Component of Statistics Canada Catalogue no. 11-008-X
Canadian Social Trends

Article

Debt and family type in Canada

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April 21, 2011

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Standard symbols for Statistics Canada

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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

Debt and family type in Canada

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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.

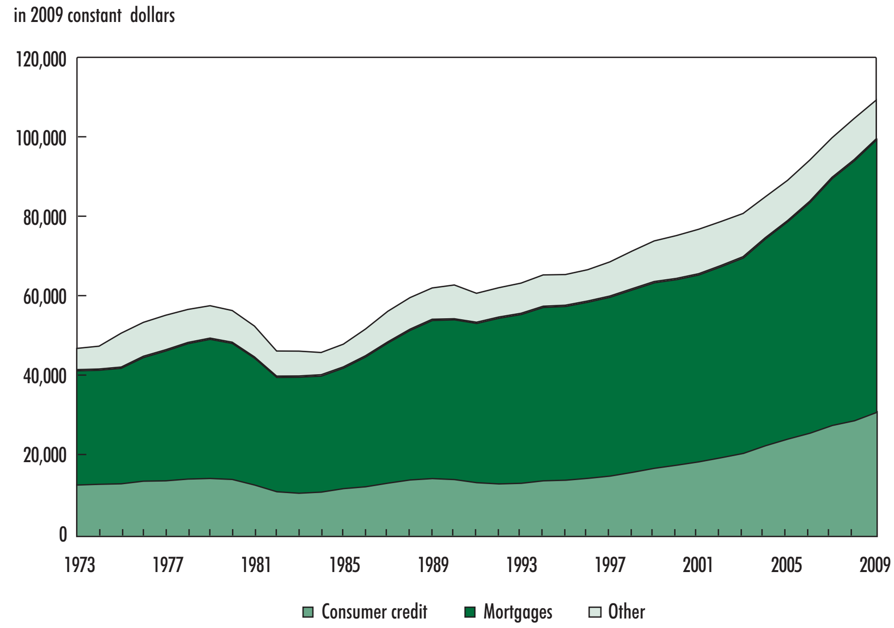
Census metropolitan area (CMA) with high housing costs: This information is based on trends in the median prices of houses sold in large CMAs from 1997 to 2008, from the Survey of Household Spending. High priced CMAs are Halifax, Ottawa, Toronto, Saskatoon, Calgary, Edmonton, Vancouver, and Victoria.

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.

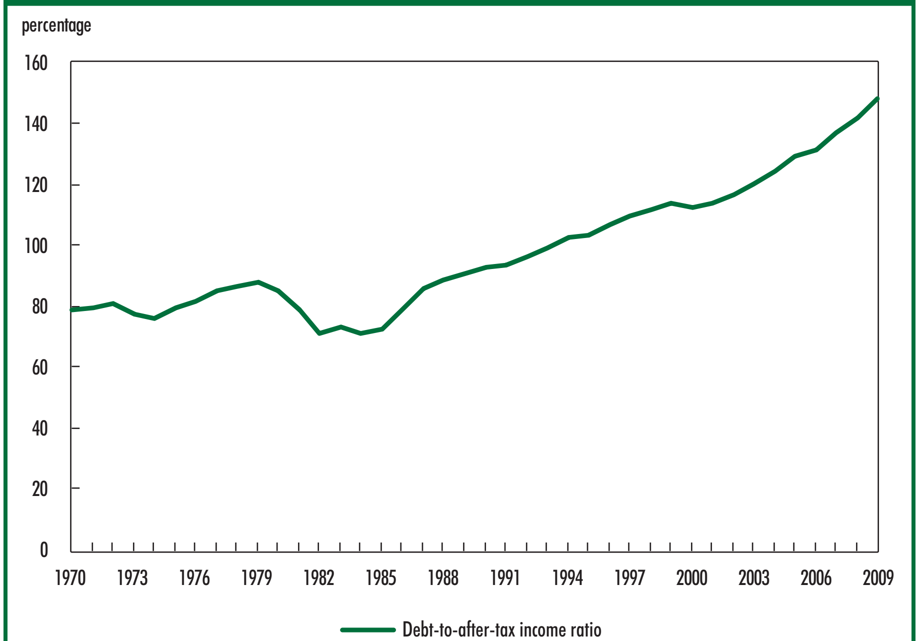
1. Dey, S., Djoudad, R. and Terajima, Y. 2008. A Tool for Assessing Financial Vulnerabilities in the Banking Sector. *Bank of Canada Review.*
2. For a detailed discussion of household debt-to-income ratios and potential effects on the banking system, see Bank of Canada. 2009. *Financial System Review*. 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



Source: Statistics Canada, CANSIM table 378-0051.

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



Source: Statistics Canada, CANSIM tables 380-0019 and 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]

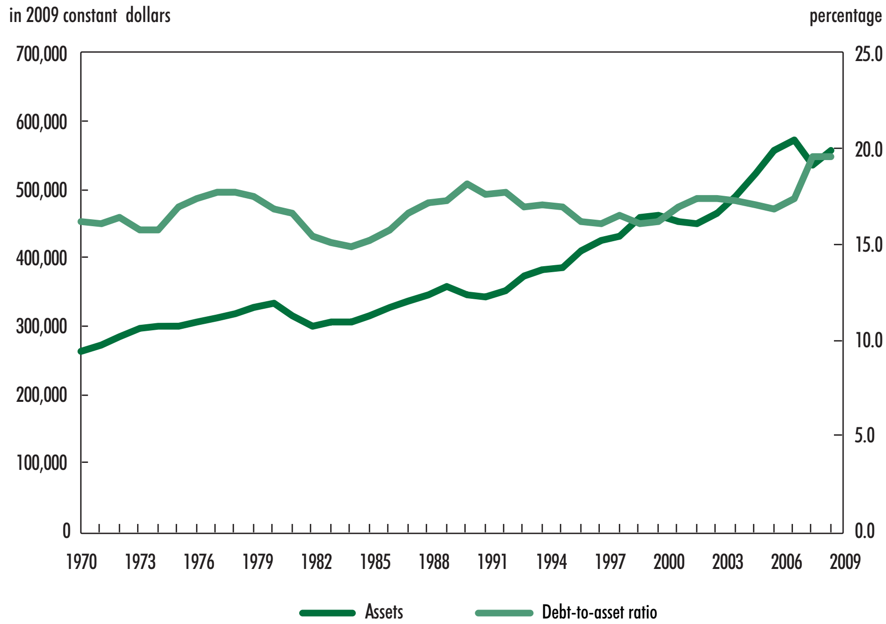
Stable debt-to-asset ratio until 2008

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 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

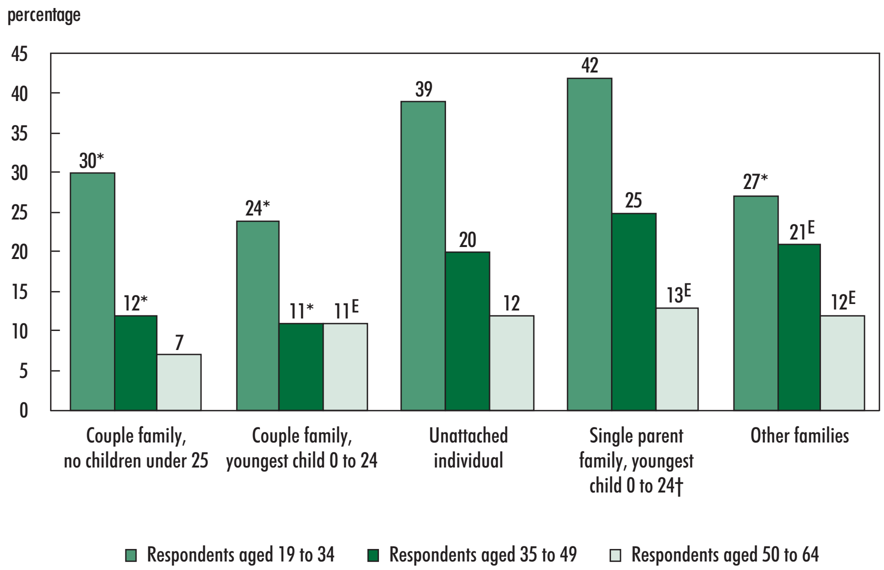
Many factors other than family type may be associated with high debt ratios (debt-to-income ratio, total debt service ratio and debt-to-asset ratio). For example, taken alone, being in a lone-parent family compared to a couple family with

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.

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 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.

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*
Sex[1]						
Men†	...	...	...	...	...	...
Women	1.05	1.04	-5	-19	0.94	0.96
Separated or divorced[1]						
No†	...	...	...	...	...	...
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						
No†	...	...	...	...	...	...
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						
No†[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						
No†	...	...	...	...	...	...
Yes	2.20*	2.12*	76*	61*	1.18	1.31*
Family member owns home						
No†	...	...	...	...	...	...
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%.