for more information see "What you should know about this study").

Understanding debt metrics

Several indicators can be used to explore household debt. The most basic measure is average household debt. Examining average household debt over time illustrates how debt is changing. However, average household debt does not take into consideration household income.

Another indicator is the debt-to-household income ratio, which measures how much a household owes compared to how much it earns. But the debt-to-income ratio does not take into consideration the interest payable on debt.

The total debt service ratio measures the ability of a household to cover or pay off their debt. This ratio is the total interest and principal repayment of debts over a certain

period as a proportion of the total income for that period. A household that has a high total debt service ratio is experiencing a high debt load—indicating that their debt may not be affordable.

Finally, the debt-to-asset ratio shows the value of a household's debts compared to the value of its assets. A high debt-to-asset ratio can indicate that debts are not adequately backed by assets. Moreover, should the value of the assets decrease because of fluctuations in the market, the ratio will increase.²

Rising debt and lower mortgage interest rates since 1984

Between 1984 and 2009, real average household debt for Canadians more than doubled from \$46,000 to \$110,000 (Chart 1). The main contributor to this increase was mortgage debt. Over this period, the general trend was for average household debt to move in the opposite direction of the interest rate. As interest rates decrease, average household debt increases because debt becomes more affordable. Beginning in 2002, growth in debt accelerated.

Debt-to-income ratio climbed more than 55 percentage points between 1990 and 2009

Household income is key to understanding debt. For example, data from national accounts show that, on average between 1970

What you should know about this study

The first part of this paper uses data from the Canadian System of National Economic Accounts (CSNEA). The CSNEA offers an accurate, comprehensive and multi-dimensional portrait of our economy in terms of structure, current performance and trend. It provides the accounting framework for macroeconomic analysis, and gives various institutions and levels of government the tools to assist them in assessing a wide range of economic and policy decisions. Where applicable, dollar values are corrected for inflation, and divided by the number of households in Canada for the particular year.

The second part of this article uses data from the first Canadian Financial Capability Survey (CFCS), conducted in 2009. The need for this survey has been brought about by changing economic conditions, the variety and complexity of financial products available and the need to establish baseline data. The CFCS was conducted between February and May 2009.

There were 15,519 respondents to CFCS. The final sample used in the model-based analysis (table 4) after age and non-response exclusions was 7,301. Sixteen percent (unweighted) of the original sample did not provide a dollar value of their total household debt and were removed from the analysis.

Bootstrap variance estimation was used for all statistical tests in this article that used CFCS data.

Debt-to-household income ratio: This measures how much a household owes compared to how much it earns.

Debt-to-asset ratio: This measures the value of a household's debts compared to the value of its assets. A high debt-to-asset ratio is a ratio of 80% or higher.

Total debt service ratio: A "high" total debt service payment (principal and interest repayment of a loan) is defined by the Bank of Canada to be 40% or more of pre-tax household income.¹ Households with "high" debt service ratios are more financially vulnerable and are more likely to have problems meeting debt obligations.²

Since only aggregate debt data is available in the financial capabilities survey, this is converted to a debt repayment figure. For mortgage debt, this would be a household's yearly payment towards principal and interest. Since the vast majority of household debt is from a mortgage,³ the average

interest rate for conventional mortgages from the chartered banks between 2006 and 2010 (6.45%) is used to calculate a repayment figure for each household.⁴ In this sense, the definition is conservative, as households with other forms of debt will have payments at higher rates. Households without debts or income are excluded from this analysis.

Family type: Although the CFCS is a survey that examines households, we have determined family types by looking at the composition of the household. The family types are: couple family with no children under 25 years of age; couple family with youngest child between 0 and 24 years of age; lone-parent family with youngest child between 0 and 24 years of age; other families; unattached individual.

Census metropolitan area (CMA) with high housing costs: This information is based on trends in the median prices of houses sold in large CMAs from 1997 to 2008, from the Survey of Household Spending. High priced CMAs are Halifax, Ottawa, Toronto, Saskatoon, Calgary, Edmonton, Vancouver, and Victoria.

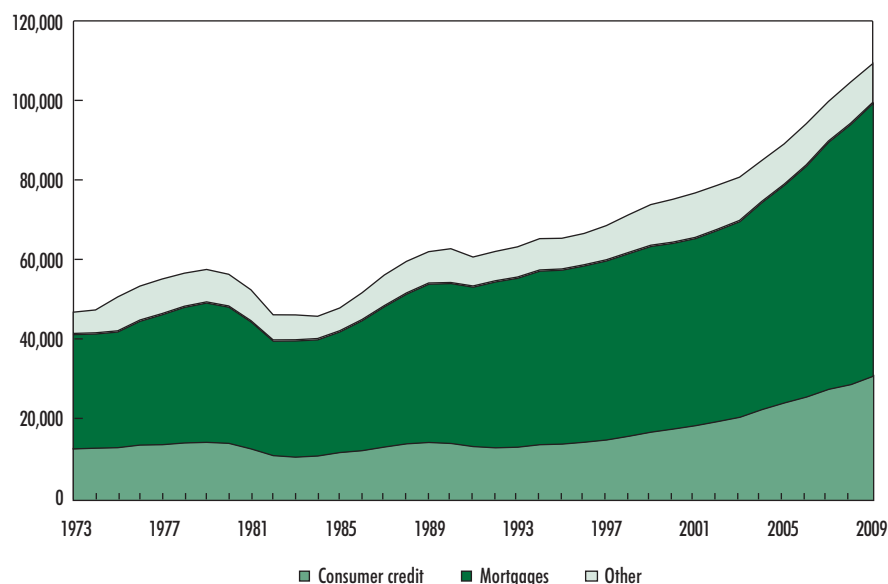
Financial knowledge quiz score: The CFCS asks fourteen questions that test respondents' knowledge of various aspects of finance. These questions had right and wrong answers about specific aspects of financial knowledge.

Self-assessed financial knowledge score: Respondents were asked to rate how good (e.g. good, very good, etc.) their knowledge was on a series of financial subject areas. Together, these questions were used to form a score representing the respondent's self-rated financial knowledge.

1. Dey, S., Djoudad, R. and Terajima, Y. 2008. A Tool for Assessing Financial Vulnerabilities in the Banking Sector. *Bank of Canada Review*.
2. For a detailed discussion of household debt-to-income ratios and potential effects on the banking system, see Bank of Canada. 2009. *Financial System Review*. December.
3. Only 3.4% of debt in 2005 was credit card and instalment debt, which typically charge much higher rates than real estate related debt. Statistics Canada. 2006. *The Wealth of Canadians: An Overview of the Results of the Survey of Financial Security*. Catalogue no. 13F0026MIE2006001.
4. Debt repayments are amortized over 25 years, effectively treating debt like a new mortgage. If budgets become stressed, re-mortgaging to lower payments is a reasonable option to avoid delinquency or foreclosure. The analysis in this article already takes this step into account. Thus, the estimates of the number and percentage of Canadians with high debt payments are conservative.

Chart 1 Growth in average household debt accelerated after 2002

in 2009 constant dollars



Source: Statistics Canada, CANSIM table 378-0051.

and 2009, disposable income per household grew by 37% after adjusting for inflation,³ which enabled households to take on more debt.

Despite this growth in disposable income, the debt-to-income ratio climbed continually between 1984 and 2009, as increases in household debt outpaced growth in income. By 1994, debt levels were greater than incomes, meaning households owed more than they earned. For example, in 1990, total personal and unincorporated business debt was equivalent to 93% of after-tax income. By 2009, total debt was equivalent to 148% of income (Chart 2). Recent research suggests that if interest rates rise by three percentage points, the debt-to-income ratio needs to fall to between 125% and 130% for interest payments on the debt to remain the same.⁴

Stable debt-to-asset ratio until 2008

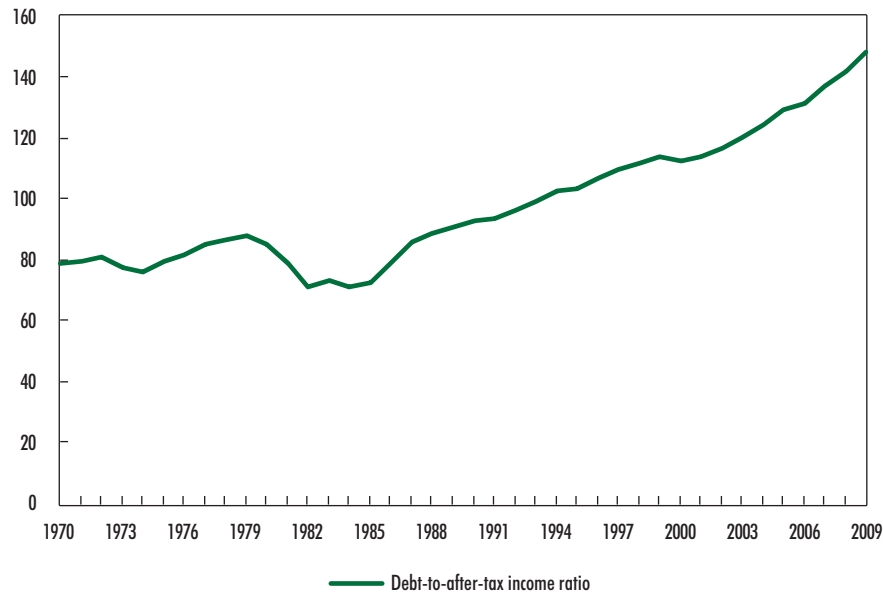
As well as the day-to-day ability to pay for debts from income, another indicator of financial insecurity is the debt-to-asset ratio. This ratio tracks the degree to which debts are backed by assets. Higher ratios indicate there may be more Canadians who carry debt that is not secured by assets. Although household debt increased between 1990 and 2009, the value of personal and unincorporated business assets per household almost doubled over the same period. As a result, the debt-to-asset ratio remained relatively stable between 1970 and 2007, hovering around 16.7% (Chart 3). However, in 2008 and 2009 the debt-to-asset ratio increased to 19.6%, the highest level in more than 35 years.

Older Canadians have less debt

As well as examining economy-wide data on debts, assets and income, it is also important to examine whether certain family types are more likely to carry debt or face financial uncertainty. Overall, data from the 2009 Canadian Financial Capability Survey indicate that 76%

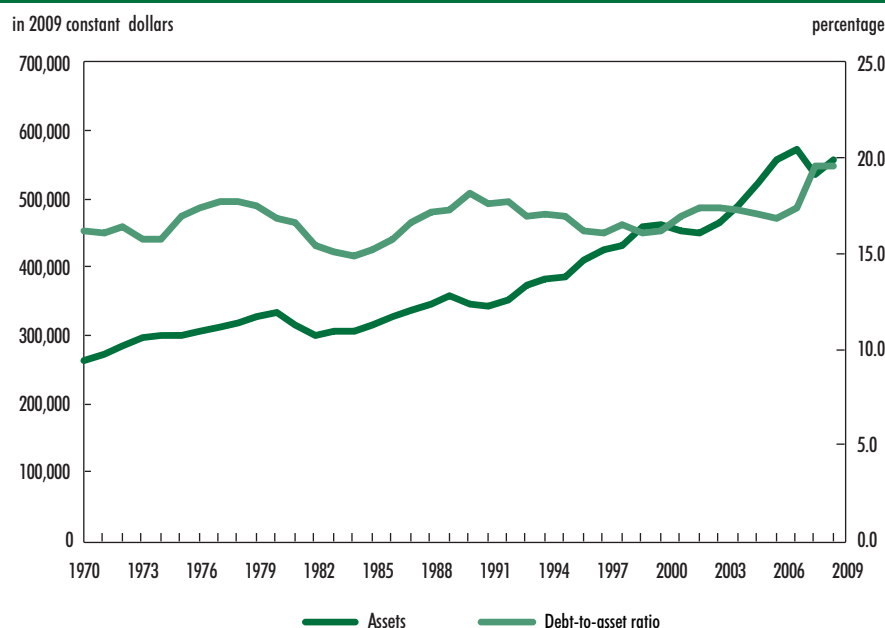
Chart 2 Debt-to-after-tax income ratio increased to 148% by 2009

percentage



Source: Statistics Canada, CANSIM tables 380-0019 and 378-0051.

Chart 3 Debt-to-asset ratio increased to its highest point in 35 years in 2009



Source: Statistics Canada, CANSIM table 378-0051.

of Canadians had household debt (Table 1). Among those with debt, the average debt was about \$119,000.

Younger Canadians (aged 19 to 34 or aged 35 to 49) were more likely to have debt than Canadians aged 50 to 64. This corresponds with the life cycle. Younger households take on debt to purchase homes and related goods early in the life cycle and then spend the following years paying off the debt. Trends in average debt levels generally mirror these results: debt levels were lower for 50- to 64-year olds, though not for lone parents in this age group.

Those least likely to have debt in 2009 were unattached individuals and "other" family types. This may be partly explained by the fact that unattached individuals are less likely to own their residence and have debt associated with home ownership. Among people with debt, unattached individuals had debt of about \$69,000 compared to \$102,000 for lone parents, and \$147,000 for Canadians in couples with children.

Table 1 Proportion and average debt of those with debt, by age and family type, 2009

| | Age of respondent | | | |
|--|-------------------|---------------------|----------------|-----------------------|
| | 19 to 64 | 19 to 34 | 35 to 49 | 50 to 64 |
| | percentage | | | |
| All family types | 76 | 79 | 83 | 64 |
| Couple family, no children under 25 | 72* | 91* | 82* | 62* |
| Couple family, youngest child 0 to 24 | 86* | 90* | 88* | 76* |
| Single parent family, youngest child 0 to 24 | 80* | 73 | 81* | 83* |
| Other families | 66 | 67* | 68 | 57 |
| Unattached individual† | 63 | 73 | 65 | 56 |
| | dollars | | | |
| All family types | 119,000 | 122,000 | 136,000 | 91,000 |
| Couple family, no children under 25 | 110,000* | 141,000* | 124,000* | 87,000 |
| Couple family, youngest child 0 to 24 | 147,000* | 144,000* | 157,000* | 117,000* |
| Single parent family, youngest child 0 to 24 | 102,000* | 97,000 ^E | 98,000* | 118,000* ^E |
| Other families | 91,000 | 96,000 | 80,000 | 68,000 ^E |
| Unattached individual† | 69,000 | 82,000 | 75,000 | 56,000 |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

Debt-to-income ratios highest for young Canadian families

Families with higher debt-to-income ratios spend more of their income on debt payments, and so are more likely to be financially strained. Younger families had higher debt in proportion to their pre-tax household income than did their older counterparts. For example, among couple families with children in 2009, 19- to 34-year olds had a debt-to-income ratio of 180% compared to 125% for 50- to 64-year olds (Table 2).

Among family types, lone-parent families with children had the highest debt-to-income ratio. Lone parent families had a debt-to-income ratio of 227% compared to 170% for couple families with children.

Canadians in lone-parent families more likely to have high debt-to-asset ratios

A high debt-to-asset ratio indicates that individuals are highly leveraged, as their debt may not be fully backed by assets. They may find themselves in a precarious financial position if faced by an economic shock such as an increase in interest rates, a decline in asset prices or a reduction in income.

For Canadians in two age groups (19- to 34-year olds and 35- to 49-year olds), those in single parent families had a higher incidence of large debt-to-asset ratios (80%⁵ or more) compared to those in couple families (with or without children) (Chart 4).

Canadians aged 50 to 64 were the least likely to have a debt-to-asset ratio of 80% or more, irrespective of family composition. Because their debt is well-backed by assets, financial risks associated with rising interest rates or employment disruption are likely to be lower for these people.

Canadians in lone-parent families more likely to have a total debt service ratio of 40% or more

When debt payments are large relative to household pre-tax income, families may find themselves in financial difficulty if unexpected events occur that stress the family budget.

The Bank of Canada calculates a ratio of debt payment to pre-tax income to determine the degree to which Canadians can manage their debt payments. In general, the Bank of Canada considers households to

be at greater financial risk if their total debt payments are equivalent to 40% or more of their income. In comparison, financial institutions often use 30% or lower as a rule of thumb for mortgage approvals.

Between 2006 and 2010, the average interest rate for conventional mortgages was 6.45%. Using this interest rate and debt data from the 2009 CFCS indicates that 4.2% of all Canadian households had a high annual debt load—measured as a total debt service ratio of 40% or over (see “What you should know about this study” for more information on concepts and definitions).

Looking at different family types, the category of lone-parent families had the highest proportion of families with a high debt load (9.6%). The rate for Canadians in couples with children was 3.8% (Table 3).

Factors contributing to high debt metrics

Many factors other than family type may be associated with high debt ratios (debt-to-income ratio, total debt service ratio and debt-to-asset ratio). For example, taken alone, being in a lone-parent family compared to a couple family with

Table 2 Debt-to-pre-tax income ratio of Canadians, by age and family type, 2009

| | Age of respondent | | | |
|--|-------------------|------------------|------------|------------|
| | 19 to 64 | 19 to 34 | 35 to 49 | 50 to 64 |
| | percentage | | | |
| All family types | 161 | 174 | 171 | 131 |
| Couple family, no children under 25 | 136* | 148* | 137* | 128 |
| Couple family, youngest child 0 to 24† | 170 | 180 | 178 | 125 |
| Single parent family, youngest child 0 to 24 | 227* | 197 | 254* | 181* |
| Other families | 161 | 176 ^E | 108* | 131 |
| Unattached individual | 157 | 209 ^E | 142* | 137 |

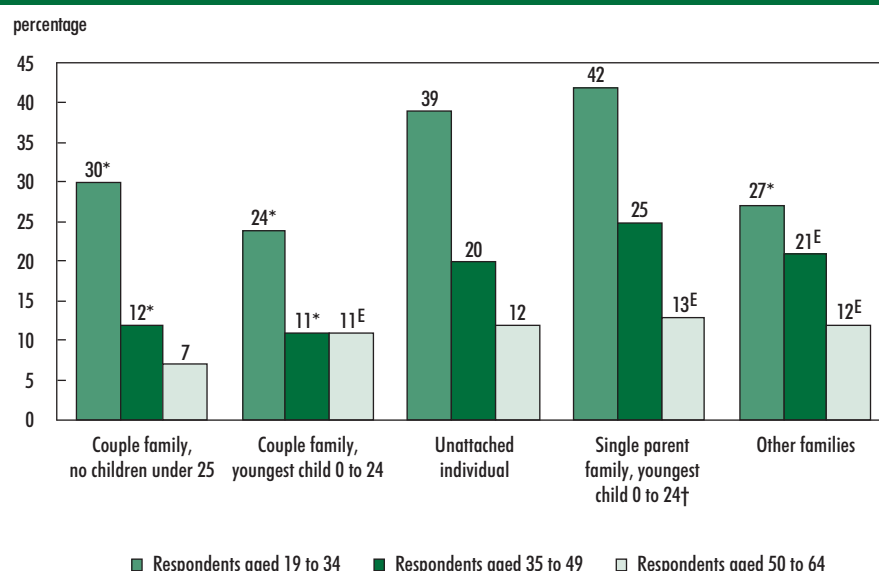
† reference group

* statistically significant difference from the reference group at $p < 0.05$

Note: These figures are not strictly comparable with National Accounts estimates as they use different measures of debt and income.

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

Chart 4 Single parents were more likely to have debt-to-asset ratios of 80% or more



† reference group

* statistically significant difference from the reference group at $p < 0.05$

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

Table 3 Proportion of Canadians in households with high total debt service ratios,¹ by family type, 2009

| | percentage |
|---|------------------|
| All family types | 4.2 |
| Couple family, no children under 25 | 3.2* |
| Couple family, youngest child 0 to 24 | 3.8* |
| Single parent family, youngest child 0 to 24† | 9.6 |
| Other families | 5.1 ^E |
| Unattached individual | 4.0* |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. A high total debt service ratio is 40% or greater. For more information, see "What you should know about this study".

Note: The total debt service ratio is calculated using 6.45%, the average interest rate for conventional mortgages between 2006 and 2010.

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

into account, family type is not a significant predictor of high total debt service ratios or high debt-to-asset ratios. That is, after controlling for income, age, employment status and other factors, those in lone-parent families are just as likely as couple families with children to have a total debt service ratio of 40% or more or a debt-to-asset ratio of 80% or greater. As for debt-to-income ratios, they also did not differ significantly between lone-parent families and couple families with children. However, couples without children and unattached individuals had significantly lower debt-to-income ratios than families with children, when controlling for other factors.

Not surprisingly, age remained a significant predictor of financial insecurity as measured by the debt metrics. For instance, Canadians aged 50 to 64 had significantly lower odds of having high total debt service ratios or high debt-to-asset ratios compared to those aged 19 to 34, after accounting for other influences such as income and education. Debt-to-income ratios also fell with age.

Financial insecurity related to debt decreases with higher income

Income was a key factor in predicting high debt ratios. Households with incomes of less than \$50,000 had more than 6 times the odds of having a high debt service ratio and 1.6 times the odds of having a high debt-to-asset ratio, compared to those with incomes between \$50,000 and \$79,999. Additionally, households with incomes of less than \$50,000 had debt-to-income ratios that were higher by 162 percentage points than those who had incomes between \$50,000 and \$79,000, once other sociodemographic factors were controlled.

Living in a census metropolitan area (CMA) with high housing prices was also associated with having high debt ratios for all three measures after taking into consideration home ownership, income and other factors.

children appears to be associated with financial insecurity as measured using the three debt metrics. However, it is important to determine if family type remains a significant predictor once other factors such as age, income, home ownership and employment status have been taken into account.

For this reason, regression models were used to examine the relationship between high debt ratios (debt-to-income ratio, total debt service ratio and debt-to-asset ratio) and family type, as well as several other household and personal characteristics (Table 4).

Results show that once the effects of other variables have been taken

Table 4 Factors associated with high debt metric ratios

| | Odds of having a high total debt service ratio | | Debt to pre-tax household income ratio | | Odds of having a high debt-to-asset ratio | |
|--|--|--------|--|-------|---|-------|
| | Unadjusted | Model | Unadjusted | Model | Unadjusted | Model |
| | odds | | percentage points | | odds | |
| Age | | | | | | |
| 19 to 34† | ... | ... | ... | ... | ... | ... |
| 35 to 49 | 0.85 | 0.69* | -12 | -24 | 0.41* | 0.44* |
| 50 to 64 | 0.67* | 0.46* | -43* | -67* | 0.26* | 0.29* |
| Sex¹ | | | | | | |
| Men† | ... | ... | ... | ... | ... | ... |
| Women | 1.05 | 1.04 | -5 | -19 | 0.94 | 0.96 |
| Separated or divorced¹ | | | | | | |
| Not† | ... | ... | ... | ... | ... | ... |
| Yes | 1.26 | 1.06 | 10 | -10 | 0.65* | 1.02 |
| Family type | | | | | | |
| Couple family, no children under 25 | 0.85 | 0.90 | -34* | -22* | 1.00 | 1.09 |
| Couple family, youngest child 0 to 24† | ... | ... | ... | ... | ... | ... |
| Unattached individual | 1.08 | 0.68 | -13 | -47* | 1.61* | 0.88 |
| Single parent family, youngest child 0 to 24 | 2.69* | 1.62 | 57* | 31 | 2.04* | 1.21 |
| Other families | 1.39 | 0.79 | -9 | -31 | 1.87* | 0.87 |
| Born in Canada | | | | | | |
| Not† | ... | ... | ... | ... | ... | ... |
| Yes | 0.31* | 0.40* | -71* | -43* | 0.56* | 0.62* |
| Geographic location | | | | | | |
| Other† | ... | ... | ... | ... | ... | ... |
| CMAs with high housing prices | 2.09* | 2.01* | 65* | 61* | 1.13 | 1.18* |
| Household income | | | | | | |
| Less than \$50,000 | 4.36* | 6.75* | 109* | 162* | 2.16* | 1.58* |
| \$50,000 to \$79,999† | ... | ... | ... | ... | ... | ... |
| \$80,000 to \$119,999 | 0.50* | 0.43* | -6 | -34* | 0.54* | 0.60* |
| \$120,000 and over | 0.41* | 0.29* | -38* | -91* | 0.32* | 0.40* |
| Unemployed | | | | | | |
| Not ² † | ... | ... | ... | ... | ... | ... |
| Yes | 1.18 | 0.88 | 24 | 5 | 2.10* | 1.39* |
| Education of respondent | | | | | | |
| High school or less† | ... | ... | ... | ... | ... | ... |
| Some post-secondary (less than a university degree) | 0.88 | 1.03 | 16 | 19 | 0.73* | 0.82* |
| University degree | 0.87 | 1.20 | 22 | 32 | 0.67* | 1.00 |
| Took a course in finance or economics | | | | | | |
| Not† | ... | ... | ... | ... | ... | ... |
| Yes | 2.20* | 2.12* | 76* | 61* | 1.18 | 1.31* |
| Family member owns home | | | | | | |
| Not† | ... | ... | ... | ... | ... | ... |
| Yes | 2.63* | 6.96* | 101* | 171* | 0.18* | 0.32* |
| With each ten percent rise in the financial knowledge quiz score | | | | | | |
| | 0.89* | 1.02 | 8 | 12* | 0.84* | 0.95 |
| With each ten percent rise in self-assessed financial knowledge score | | | | | | |
| | 1.01 | 1.07* | 4 | 4* | 0.81* | 0.87* |
| Constant | | | | | | |
| | ... | 0.011* | ... | 35 | ... | 1.38 |

† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Unadjusted results are for unattached individuals and single parent families only.

2. The reference group includes those employed and those not in the labour force.

Note: For comparison, the unadjusted column indicates the effect of each characteristic on its own, without removing the effects of the other factors.

Source: Statistics Canada, Canadian Financial Capability Survey, 2009.

Canadian-born had lower odds of high debt load than immigrants

People born in Canada had 60% lower odds of having a high total debt service ratio compared to immigrants after controlling for the effects of income, education, geographic location and homeownership. Their debt-to-income ratio was 43 percentage points lower and the odds of having a high debt-to-asset ratio was 38% lower.

Unemployed individuals had similar odds of having high total debt service ratio as those employed and those not in the labour force, and had about the same amount of debt (expressed as a percentage of income). However, for the unemployed, the odds of having a high debt-to-asset ratio were 1.39 times higher than it was for those already employed and those not in the labour force.

Home ownership was associated with lower odds of having a high debt-to-asset ratio

Canadians who live in a home owned by a household member had, not surprisingly, much higher odds of having high debt payments and a high debt-to-income ratio. In contrast, they had about one third lower odds of having a high debt-to-asset ratio. This is because their mortgage debt is secured by the value of their home.

Two indicators in the model measured the financial knowledge of Canadians—self-assessed knowledge and a financial knowledge quiz score. Those who rated their self-assessed knowledge as high had greater odds of having a high debt load after controlling for other factors. However, actual financial knowledge, as assessed by the quiz, was not related to having a high debt load. Nor was

actual knowledge associated with a high debt-to-asset ratio, though higher self-assessed knowledge reduced the odds.

Higher scores on both financial knowledge measures were associated with increased debt-to-income ratios. For example, the debt-to-income ratio increased by about 50 percentage points between those scoring lowest on the financial knowledge quiz (10th percentile) and those scoring highest (90th percentile). Having more actual financial knowledge increases the use of debt—seen by increasing debt-to-income ratios—but not so far as to increase the odds of high debt payments relative to income.

Summary

Falling interest rates and growing household income since 1984 have enabled Canadians to take on more debt. Between 1984 and 2009, household debt in Canada more than doubled. As a result, the debt-to-after-tax income ratio for households in general had increased to 148% in 2009. Although the debt-to-asset ratio was relatively constant between 1990 and 2007, it rose between 2007 and 2008 by 2 percentage points to 19.6%, the highest level in 35 years.

Data from the 2009 Canadian Financial Capability Survey allowed for further examination of debt indicators by family type. Canadians who were in lone parent families had higher debt-to-income ratios and were more likely to have high debt-to-assets ratios. Of those families, 9.6% had annual debt repayments that were 40% or more of their income.

Multivariate analysis showed that once the impact of income and other socio-demographic factors were taken into consideration, family type was

still associated with high debt-to-income ratios: both couple families with no children and unattached individuals were more likely to have higher debt-to-income ratios than couples with children. However, family type was no longer associated with having a high debt-to-asset ratio or a total debt service ratio of 40% or more.

Factors associated with having a high debt load or a debt-to-asset ratio of 80% or more included being born outside of Canada, having lower levels of household income, and living in a CMA with high housing prices. Not surprisingly, people aged 50 to 64 had lower odds of having high debt ratios in all three metrics than younger Canadians.



Matt Hurst is a senior analyst with *Canadian Social Trends*, Social and Aboriginal Statistics Division.

1. Alexander, C., D. Burleton and D. Petramata. 2010. *Canadian Household Debt: A Cause For Concern*. TD Bank Financial Group. Special report by TD Economics.
2. Some research has found that household assets have become riskier, less diverse and less liquid than in the past. See Certified General Accountants Association of Canada. 2010. *Where is the Money Now: The State of the Canadian Household Debt as Conditions for Economic Recovery Emerge*.
3. Statistics Canada. No date. *Table 380-0019 Sector accounts, persons and unincorporated businesses, annual (table) CANSIM (database)*. <http://www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&searchTypeByValue=1&id=3800019> (accessed June 29, 2010).
4. Alexander et al. 2010.
5. Alexander et al. estimate that housing prices are overvalued by 10 to 15%.

How does personal bankruptcy affect retirement plans?

by Susan Crompton

Introduction

From 2008 to 2009, the rate of consumer bankruptcy in Canada increased by 30%, from 3.4 to 4.5 bankruptcies for every 1,000 adults.¹ Of course, those two years marked an economic downturn and trends in bankruptcy filings are mainly related to economic cycles, growing rapidly during recessions and declining with each economic expansion.² Nonetheless, the direction of the trend over the longer term is upward, regardless of economic conditions. Over the preceding 20 years (1987 to 2007), the rate of bankruptcy rose over 150% (Chart 1).

Declaring bankruptcy provides a person with immediate relief from a debt load they find insupportable, but the effects can last for years. And almost one in ten people who file for bankruptcy go bankrupt more than once, strongly implying that they have continuing difficulties in managing financially.^{3,4} The cumulative number of people affected is not insignificant: according to the 2007 General Social Survey, over 6% of Canadians aged 45 and over—more than 825,000—had experienced at least one bankruptcy in their lifetime. Many observers are concerned about Canadians' indebtedness and readiness for retirement, and people with a history of financial difficulty may be at even greater risk in terms of their transition

to retirement (see "What you should know about this study" for concepts, definitions and details).

This article uses data from the 2007 General Social Survey to look at non-retired people aged 45 to 64 who experienced a bankruptcy in adulthood—that is, at age 25 or older.⁵ It will investigate the extent to which they are different from other

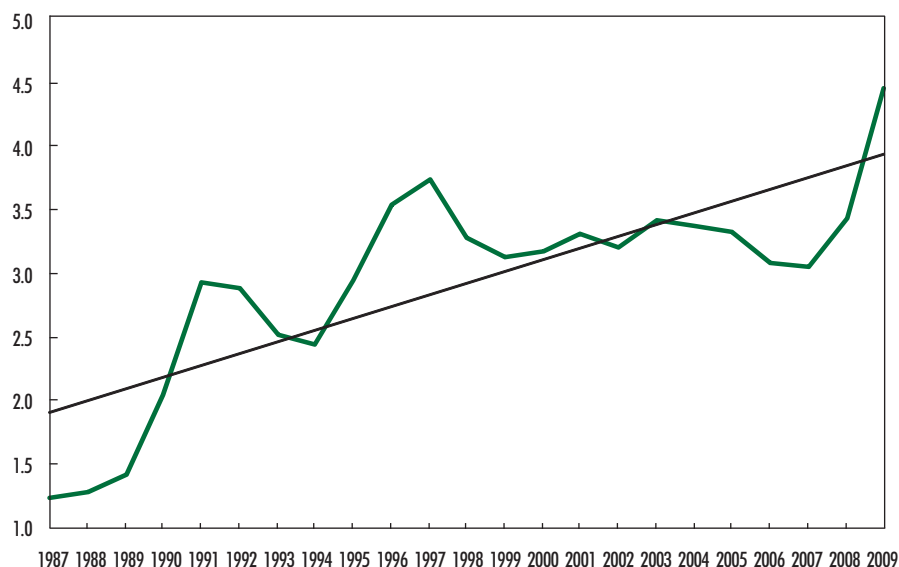
pre-retirees, and then look at how they have been preparing for their retirement.

Who files for bankruptcy and why

Carrying a high debt load is certainly a necessary condition for declaring bankruptcy, but generally it is not sufficient.^{6,7,8} The most important

Chart 1 Bankruptcy rates rise and fall with economic cycles, but the overall trend is upward

Rate per 1,000 population aged 18 and older



Source: Office of the Superintendent of Bankruptcy, Canada, 2010.

What you should know about this study

This article draws on data from the 2007 General Social Survey (GSS) on family social support and retirement. The survey collected information on topics such as family composition, social networks, care giving and care receiving, and retirement experiences and plans. Among several supplementary questions about uncommon life experiences, respondents were asked if they had ever experienced a bankruptcy. Given the wording of the GSS question, respondents may have declared bankruptcy themselves, but they could also have been closely affected by a bankruptcy in some other way, for instance, as the spouse of a person declaring bankruptcy.

The target population in this study consists of persons aged 45 to 64 who described themselves as not retired, and who reported their household income. This population comprises more than 10,500 GSS respondents who represent over 6.2 million Canadians; of these, almost 8%—or 875 respondents representing over 480,000 Canadians—had experienced bankruptcy as defined in this study.

Please note that these data were collected in 2007 and do not reflect the impact of the recent recession.

Definitions

Pre-retiree: A person aged 45 to 64 who reported that he or she had not retired. Most pre-retirees are employed, but others are unemployed, working in the household, out of the labour force due to long-term illness and so on.

Experienced bankruptcy: A pre-retiree who had experienced at least one bankruptcy since the age of 25. The respondent may have declared bankruptcy himself, or may have been directly affected by another person's bankruptcy (for example, as a spouse).

Primary bankruptcy: If respondents reported more than one bankruptcy, only the year of the bankruptcy having the greatest impact on them was recorded. In this study, the bankruptcy of greatest impact is defined as the "primary bankruptcy". Since 88% of the target population reported only one bankruptcy, their primary bankruptcy is in fact their only bankruptcy.

Median household income: Household income was collected in ranges, therefore a true median could not be calculated. Income under \$80,000 is a rounded estimate, with 54% of the general non-retired population aged 45 to 64 falling below this threshold (including those with no income). The calculation is based on 83% of respondents who reported their household income.

Government transfer income: Income from Employment Insurance, Workers Compensation, Old Age Security, Guaranteed Income Supplement, and provincial or municipal social assistance or welfare.

Other income: Income from Child Tax Credit, child support or alimony, other sources (such as scholarships, other government income, deposits and savings, etc.).

Data limitations

The GSS does not provide data on employment or income history. So although factors such as unstable employment or low-paying jobs may have contributed to a bankruptcy, they may also reflect its aftermath. For instance, a lower level of education may prevent someone from obtaining a white-collar job, but it is also possible that going bankrupt blocked certain employment opportunities. Similarly, while divorce is an acknowledged precipitator of bankruptcy, it may also follow a bankruptcy filing.

Note: The bankruptcy experiences examined in this article take place over a period of up to 40 years. Bankruptcy laws and regulations are often amended, most recently in September 2009; provinces and territories may also have different requirements, such as the type or value of assets protected from seizure. (For more information, see the Office of the Superintendent of Bankruptcy Canada at <http://www.ic.gc.ca/eic/site/bsf-osb.nsf/Intro>). Given this variability over time and jurisdiction, this article does not address issues related to the provisions of the legislation itself; for example, comparing respondents who filed under stricter versus more generous regimes.

predictor of bankruptcy is being financially overextended, and then being hit by an event that disrupts income. As such, frequent precipitators of bankruptcy are job loss, a sudden expense, and marriage breakdown.^{9,10,11,12,13}

Studies of bankruptcy filers in Canada present the same basic portrait. Compared to the general population, they are more likely to work in lower-paying less-skilled jobs, have a weaker history of steady employment, be divorced and own virtually no assets; in short, they are living paycheque to paycheque.^{14,15} But the number of Canadians filing for bankruptcy has increased almost fourfold since the mid-1980s. If it's still these same types of people who are experiencing bankruptcy, why have the rates risen so rapidly?

Researcher Saul Schwartz notes that in Canada between 1977 and 1997, there was a substantial increase in the proportion of bankruptcy filers who were unmarried women, people with dependants, adults under 30 and the self-employed. He suggests that these groups, who had not typically been borrowers in the past, began to accumulate greater levels of debt over the 1980s and 1990s, thus making them vulnerable to the main bankruptcy triggers like divorce and job loss for the first time.¹⁶

According to a number of studies, there seems to be little evidence that people file for bankruptcy to avoid meeting their obligations; most people struggle for some time to pay their debts and declare bankruptcy only as a last resort.^{17,18,19} Nor does it seem that the lessening stigma of bankruptcy encourages them to file; most simply owe more money than they can realistically hope to repay.²⁰ Data from the Office of the Superintendent of Bankruptcy Canada show that the ratio of debts to assets for insolvent consumers²¹ has remained fairly stable at about 2-to-1 since 1987, that is, they owe twice as much as they own. For example, in 2006, people who filed for bankruptcy had, on average, debts of

about \$67,000, assets of just under \$30,000, and personal income a little over \$19,000. Their major sources of debt were credit cards, bank and finance company loans, taxes owed, and mortgages.²²

Socio-economic characteristics of pre-retirees who experienced bankruptcy are different from others

According to the 2007 General Social Survey (GSS), almost 8% of the target population—over 480,000 non-retired Canadians aged 45 to 64—had experienced at least one bankruptcy when they were 25 or older. On average, they had been 40 years old at the time. The majority reported the event had happened more than 10 years before the survey, but one-fifth had experienced bankruptcy in the previous 5 years (Chart 2).²³

Pre-retirees who had experienced bankruptcy shared some basic characteristics that are significantly associated with the triggers identified earlier. They were much less likely to have a postsecondary education, with

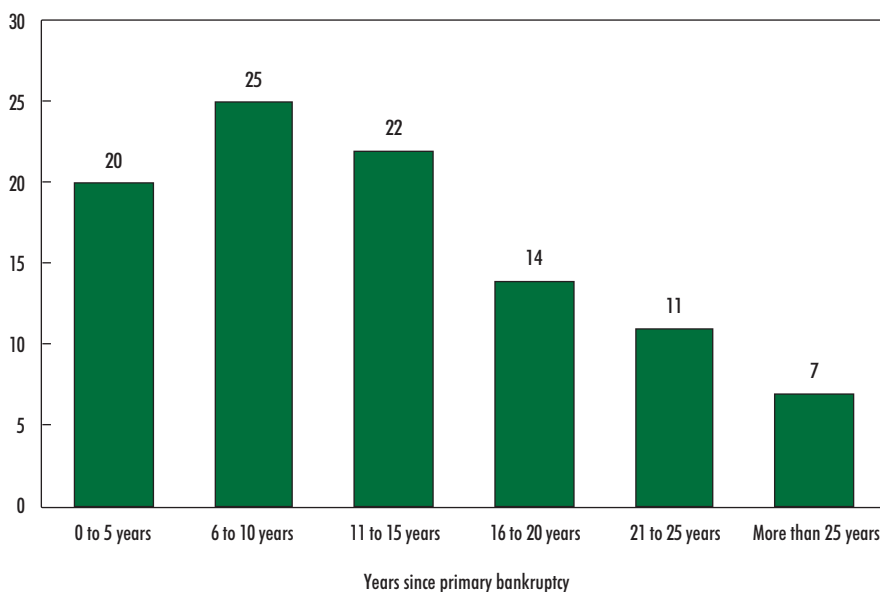
one-quarter having less than high school completion; in contrast, over one-quarter of other pre-retirees had a university degree (Table A.1).

Pre-retirees who had gone bankrupt also tended to have a history of holding numerous jobs, which is often associated with less-skilled employment: one-third had held more than five jobs during their working lives, compared to about one-fifth of other pre-retirees. They were also twice as likely to have lived through a marital break-up, and to have been divorced or separated at the time of the survey.

In 2007, pre-retirees who had experienced bankruptcy were less likely to be employed (78%), compared to other pre-retirees (84%); those with jobs were less likely to work in higher-income, white-collar positions such as management, professional or technical occupations (27% versus 42%). Over one-third (37%) had private pension plans from current or previous employment, as did 47% of other pre-retirees.

Chart 2 Over half of pre-retirees who had experienced bankruptcy had done so more than 10 years before the survey

% of adults 45 to 64 who experienced bankruptcy at age 25 or older



Source: Statistics Canada, General Social Survey, 2007.

The financial situation of many pre-retirees who have experienced bankruptcy is relatively weak. Two-thirds reported having personal incomes below the median of \$43,000 for non-retired 45- to 64-year-olds. And although they were not retired, they were twice as likely to rely on government transfer payments as their main source of income. They were also more likely to be the only person in their home with an income, which would account in part for their lower total household income: 61% lived in a household with annual income under \$50,000, compared with 37% of other pre-retirement Canadians (Table A.1).

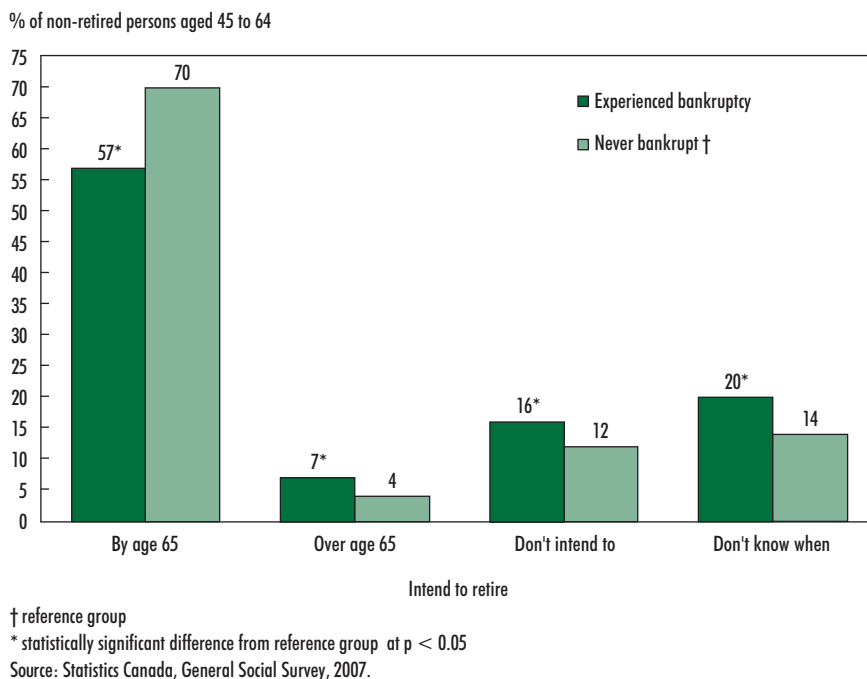
Many pre-retirees who had experienced bankruptcy also reported having poor health. It is not possible to know if their health problems might have played a role in the bankruptcy, but at the time of the survey, about one-quarter of them had an activity limitation. And they were over twice as likely as other pre-retirees to be out of the labour force due to a long-term illness (13% versus 5%).

Over half of pre-retirees who experienced bankruptcy expect to retire by 65

Most adults aged 45 to 64 are in the latter half of their working lives, and many are turning their thoughts to retirement. When asked when they planned to retire, over two-thirds (70%) of the never-bankrupt population said they would like to leave the workforce by the time they are 65 (Chart 3).

Among pre-retirees who had experienced bankruptcy, 57% expect to retire by 65. Twenty percent did not know when they would retire; another 16% said they would not stop working at all, mainly because they could not afford to retire or because they wanted to work as long as they could. Delaying their departure from the workforce could be at least partly driven by a desire to have more time to better prepare for retirement; whether it is sufficient

Chart 3 The majority of pre-retirees intended to retire by age 65, but those who had experienced bankruptcy were less likely to have plans



time will depend on each individual's circumstances, such as income, private and public pension eligibility, and so on (Chart 3).

The remainder of this article explores retirement planning that pre-retirees had undertaken in the five years prior to the survey. As we have seen, those who experienced bankruptcy have a different profile from other pre-retirees, so it is more appropriate to compare their preparations to those of never-bankrupts who are demographically and economically similar; in this case, the most appropriate match is with the 54% of never-bankrupt pre-retirees having median or below household income of less than \$80,000.²⁴

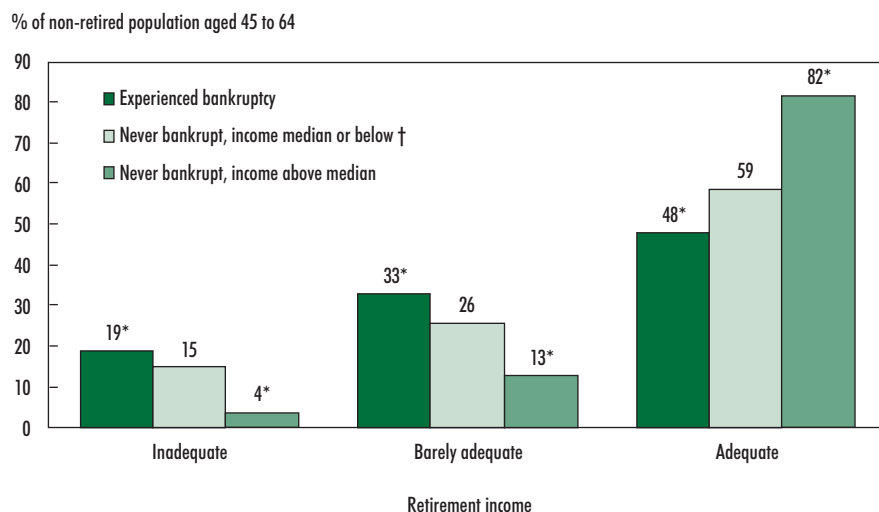
Pre-retirees who experienced bankruptcy are worried about the future

Fewer than half (48%) of pre-retirees who had lived through a bankruptcy believed their household income

would be enough to maintain their standard of living in retirement. Never-bankrupt pre-retirees with median or below income were more likely to report that they would have an adequate retirement income (Chart 4).²⁵

As discussed earlier, divorce plays a significant contributory role in bankruptcy, and a recent study found that divorced bankrupts generally have more difficulty recovering economically than married bankrupts, even if they both had a very similar economic profile prior to the bankruptcy.²⁶ So it is not unexpected that, according to the GSS, only one-third (32%) of divorced pre-retirees who had experienced bankruptcy said they expected they would be able to maintain their standard of living in retirement. In contrast, a little over half (53%) of married pre-retirees who had experienced bankruptcy were optimistic about the adequacy of their retirement income.

Chart 4 Fewer than half of pre-retirees who had experienced bankruptcy thought their retirement income would be adequate to maintain their standard of living



† reference group

* statistically significant difference from reference group at $p < 0.05$

Note: Asked only of respondents who specified the age when they plan to retire, or who had not yet thought about or planned for retirement; coverage is 61% of those who experienced bankruptcy and 68% of never-bankrupts.

Source: Statistics Canada, General Social Survey, 2007.

Those who experienced bankruptcy lagged in acquiring basic assets for retirement

The majority of most people's savings is represented by the investment they have made in their house.²⁷ And owning their home makes pre-retirees more confident about their financial future: almost three-quarters of homeowners said they were not concerned about the adequacy of their retirement income, and the proportion was even higher among those who were mortgage-free. Far fewer pre-retirees who rent (50%) believed their household income would be sufficient to maintain themselves in retirement.²⁸

Nonetheless, about half of pre-retirees who had experienced bankruptcy owned their home; of these, over three-quarters were still paying off their mortgage. In comparison, 77% of never-bankrupt pre-retirees with median or below household income owned their home, and almost half of them no longer had a mortgage (Table 1).

Heading toward retirement with a private pension can also relieve some of a person's financial worries. About three-quarters of pre-retirees with a private pension plan believed their income would be adequate after they left the workforce, compared with less than two-thirds of those with no private pension plan. However, 63% of pre-retirees who had experienced bankruptcy and 64% of never-bankrupts with median or below incomes did not have a private pension plan from their current or previous employment.

Another instrument people commonly use as part of their retirement planning is an RRSP. In the five years preceding the survey, 38% of pre-retirees who had experienced bankruptcy had contributed to an RRSP, as had 52% of never-bankrupt pre-retirees with median or below incomes. Most contributors in both groups estimated their RRSPs to be worth less than \$50,000.

These basic assets—a home, a private pension, an RRSP—generally

comprise the investment core around which many Canadians plan their retirement. One-quarter of pre-retirees who had gone through a bankruptcy did not have any of them. On the other hand, 41% had two or three of these elements, compared to 57% of never-bankrupts with median or below incomes (Table 1).

Other financial strategies of pre-retirees who have experienced bankruptcy include paying down debts

People can prepare for retirement using other investment strategies. About 20% of pre-retirees who had experienced bankruptcy had been building up savings, and 19% had made other kinds of investments in instruments such as stocks, bonds or mutual funds. Their never-bankrupt counterparts with median or below incomes were more likely to have been putting money aside in savings (32%) and investments (27%) (Table 1).

Preparing for retirement does not exclusively mean building savings; many people concentrate on paying off loans so they can leave the workforce debt-free. In the five years preceding the survey, one-quarter of pre-retirees who had experienced bankruptcy had been paying off a mortgage (or had not assumed a new one) and more than half had been paying down other types of debt such as loans and lines of credit.

In sum, 41% of pre-retirees who had experienced bankruptcy were either paying down debts or building savings, and 29% were doing both. Taken together, 70% of pre-retirees who had experienced bankruptcy were using these types of strategies to improve their financial position. This was almost as high a percentage as that for never-bankrupts with median or below household incomes (77%).

A logistic regression model was developed to learn which financial strategies were most likely to help pre-retirees feel confident that their retirement income would be high enough to maintain their household's

Table 1 Selected financial characteristics of non-retired adults aged 45 to 64, by bankruptcy experience, 2007

| | Experienced bankruptcy ¹ | Never bankrupt | |
|--|--|---|------------------------|
| | | Income median or below† ² | Above median income |
| percentage | | | |
| Basic assets for retirement | | | |
| No home, no private pension plan, no RRSP ³ | 25* | 11 | F |
| Home or private pension plan or RRSP | 35 | 32 | 9* |
| Two of home, private pension plan or RRSP | 28* | 38 | 44* |
| All of home, private pension plan and RRSP | 13* | 19 | 46* |
| Homeownership status | | | |
| Tenant | 48* | 23 | 4* |
| Homeowner with mortgage | 41 | 42 | 55* |
| Homeowner without mortgage | 11* | 35 | 41* |
| Pension plan from present or previous employment (excluding Canada and Quebec Pension Plans) | | | |
| No private pension plan | 63 | 64 | 40* |
| 0 to 10 years service | 16* | 12 | 15* |
| More than 10 years service | 21 | 24 | 45* |
| Value of RRSP ³ at time of survey | | | |
| No contributions in last 5 years | 62* | 48 | 18* |
| Less than \$50,000 | 29 | 34 | 27* |
| \$50,000 to \$100,000 | F | 11 | 22* |
| More than \$100,000 | F | 7 | 34* |
| Other financial strategies for retirement | | | |
| None | 30* | 26 | 10* |
| Investments or paying down debt | 41 | 37 | 32* |
| Both | 29* | 37 | 58* |
| Over the last 5 years, the respondent has made investments by... | | | |
| building up savings (excludes RRSP ³) | 20* | 32 | 49* |
| making other investments, (e.g. stocks, bonds, mutual funds, etc.) | 19* | 27 | 54* |
| buying or selling real estate (e.g. buying new home or downsizing) | 52 | 50 | 63* |
| Over the last 5 years, the respondent has paid off debt by... | | | |
| paying off old mortgage or avoiding acquiring new mortgage | 24* | 32 | 47* |
| paying off other debt or avoiding acquiring new debt, e.g. loan, line of credit | 52 | 50 | 63* |

† reference group

* statistically significant difference from reference group at $p < 0.05$

1. Experienced at least one bankruptcy since the age of 25.

2. Fifty-four percent of target population reported household income under \$80,000.

3. Registered retirement savings plan.

Source: Statistics Canada, General Social Survey, 2007.

standard of living.²⁹ The results for those who had experienced bankruptcy showed that having a household income of \$100,000 or more, a private pension plan and savings other than RRSPs were significant. In contrast, for never-bankrupt pre-retirees with median or below income, the significant factors were having a household income over \$50,000, homeownership, a private pension, savings and investments.

Time allows some catching up

We would expect that the more distant the bankruptcy, the more ground a pre-retiree has been able to recover. Has this happened?

Compared to pre-retirees who had more recently experienced a bankruptcy, those who had lived through one more than 10 years before the survey were more likely to live in a household with above-median income (27% versus 19%)

and to have at least two of the three basic assets of retirement (home, private pension plan, RRSP), at 32% versus 22%. In terms of other retirement preparations, though, they were no further ahead. About half felt confident that their retirement income would be adequate for their standard of living, as did a little less than half of pre-retirees who had experienced bankruptcy sometime in the last 10 years.

Summary

Given the rising numbers of consumer bankruptcies in recent decades, the likelihood that a small but significant proportion of Canadians are heading toward retirement with a period of severe financial difficulty behind them has grown. According to the 2007 General Social Survey, almost 8% of non-retired Canadians aged 45 to 64, or more than 480,000, had experienced at least one bankruptcy during their adulthood.

Pre-retirees who have experienced bankruptcy have characteristics in addition to their financial history which suggest they will continue to be at a disadvantage compared with other pre-retirees. They have lower levels of education, a less stable job history and a tendency to work in less-skilled occupations; they are also more likely to report a history of marital breakdown, as well as having health problems and activity limitations.

A slight majority of pre-retirees who had experienced bankruptcy wish to retire by age 65, but less than half believed that their retirement income would be sufficient to maintain their standard of living. Compared with a demographically and economically similar reference group of pre-retirees who had never experienced bankruptcy, pre-retirees who had experienced bankruptcy were less advanced in their preparations for retirement. Nonetheless, three-quarters of them had at least some of the basic assets for retirement, as measured by home ownership, private pension plan or RRSP contributions, and almost as many were employing other financial strategies such as building savings and investments and paying down debts.

The logo features the letters "GST" in a bold, white, sans-serif font, centered within a dark green oval. The oval is part of a larger, stylized green graphic that resembles a swoosh or a leaf, extending horizontally across the page.

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22. Office of the Superintendent of Bankruptcy Canada. 2007.
23. The age of people filing for bankruptcy is generally increasing over time. For example, the average age of a filer was 43 in 2006, compared with about 38 in 1995. Office of the Superintendent of Bankruptcy Canada. 2007.
24. Never-bankrupt pre-retirees with median or below household incomes more closely resembled pre-retirees who had experienced bankruptcy than never-bankrupts with incomes above the median. In particular, their level of education, marital status, current occupation, personal income and number of income earners in the household were very similar. (GSS data not shown.) This makes them a more homogeneous comparison group than the general population of never-bankrupt pre-retirees.
25. Only respondents who specified the age when they plan to retire, or hadn't yet thought about or planned for retirement, were asked if they thought their post-retirement income would be adequate to maintain their standard of living. Response rates for this question were 61% for bankrupts and 68% for never-bankrupts in the target population.
26. Caputo. 2008.

27. It should be noted that, given certain appropriate circumstances, taking on a mortgage can have the opposite effect by increasing the risk of insolvency.

28. According to the GSS, 91% of married pre-retirees were homeowners, but 40% of unmarried pre-retirees were not. Given the importance of home ownership to most people's financial planning, this may explain the much higher level of concern about income adequacy among the unmarried.

29. Independent variables in the model were years since primary bankruptcy; household income; basic assets for retirement (that is, homeownership, RRSP contributions, private pension); and other financial strategies (that is, savings other than RRSPs, investments, real estate, paying off mortgage, paying off other debts).

Table A.1 Selected characteristics of non-retired adults aged 45 to 64, by bankruptcy experience, 2007

| | Experienced bankruptcy ¹ | Never bankrupt [†] |
|--|--|--------------------------------|
| | percentage | |
| Demographic and socio-economic characteristics | | |
| Educational attainment | | |
| University | 12* | 29 |
| College | 29 | 29 |
| Some postsecondary | 14* | 11 |
| High school | 19 | 17 |
| Less than high school | 25* | 14 |
| Current legal marital status | | |
| Married | 51* | 68 |
| Common-law | 15* | 10 |
| Widowed | F | 2 |
| Divorced, separated | 24* | 12 |
| Single | 8 | 8 |
| Experienced marital dissolution | | |
| Never | 44* | 71 |
| Divorced, separated | 53* | 27 |
| Widowed | F | 3 |
| Long-term activity limitation | | |
| Yes | 25* | 14 |
| Income and employment characteristics | | |
| Number of jobs held in working life | | |
| None | F | 3 |
| 1 to 5 jobs | 65* | 75 |
| More than 5 jobs | 33* | 22 |
| Main activity in previous 12 months | | |
| Employed | 78* | 84 |
| Unemployed (looking for work) | F | 2 |
| In the household | F | 7 |
| Long-term illness | 13* | 5 |
| Other | F | 2 |
| Current occupation (employed only) | | |
| Management; professional; technologists, technicians and technical | 27* | 42 |
| Clerical and sales and services | 44* | 35 |
| Trades, transport and equipment and related; primary industries; processing, manufacturing and utilities | 28* | 23 |
| Pension plan from current or previous employment | | |
| Yes | 37* | 47 |
| Median personal income | | |
| Below median (\$0 to \$42,999) | 67* | 48 |
| Median or above (\$43,000 or more) | 33* | 52 |

**Table A.1 Selected characteristics of non-retired adults aged 45 to 64, by bankruptcy experience, 2007
(continued)**

| | Experienced bankruptcy ¹ | Never bankrupt† |
|---|--|--------------------|
| | percentage | |
| Main source of personal income | | |
| No personal income | F | 3 |
| Employment | 77* | 85 |
| Private pension plan and investments | 7* | 5 |
| Transfer payments | 8* | 4 |
| Other (includes child support, scholarships, etc) | 5 ^E | 3 |
| Household income | | |
| Under \$50,000 | 61* | 37 |
| \$50,000 to \$99,999 | 26 | 29 |
| \$100,000 or more | 13* | 34 |
| Number of other persons in the household with income | | |
| Nobody else | 29* | 19 |
| One or more other people | 71* | 81 |

† reference group

* statistically significant difference from reference group at $p < 0.05$

1. Experienced at least one bankruptcy since the age of 25.

Source: Statistics Canada, General Social Survey, 2007.

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