BANK OF CANADA
BANQUE DU CANADA

Discussion Paper/Document d'analyse
2009-7

Household Debt, Assets, and Income in Canada: A Microdata Study

by Césaire A. Meh, Yaz Terajima, David Xiao Chen, and Tom Carter

www.bank-banque-canada.ca

Bank of Canada Discussion Paper 2009-7

June 2009

Household Debt, Assets, and Income in Canada: A Microdata Study

by

Césaire A. Meh,[1] Yaz Terajima,[2] David Xiao Chen,[2] and Tom Carter[1]

[1]Canadian Economic Analysis Department
[2]Financial Stability Department
Bank of Canada
Ottawa, Ontario, Canada K1A 0G9
cmeh@bankofcanada.ca
yterajima@bankofcanada.ca
tcarter@bankofcanada.ca

ISSN 1914-0568

Acknowledgements

The authors thank Ian Christensen, Danny Leung, and Shubhasis Dey for their input.

Abstract

The authors use microdata from the 1999 and 2005 Surveys of Financial Security to identify changes in household debt, and discuss their potential implications for monetary policy and financial stability. They document an increase in the debt-income ratio, which rose from 0.75 to 0.95, on average. Rising debt ratios were driven by a 50 per cent increase in mortgage balances among the middle-aged, a doubling of credit card debt among households over 55, and a fourfold increase in home equity lines of credit among small business owners and households without high school diplomas.

The authors identify rising debt-income ratios among households in the bottom income quintile as the most important development of the years 1999 through 2005, signalling greater sensitivity to rising interest rates or negative income shocks – particularly among income-poor homeowners, whose 2005 mortgage obligations totalled 72 per cent of income. Meanwhile, an increase in the portfolio share for which real estate accounts, particularly among the middle-aged, suggests that household balance sheets have become more sensitive to changes in the housing market. In addition to poor households, the authors identify former bankrupts, younger households, and the self-employed as more indebted and hence at greater risk.

JEL classification: E21, E24
Bank classification: Credit and credit aggregates; Sectoral balance sheet; Productivity; Financial stability

Résumé

Utilisant des microdonnées qui proviennent de l'Enquête sur la sécurité financière menée en 1999 et en 2005, les auteurs examinent l'évolution de la dette des ménages et ses implications éventuelles pour la politique monétaire et la stabilité financière. Ils étudient l'accroissement du ratio de la dette au revenu, qui est passé de 0,75 à 0,95 en moyenne. La hausse des ratios d'endettement s'explique par l'augmentation de 50 % des soldes hypothécaires dans la population d'âge moyen, le doublement des prêts sur cartes de crédit chez les ménages de plus de 55 ans et le fait que les lignes de crédit garanties par l'avoir propre foncier ont quadruplé pour les propriétaires de petites entreprises et les ménages sans diplôme d'études secondaires.

Les auteurs estiment que le changement le plus marquant de la période 1999-2005 est la croissance des ratios de la dette au revenu parmi les ménages du quintile de revenu le plus bas, ce qui est révélateur d'une sensibilité accrue à la hausse des taux d'intérêt ou aux chocs négatifs pour le revenu – en particulier chez les propriétaires à faible revenu qui, en 2005, consacraient 72 % de celui-ci à leurs obligations hypothécaires totales. Parallèlement, l'augmentation de la

part des actifs immobiliers dans les portefeuilles, principalement dans les groupes d'âge moyen, semble indiquer que les bilans des ménages sont devenus plus sensibles à l'évolution du marché du logement. Les auteurs constatent que, outre les ménages pauvres, les ménages qui ont déjà fait faillite, les jeunes ménages et les travailleurs autonomes sont davantage endettés et, par conséquent, plus à risque.

Classification JEL : E21, E24
Classification de la Banque : Crédit et agrégats du crédit; Bilan sectoriel; Productivité; Stabilité financière

1 Introduction

Recent experiences in the United States, where defaults on subprime mortgages triggered turmoil throughout financial markets, underline the potential for household-level stresses to be passed on to the financial system. Negative effects on output, wealth, and consumer and creditor confidence can follow. In confronting these possibilities, policy-makers must understand the state of household finances and anticipate how their actions will impact household balance sheets.

This paper documents household balance sheets and income using household-level data from the two most recent waves of the Survey of Financial Security, conducted in 1999 and 2005, and thus sketches the average household's financial situation prior to the subprime-mortgage meltdown. We consider various household groups that differ in terms of age, income, wealth, education, marital status, employment, home ownership, and personal bankruptcy history. We report how debt holdings vary across these groups, particularly in comparison with income and assets. We also consider the composition of their assets, liabilities, and income. Changes over the 1999–2005 period are identified. Mortgage payment ratios are also examined, as are some alternative indicators of financial stress. We discuss the potential implications of changes in household finances for monetary policy and financial stability.

From 1999 through 2005, the average debt-income ratio rose from 0.754 to 0.947, with increases evident across all classes and age groups and strongest among middle-aged households and the income-poor. In contrast, most households saw their debt-asset ratios rise modestly as strong house prices over the 1999–2005 period fuelled growth in asset holdings, though households under 40 years of age reported a large increase in this ratio, along with those in the bottom 20 per cent of the wealth distribution. Rising debt ratios were driven by 49.8 per cent growth in mortgage balances in the 31–45 age range, along with a doubling in credit card debt among those over 55, and a fourfold increase in home equity lines of credit among the self-employed and households without high school diplomas.

We document above-average debt ratios among former bankrupts and households in the first wealth quintile, along with small business owners, whose assets are highly concentrated in risky business equity, and younger households, among whom "behind payment" problems and instances of negative net worth are much more common. For example, 23.0 per cent of 2005 households under 30 years of age reported being at least two months behind on their bills, 1.9 times the average. We also document a particularly high mortgage service ratio among homeowners in the first income quintile, where short-term mortgage obligations exceeded 70 per cent of income in both 1999 and 2005.

In terms of policy implications, we highlight three developments over the 1999–2005 period: (i) dramatic increases in debt relative to income in the bottom income quintile, where debts rose from 11 to 13 months' worth of income, suggest that these households had become more sensitive to rising interest rates and negative income shocks; (ii) substantial growth in the average debt-asset ratio among households in the bottom wealth quintile, which rose from 1.08 to 1.17, suggests some deterioration in collateral coverage and indicates that some poor debtors who fail to meet their obligations out of income may have trouble making up the difference through asset liquidation; and (iii) increases in the average portfolio share in real estate, by far the most important asset on the average balance sheet, rendered household balance sheets more sensitive to the state of housing markets, particulary in the 36–45 age range, where real estate holdings grew 75.0 per cent.

Similar studies have been done in the United States (Edelberg and Fisher 1997), the United Kingdom (May, Tudela, and Young 2004), Australia (Reserve Bank of Australia 2003), and other developed countries. Edelberg and Fisher (1997) find evidence of an increase in secured debt holdings over the 1989–95 period, as well as a shift from instalment debt to credit card debt that left overall unsecured liabilities relatively unchanged. May, Tudela, and Young (2004) document a rapid accumulation of debt among U.K. households and consider consequences for monetary policy and financial stability. A recent increase in household debt is also evident in Australia (Reserve Bank of Australia 2003). In Canada, Faruqui (2008) uses the Canadian Financial Monitor, a mail-in survey conducted annually by Ipsos Reid, to study the distribution of the debt service ratio across households. He documents increases in this ratio and the ratio of debt to disposable income from 1999 through 2007. Consistent with our own results concerning the debt burden among low-income households, he also finds that reports of "high-risk" debt service ratios exceeding 40 per cent are most common among families earning $35,000 or less. In related work, Meh and Terajima (2008) use data from the Survey of Financial Security to assess heterogeneity in Canadian household balance sheets, but focus on implications for the redistribution of wealth during inflation episodes, which depends on how nominal assets and liabilities vary between households.

The remainder of this paper is organized as follows. Section 2 describes our data and introduces various measures of the household debt burden. We consider two such measures in section 3, which describes how the debt-asset and debt-income ratios evolved from 1999 through 2005. Section 3 also uses these ratios to identify household groups facing particularly heavy burdens based on their age, income, and several other characteristics. Though the analysis highlights broad trends, we provide a more detailed review of household debts in section 4. Sections 5 and 6 provide similar information on assets and income. Section 7 discusses potential policy implications, and section 8 concludes.

2 Data

2.1 Data sources

Our primary data sources are the most recent waves of the Statistics Canada Survey of Financial Security (SFS), conducted in 1999 and 2005.[1] The SFS provides a comprehensive picture of the balance sheets, income, and pensions of Canadian households, together with various household characteristics, such as age, employment status, and marital status.[2] (Characteristics are defined precisely in section A of the appendix.) Information was collected on all major debts, financial and non-financial assets, and income from employment, small businesses, retirement assets, and other sources.

The SFS targets about 98 per cent of the population in ten provinces. The 1999 and 2005 surveys sampled about 16,000 and 5,000 households, respectively. The SFS uses a two-part sampling strategy designed to ensure that data are collected on a sufficiently large and unbiased sample of wealthier households, since these families hold disproportionate shares of the household sector's total income and net worth. The main sample was drawn from an area frame. This involved a stratified, multi-stage sample selected from the Labour Force Survey sampling frame. The second portion of the sample was drawn from geographic areas in which a large percentage of households qualified as "high-income." The second portion was included to improve the representation of high-earning families. To enhance reliability, in producing the SFS, Statistics Canada has identified and adjusted extreme values, imputed missing responses, and adjusted weights to ensure that the number of one- and two-person households agreed with known totals by province. They have also sought to ensure that the survey distribution of income matched approximately the distributions reported in the Survey of Labour and Income Dynamics and implied by T4 tax returns.[3]

2.2 Measures of the household debt burden

In this paper, we focus on debts relative to income and assets; these measures provide a good sense of the burden that debt represents for households. In this section we introduce some ratios around which our analysis will be framed.

[1] We intend to update our findings as new surveys are released.

[2] A similar survey in United States is the Survey of Consumer Finances (SCF), conducted by the National Opinion Research Center at the University of Chicago and sponsored by the Federal Reserve with the co-operation of the Department of the Treasury. The SCF is the most comprehensive source of data on the income and wealth of U.S. households.

[3] For details, see Statistics Canada (2003).

Within a given household group, the **debt-income ratio** is calculated by dividing the group's average total debt holdings by their average total income. Despite concerns regarding the interpretation of ratios that compare stocks to flows, this ratio is used as an indicator of short-term vulnerability in lieu of the debt service ratios, since the SFS does not offer enough information to calculate the 1999 and 2005 service ratios directly.[4] See Faruqui (2008) for a review of Canadian household service ratios as calculated from an alternative data source. Households with higher debt-income ratios are at greater risk of falling behind on payments, especially if their assets are illiquid and/or if prices are volatile.

The **debt-asset ratio** gives debt as a proportion of asset holdings. We use this ratio to assess long-term vulnerability. When debts mature and households have trouble meeting their obligations out of income, higher debt-asset ratios have three implications: (i) a greater portion of the household's assets must be liquidated to pay off debts; (ii) relatively less collateral is available to compensate creditors in the event of default; and (iii) refinancing may be more difficult for want of collateral.

We will at times supplement these ratios with the **mortgage service ratio**, which measures the fraction of income that must be devoted to annual interest and principal payments on mortgages. We are able to calculate this ratio using mortgage payment data from the SFS.[5] This ratio is an indicator of short-term vulnerabilities associated with mortgage debt. For other SFS definitions, refer to the appendix.

3 Household Debt Ratios

In section 2, we offered the debt-income and debt-asset ratios as measures of the debt burden facing households. We next consider these ratios in detail, beginning with an analysis of how they evolved from 1999 through 2005.

3.1 Recent changes in household debt ratios

The most important development of the 1999–2005 period was a dramatic increase in debts relative to income. The average **debt-income ratio** rose from 0.754 to 0.947, with growth evident across

[4] To estimate service ratios, we would require detailed information on interest rates and the schedules according to which principal will be repaid. Shifts in the interest rate or repayment schedule could cause the debt service ratio to change even when the debt-income ratio is constant.

[5] When calculating the mortgage service ratio, we include *both* payments scheduled as part of the amortization scheme *and* prepayments. The results do not vary noticeably from those obtained when prepayments are ignored.

all income quintiles and most age groups. Charts 1 and 2, which, respectively, give debt ratios for various age and income groups, show that growth in the debt-income ratio was most pronounced in the 31–45 age bracket and in the second and third income quintiles. Table 1, which gives ratios for household groups varying in terms of employment, education, and other important variables, also shows marked growth among former bankrupts and the self-employed. Both groups faced some of the economy's highest debt-income ratios in 1999, and in 2005 they carried average debts exceeding one year's worth of income.

In contrast to the debt-income ratio, the **debt-asset ratio** saw relatively moderate growth from 1999 through 2005. On average, it rose from 0.128 to 0.134. As Table 1 shows, increases were most pronounced among the college educated, whose average ratio gained 22.9 points, along with single households and renters. Like the debt-income ratio, growth in the debt-asset ratio was strongest among households under 40 (Chart 1). However, while debts grew most substantially relative to income near the middle of the income distribution, the debt-asset ratio saw its largest increase in the bottom wealth quintile, where it rose from 1.08 to 1.17, as shown in Chart 3, which gives the ratio for household groups varying in terms of net worth.

Our findings with regard to the debt-income and debt-asset ratios from 1999 through 2005 stem from the fact that household debts saw stronger growth than asset holdings (32.7 per cent and 26.5 per cent), while income proved relatively stagnant (5.6 per cent).[6] We next briefly consider trends in debt, assets, and income, leaving more detailed analysis for sections 4, 5, and 6.

Table 2 divides households into ten age groups and their debts across five categories: mortgages, home equity lines of credit (HELOCs), vehicle loans, credit cards, and other. Definitions of each category are provided in section B of the appendix. Table 3 provides comparable data for household groups defined in terms of employment, education, and other variables. HELOCs emerged as the period's most notable high-growth category, with balances tripling, on average, and rising dramatically in all age groups over 30 and across all household types, except for renters and the college educated. There was also strong growth in the average household's real credit card balance, driven largely by increases among households over 55, who saw their debts in this category double. Increases in HELOC borrowing were most pronounced among former bankrupts, the self-employed, and households without high school diplomas, who saw their balances quadruple, while real growth in credit card debt was strongest among homeowners (61.9 per cent versus 10.9 per cent among renters), small business owners (55.9 per cent versus 39.3 per cent among employees), and high school graduates (43.1 per cent for versus 16.1 per cent among those without diplomas).

[6] All figures have been adjusted for inflation. We quote balances in 1999 dollars. When needed, we deflate using the all-item CPI based on Statistics Canada's 2001 basket.

Table 4 describes the average portfolio held in different age brackets. Table 5 provides similar information for groups differing in terms of employment, education, and other variables. Both tables divide assets across five categories: financial assets, retirement assets, real estate, equity in household businesses, and other. See section B of the appendix for details. Real estate is the only category that experienced growth outpacing that in debt over the 1999–2005 period (55.0 per cent versus 32.7 per cent). Table 4 shows that growth in asset holdings was particularly strong in the 36–45 age range, averaging 75.0 per cent, while Table 5 identifies former bankrupts, non-working households, and married couples as other high-growth groups.

Tables 6 and 7 show the composition of income for various household groups. Income is divided across five categories based on its source: labour (i.e., wages and salaries), capital, business, transfer, and other. See section B of the appendix for details. Weakness in income stems largely from stagnancy in the labour category: average wages and salaries rose only 2.5 per cent, with losses reported for some groups, including households without high school educations, who experienced a 22.1 per cent decline, along with renters (12.9 per cent) and non-working households (16.8 per cent).

3.2 Distribution of the household debt burden

Having considered how the debt ratios have changed from 1999 through 2005, we next use them to compare burdens across household groups varying in terms of age, income, wealth, and several other variables. We supplement our findings with data on alternative indicators of financial stress at the household level.

Age. Chart 1 finds that households in the 26–40 age range faced the economy's highest debt ratios in both 1999 and 2005, though differences with respect to older households were much larger in 2005. In fact, in 2005, average debt exceeded more than 16 months' worth of income in the 31–40 age range, compared with an average of 11 months across all age groups.

Net worth. Chart 3 shows that wealth-poor households faced much higher debt-asset ratios in both years. In 1999 and 2005, average debts exceeded assets in the bottom wealth quintile, while the debt-asset ratio kept below 0.46 across the rest of the net worth distribution.

Income. We note a consistently negative relationship between income and the debt-income ratio, as Chart 2 shows, though it proves weaker than the relationship between wealth and the debt-asset

ratio. The debt-income ratio for the bottom 80 per cent of the income distribution was near 1.0 in 2005, compared with 0.83 among the income-rich. The results are similar for 1999. These findings identify income-poor households as facing greater burdens in both 1999 and 2005.

Education. The debt ratios reported in Table 1 for household groups varying in terms of education mark the only case in which changes over the 1999–2005 period precipitated a qualitative shift in our assessment of the economy's more heavily burdened demographics. In 1999, households with high school diplomas faced higher debt ratios than both their college educated counterparts and those without high school educations. The intervening years saw college educated households lever up considerably. By 2005, debt ratios were slightly higher for this group. For example, in 2005, they reported an average debt-income ratio of 1.03, compared with 0.96 and 0.65, respectively, among households with and without high school diplomas.

Bankruptcy history. In both years, Table 1 identifies former bankrupts as facing somewhat higher debt ratios than households without a history of personal bankruptcy. For example, former bankrupts carried 2005 debts totalling 13.4 months of income, compared with 11.3 among other households.

Home ownership. Homeowners reported higher debt ratios than renters, largely due to mortgages. The difference is much more pronounced when we focus on the debt-income ratio only. In 2005, the average debt-income ratio among homeowners was nearly four times that among renters, while the average debt-asset ratio was only 1.07 times as large. The difference arises due to the fact that the average homeowner has considerably more assets on account of real estate holdings. In 2005, homeowners averaged 8.75 times as much asset holdings as renters.

Employment. The data on home ownership from Table 1 highlight the potential for the debt-income and debt-asset ratios to differ in their assessment of a group's financial burdens. In this regard, note also that small business owners faced higher debt-income ratios than employees in both 1999 and 2005, while employees carried greater debts relative to assets. This is because asset holdings were much larger among small business owners, due to their investments in business equity. For example, in real terms, the average self-employed household had assets in 2005 totalling more than 2.5 times the average among workers.

3.2.1 Supplementary measures of the household debt burden

We next use data on the mortgage service ratio to supplement our analysis. While Chart 2 suggests that households in the bottom 80 per cent of the income distribution tend to face greater debts relative to income, Chart 4, which reports mortgage service ratios for mortgage holders in each income quintile, identifies homeowners in the bottom 20 per cent as facing particularly heavy burdens on income.[7] At 0.72, the 2005 mortgage service ratio in the first quintile is more than 2.5 times the average, with short-term mortgage obligations consuming almost nine months' worth of income.[8] In contrast, the payment-to-balance ratio, also reported in Chart 4, has a relatively flat income profile. A small decline in the payment-to-balance ratio is evident over time across all income quintiles, and is likely in part the result of falling mortgage rates, which are shown in Chart 5.

We also use data on alternative indicators of financial stress to corroborate our assessment as to which households bear greater burdens. These indicators are considered in Chart 6, which reports their prevalence across various age groups. The dark lines represent "behind payment" problems – that is, instances in which the household is late on bills, rent, or mortgage payments.[9] The lighter lines represent instances in which debts exceed assets on a market value basis. That these indicators are more common among younger households is consistent with our finding in Chart 1 that younger households face higher debt ratios.

4 Composition of Household Debt

In section 3, we reported broad movements in household debts, assets, and income to explain changes in the debt-income and debt-asset ratios over time. In this section, we consider debt in greater detail, with particular attention to its composition across five categories: mortgages, HELOCs, credit cards, vehicle loans, and other debts. As mentioned earlier, these categories are defined in section B of the appendix. Sections 5 and 6 will take a similar approach to assets and income, respectively.

Mortgages. Table 2 shows that the proportion of total debt for which mortgages account fell across nearly all age groups, while Table 3 gives similar results for all household types defined in terms of

[7] Though Chart 4 focuses only on households with mortgages – and thus only on homeowners – the threshold income levels separating quintiles are the same as in Chart 2.

[8] A single outlier reporting very negative income was removed from the 2005 data when calculating the average mortgage service ratio for the bottom quintile.

[9] More specifically, respondents are asked to report a "behind payment" problem if they have fallen behind on any of these obligations for two months or more over the past year.

employment, education, and other important variables. However, no group reported an absolute drop in their mortgage balances – in fact, given how large these positions were for most households, several groups reported substantial real dollar growth in their mortgage debts despite a falling share in total owings. This is particularly true in the 31–45 age range, where mortgages made substantial contributions to the rising debt-income ratios highlighted in section 3. For example, in the 36–40 age bracket, balances in this category grew from $42,818 to $69,428, a 62.15 per cent increase.

These increases may have been driven by falling mortgage rates, which are shown in Chart 5 from 1990 through 2007. Rising housing prices, also shown in Chart 5, would have played a similar role, in that would-be homeowners had to take out larger loans, while some homeowners decided to leverage appreciation into second mortgages.[10] Strength in real estate markets likely also contributed to growth in HELOCs. In this regard, it is important to note that the total share of debt tied up in contracts backed by real estate has held relatively constant over the 1999–2005 period, despite a drop in the mortgage share itself: HELOCs and mortgages together accounted for 80.4 per cent of 1999 debts, and 80.7 per cent of 2005 debts.

It is also important to note that mortgages, despite the drop in their share of total owings, remained by far the most important liability on the average household's balance sheet. Except for renters, all the household groups considered in Table 3 had at least half their debts tied up in mortgages in both 1999 and 2005. Mortgages represented more than two-thirds of household debt in the 26–65 age range and in the top four quintiles of the wealth distribution, according to Table 2 and Chart 7. Mortgages accounted for a considerably smaller share of debt among single households, non-working households, households without high school diplomas, and those living in the bottom wealth quintile.

Home equity lines of credit. HELOCs have gained substantially in popularity. Their share in total debt nearly doubled, on average, rising from 2.9 per cent in 1999 to 5.4 per cent in 2005. The years 1999 through 2005 saw at least some increase in every age group and wealth quintile, as shown in Table 2 and Chart 7, respectively. Growth was particularly strong in age groups 50 and up, almost all of which saw their debt share in HELOCs double. The fact that debt shares in mortgages fell for these age groups suggests that, when borrowing against their homes, they may have preferred HELOCs – which offer superior liquidity and flexibility – over second and third mortgages. Table 3 also highlights doubling in the HELOC share among non-working households and small business owners, quadrupling among households without high school diplomas, and a sixfold increase among former bankrupts. For these groups, HELOCs may represent opportunities to refinance more costly

[10]Chart 5 includes the monthly national new-housing price index produced by Statistics Canada.

liabilities or to overcome financial constraints.

Credit cards. This category also saw its share in total debt grow from 1999 through 2005. Gains were concentrated among older households. For example, Table 2 finds that credit card debts doubled from 5.0 per cent to 10.2 per cent of total owings among households over 65. According to Table 3, there were also gains among single households, homeowners, and the self-employed. The shift towards credit card debt also contributed to a more general increase in the level of unsecured borrowing among households. Chart 8 shows that the share in total debt for which unsecured contracts account has grown recently, particularly among wealth-poor groups.

5 Composition of Household Assets

In section 3, we documented a 25.6 per cent increase in the average household's asset holdings to explain the fact that debt-asset ratios rose less dramatically than debt-income ratios from 1999 through 2005. These years also saw some important changes in the composition of asset holdings, which we herein consider more thoroughly. The five categories across which we divide household assets are defined in section B of the appendix.

Real estate. Over the 1999–2005 period, the most important change in household assets was a dramatic increase in the portfolio weight assigned to real estate, likely driven by the strong house prices shown in Chart 5 and highlighted in section 4. The average share of real estate holdings in total assets rose from 37.3 per cent to 41.6 per cent, as Table 4 shows. Increases were evident across all age brackets and wealth quintiles, and across all the household groups considered in Table 5, except for renters. Increases were particularly pronounced in the 31–45 age range, where new homeowners are concentrated and the average portfolio share in real estate rose from 43.5 per cent to 55.8 per cent. Table 5 shows that the portfolio share also grew among former bankrupts and households without high school diplomas. Chart 9 shows signs of growth in the bottom 20 per cent of the wealth distribution as well.[11]

These changes in the composition of asset holdings have reinforced the most important feature of the average household portfolio – namely, that the vast majority of investments were tied up in real estate. Real estate was the largest asset on balance sheets in all wealth quintiles, as Chart 9 shows, and across all household types, except for renters. From Table 4, we see that real estate accounted

[11] In Chart 9, the first wealth quintile's average 1999 positions in the real estate, retirement, financial, vehicle, and "other" categories exceed 100 per cent of asset holdings because the business equity position is negative.

for more than half of the average household's holdings in all age brackets under 51. To contrast with mortgages, which were the largest debt facing most households, we note that the average share of assets for which real estate accounted was much smaller than the average share of liabilities for which mortgages accounted (41.6 per cent versus 75.3 per cent in 2005) – that is, the average household had debts concentrated in mortgages to a much greater extent than its holdings were concentrated in housing.

Retirement and financial assets. Increases in the proportion of assets for which real estate accounts were offset by reductions in the portfolio shares assigned to retirement assets. The average share was 31.4 per cent in 1999 and 29.6 per cent in 2005, with reductions reported in all wealth quintiles and most age groups. Reductions were quite pronounced among households under age 40. For example, Table 4 indicates that this share fell from 21.6 per cent to 14.4 per cent in the 31–40 range. Table 5 provides evidence of large drops among small business owners and married couples, while Chart 9 provides evidence of a decline in the first wealth quintile, where retirement assets went from 11.3 per cent of total holdings in 1999 to 8.8 per cent in 2005.

As with retirement assets, financial assets saw their portfolio shares drop. The average share fell from 12.0 per cent in 1999 to 10.3 per cent in 2005, with drops evident in most wealth quintiles and age brackets. Shifts out of these assets were most pronounced among single households, former bankrupts, and households at the bottom of the net worth distribution, with shares falling from 11.1 per cent to 8.3 per cent in the first wealth quintile. Reductions were also notable in age brackets over 45. For example, these assets accounted for 11.5 per cent of 1999 holdings in the 51–60 age range, and for 8.0 per cent in 2005.

Retirement assets were the second largest asset on household balance sheets in both years, with an average portfolio share of around 29.6 per cent in 2005, compared with 41.6 per cent for real estate. Financial assets were the third largest, at 10.3 per cent. Portfolio shares in retirement and financial assets tended to rise markedly with age and wealth. For example, the retirement asset share was above 35 per cent for households over 50 in 2005, and thus more than three times the average. The share was 31.8 per cent in the top wealth quintile, about 1.7 times the average across the remaining 80 per cent of households.

Business equity. Compared with the aforementioned asset categories, positions in business equity were quite small. They were notable only among the self-employed, whose 2005 portfolio share in these assets was 34.9 per cent (more than eight times the share among workers), and among married couples, for whom business equity accounted for 12.1 per cent of 2005 holdings, compared with 4.1

per cent among singles. A married couple's willingness to invest in this risky asset category may have stemmed from within-household risk sharing. In contrast to these couples, small business owners had small positions in financial and retirement assets. This could be due to borrowing constraints that prevented business owners from securing loans to finance *both* business and retirement investments.

6 Composition of Household Income

Despite the increase in average asset holdings, household income was relatively stagnant over the 1999–2005 period. Rising house prices, shown in Chart 5, likely also played a role by tying up a greater share of household capital in an asset that does not generate observable income. The years 1999 through 2005 also saw shifts in the composition of household income, on which we next focus. As mentioned earlier, the categories across which we divide household income are defined in section B of the appendix.

Earnings from labour. Table 6 provides strong evidence of a shift out of wages and salaries. The average share in household income for which these sources account fell slightly, from 71.2 per cent to 69.1 per cent. Chart 10 shows that reductions were concentrated in the top 60 per cent of the distribution, while Table 7 identifies non-working households and households without high school diplomas as having experienced pronounced shifts out of labour income. For example, non-working households saw labour sources' share in total income fall from 25.3 per cent in 1999 to 20.7 per cent in 2005.

Despite these changes over the 1999–2005 period, wages and salaries remained the most important source of income for most households in 2005. They accounted for more than half the income accruing to households under age 60, according to Table 6, though their share tended to fall with age. They also accounted for more than 60 per cent of total income for all household types except small business owners and non-working households. The top four income quintiles in Chart 10 reported wage and salary shares around 50 per cent or higher.

Capital income and transfers. The share of total income for which capital sources account grew substantially, rising from 9.4 per cent to 11.4 per cent, on average. The average transfer share fell slightly from 12.3 per cent to 11.5 per cent. As Tables 6 and 7 show, rising capital income shares were evident across all age groups and all household types, with strong increases in the youngest age bracket and among small business owners and the college educated.

Table 6 identifies transfers as the average household's second most important income source after labour earnings. In Chart 10, their share in household income shows a strong, negative relationship with total income, falling from 61.0 per cent in the first 2005 quintile to 32.7 per cent in the second, with an average of 9.9 per cent across the remaining 60 per cent of households.

Table 7 shows that transfer shares were also high among non-workers (36.7 per cent in 2005, more than six times the share among workers) and households without high school educations (34.3 per cent versus 10.4 per cent for high school graduates). Capital income, the third most important income category, also had a high share in these demographics, with non-workers and households without secondary school diplomas deriving 37.8 per cent and 17.0 per cent of total income from capital sources in 2005, compared with 3.0 per cent and 10.1 per cent among employees and high school graduates, respectively.

Both capital income and transfers also had high shares among households over 59. For example, in 2005, households in the 66-and-up range received 46.2 per cent of total income from capital sources and 44.9 per cent from transfers, both about four times the average.

7 Policy Discussion

From a policy perspective, the most important development of the 1999–2005 period was the dramatic increase in debt relative to income in the lower-income quintiles. The debt-income ratio in the bottom quintile rose from 0.90 to 1.07, on average, while the average mortgage service ratio was high, around 0.7 in both years. It is thus likely that these households became more sensitive to rising rates and negative income shocks. With large shares of income accruing from labour and transfers, shocks to these income sources deserve special attention.

High and rising debt-asset ratios among the poor compound the problem. In the first wealth quintile, debts rose from 107.9 per cent of assets in 1999 to 117.2 per cent in 2005. In contrast, the 2005 average among richer households was 26.2 per cent. For creditors lending to households in the first wealth quintile, the increase in the debt-asset ratio suggests some deterioration in collateral coverage. Furthermore, high debt-asset ratios suggest that poor debtors who fail to meet their obligations out of income may have trouble making up the difference through asset liquidation.

Debt-income ratios were also high and rising among small business owners and former bankrupts. In 2005, average owings exceeded income for both groups. These changes imply greater sensitivity

to income shocks and shifts in interest rates. Sensitivity is heightened for the self-employed, whose portfolios are relatively undiversified, with large and growing shares of assets and income tied to business equity. Business equity is the riskiest of the five asset categories.

The 1999–2005 period saw the share of holdings for which real estate accounts grow substantially, particularly among the middle class, with potential implications for financial stability and monetary policy. The average household is highly sensitive to shifts in the housing market. With real estate backing sizable positions in mortgages and HELOCs, weak housing prices could leave many households in a situation where their assets no longer fully back their debts.

There are obvious parallels with the recent subprime experience in the United States, where the wider financial system suffered as mortgage defaults built up on creditors' balance sheets. However, important differences between the Canadian and American mortgage markets must be noted. First of all, subprime packages account for a much smaller portion of the Canadian market (5 per cent versus 22 per cent of new mortgages in 2006, according to Barker et al. 2007). Furthermore, mandatory mortgage loan insurance mitigates the effects of default on financial institutions (Day 2005). Also, Day (2005) reports that the average subprime borrower in Canada presents a better credit risk and is less likely to use non-traditional products such as interest-only loans.

To highlight the potential consequences of these changes and others, we briefly discuss two scenarios: (i) a rise in interest rates, and (ii) a drop in house prices.

Interest rates rise. When rates rise, the cost of borrowing rises and pressures mount on households with high debt-income and debt service ratios. A lack of (liquid) assets exacerbates the problem, since these assets could otherwise be sold off to avoid refinancing at higher rates, or offered as collateral to secure financing at a more reasonable rate. Households in the bottom income quintile, with high and rising debt-income and debt-asset ratios, are more likely to find themselves in this position. The fact that 2005 mortgage obligations totalled 70 per cent of total income among homeowners in the first income quintile suggests that some of these households may have had trouble keeping up even at 2005 rates.

Relatively high debt-income ratios also identify the self-employed as a concern. For example, in 2005, they reported a debt-income ratio of 1.33 – compared with 1.01 among workers and 0.50 among non-working households – up from 1.05 in 1999. The self-employed also have large asset and income shares tied to risky business equity, which is likely sensitive to economic conditions and could suffer on higher interest rates.

Older households are also exposed to rising interest rates, though via a different channel: portfolios for these households are heavy with retirement and financial assets whose returns are probably interest rate sensitive. Income from these sources also accounts for a large part of total income for older households, whose net worth and income would be expected to vary with the interest rate. This is likely also true for households in the top wealth quintile, where the retirement and financial asset shares are relatively high, and in the top income quintile, where the capital income share is high.

Housing prices fall. The fact that real estate's asset share was high and rising, particularly in the 31–45 age bracket, suggests that household balance sheets would suffer on falling housing prices. For example, in 2005, real estate accounted for 55.82 per cent of their asset holdings, 1.34 times the average and up from 43.53 per cent in 1999. Falling house prices should cause debt-asset ratios to grow. A reduction in the collateral base would likely prevent many households from taking advantage of the mortgages and HELOCs that have recently proven so popular, leaving them more financially constrained.

During a period when housing prices are weak, policy-makers should be alert to developments that could cause households to fall behind on debt service, particularly mortgage payments. These developments are more likely to trigger default as home equity shrinks. We thus call for attention to factors that could cause income to suffer or interest rates to rise following a drop in housing prices. Attention to forces that could put upward pressure on mortgage rates, in particular, is needed. With high debt shares in mortgages and HELOCs and high asset shares in real estate, middle-class households are particularly vulnerable to these effects. Married couples are likely to be impacted as well. Furthermore, if real estate has been offered as collateral, then the average creditor should expect to recover a smaller portion of dues following default when the housing market is soft.

8 Conclusions

Using SFS data on household balance sheets and income, we have identified several developments over the 1999–2005 period with potential implications for financial stability and monetary policy. These include dramatic growth in the debt-income ratio among households in the first income quintile, who are likely more sensitive to rising interest rates and negative income shocks, and a pronounced increase in debt relative to asset holdings for households in the bottom 20 per cent of the wealth distribution. We also note that portfolio shares in real estate have risen substantially, particularly among the middle-aged, whose real estate holdings grew 75.0 per cent. This indicates that household finances

have become more sensitive to the state of housing markets. More generally, we highlight a dramatic increase in debt-income ratios across all age groups and income quintiles, with the average ratio rising from 0.754 to 0.947. Growth in the debt-asset ratio was more modest due to strong housing prices and their effect on asset holdings, though increases were still notable among households under age 40 and those in the first wealth quintile, where average debts exceeded assets in both years. Rising debt ratios were largely due to a 49.8 per cent increase in mortgage balances among the middle-aged, a doubling in credit card debt among households over 55, and a fourfold increase in home equity lines of credit among small business owners and households without high school diplomas.

Finally, we emphasize that debt ratios vary considerably across household groups that differ in terms of wealth, income, employment, and other variables. Above-average ratios identify several groups as facing greater debt burdens. These groups include wealth- and income-poor households, former bankrupts, and small business owners, who have proven highly dependent on investments in risky business equity. Other at-risk groups include young households, among whom "behind payment" problems and instances of negative net worth are more common, and homeowners in the bottom income quintile, who devoted more than 70 per cent of their income to mortgage service.

References

Barker, W., J. Day, I. Kolet, and V. Traclet. 2007. "Recent developments in the U.S. subprime mortgage market and their impact on the Canadian financial system." *Bank of Canada Financial System Review* (June): 6–9.

Day, J. 2005. "The subprime mortgage market in Canada." *Bank of Canada Financial System Review* (December): 17–18.

Edelberg, W. and J. Fisher. 1997. "Household debt." *Chicago Fed Letter* No. 123 (November).

Faruqui, U. 2008. "Indebtedness and the Household Financial Health: An Examination of the Canadian Debt Service Ratio Distribution." Bank of Canada Working Paper No. 2008-46.

May, O., M. Tudela, and G. Young. 2004. "British household indebtedness and financial stress: a household-level picture." *Bank of England Quarterly Bulletin* (Winter): 414–28.

Meh, C.A. and Y. Terajima. 2008. "Inflation, Nominal Portfolios, and Wealth Redistribution in Canada." Bank of Canada Working Paper No. 2008-19.

Reserve Bank of Australia. 2003. "Household Debt: What the Data Show." *Reserve Bank of Australia Bulletin* (March).

Statistics Canada. 2003. "A Guide to Statistics Canada Pension and Wealth Surveys." Pensions and Wealth Surveys Section. Catalogue Number 13F0026MIE2003001 (February).

Table 1: **Debt Ratios by Household Type**

	Debt-income 1999	Debt-income 2005	Debt-asset 1999	Debt-asset 2005
Overall:	0.754	0.947	0.128	0.134
Employment status:				
Worker	0.818	1.006	0.181	0.199
Self-employed	1.049	1.332	0.112	0.116
Non-working	0.370	0.502	0.044	0.046
Education:				
No high school	0.534	0.650	0.090	0.080
High school	0.820	0.964	0.147	0.142
College	0.773	1.032	0.118	0.145
Marital status:				
Single	0.619	0.799	0.116	0.132
Married	0.800	0.996	0.130	0.135
Bankruptcy:				
Never	0.752	0.938	0.125	0.130
Ever	0.775	1.113	0.233	0.248
Principal residence:				
Owner	0.907	1.106	0.129	0.135
Renter	0.255	0.297	0.112	0.126

Table 2: **Debt and Its Composition by Age**

1999	Average	Mortgage	HELOC	Vehicle	Crdt crd	Other
Overall	$37,499	77.5%	2.9%	6.4%	3.1%	10.1%
Age group:						
≤25	18,650	59.4	2.0	9.6	3.8	25.2
26-30	44,053	75.5	1.0	7.9	3.3	12.3
31-35	53,758	82.2	1.4	6.2	2.9	7.3
36-40	52,537	81.5	1.7	5.4	3.0	8.4
41-45	51,799	81.0	2.9	5.2	3.0	7.9
46-50	51,481	75.2	4.7	6.3	3.0	10.8
51-55	46,753	75.6	3.9	6.1	2.6	11.8
56-60	31,755	74.8	3.9	6.6	3.3	11.4
61-65	20,735	72.4	6.4	8.1	4.1	9.0
≥66	6,038	68.5	7.8	8.2	5.0	10.5
2005 (in 1999 dollars)						
Overall	$49,778	75.3%	5.4%	6.1%	3.4%	9.9%
Age group:						
≤25	19,114	65.3	2.8	7.7	3.2	20.9
26-30	46,645	71.3	1.1	7.3	2.8	17.5
31-35	72,991	80.4	3.6	4.8	2.7	8.4
36-40	82,751	83.9	2.0	4.6	3.3	6.1
41-45	81,013	79.1	5.6	4.7	2.5	8.1
46-50	66,707	72.4	7.6	7.2	3.3	9.6
51-55	52,714	71.8	7.8	7.0	3.5	9.9
56-60	44,615	67.3	7.9	7.1	5.0	12.6
61-65	33,569	70.1	12.9	6.5	3.8	6.8
≥66	9,200	55.6	11.6	10.7	10.2	12.0

Table 3: **Debt and Its Composition by Household Type**

1999	Average	Mortgage	HELOC	Vehicle	Crdt crd	Other
Employment status:						
Worker	$48,207	78.3%	2.8%	6.6%	3.0%	9.3%
Self-employed	65,503	79.6	2.6	4.7	2.7	10.4
Non-working	11,363	68.6	3.3	7.7	4.8	15.6
Education:						
No high school	18,204	75.6	2.2	9.0	4.3	8.9
High school	39,981	78.2	2.4	6.8	3.3	9.3
College	57,883	77.0	4.1	4.2	2.2	12.5
Marital status:						
Single	18,593	71.0	2.4	6.6	4.4	15.6
Married	51,557	79.3	3.0	6.3	2.8	8.6
Bankruptcy:						
Never	37,699	77.7	3.0	6.4	3.1	9.9
Ever	33,758	73.1	0.6	6.3	4.1	16.0
Principal residence:						
Owner	57,166	82.2	3.1	5.3	2.2	7.2
Renter	7,537	22.9	0.4	18.4	13.1	45.2
2005 (in 1999 dollars)						
Employment status:						
Worker	$62,946	76.1%	4.7%	6.3%	3.2%	9.7%
Self-employed	91,886	77.5	6.9	4.5	3.0	8.1
Non-working	15,680	65.5	7.5	7.5	5.2	14.3
Education:						
No high school	19,759	61.8	8.5	10.2	4.6	14.9
High school	49,794	75.0	5.5	6.5	3.8	9.2
College	79,785	79.1	4.5	4.3	2.4	9.8
Marital status:						
Single	24,072	70.4	3.9	6.4	5.2	14.2
Married	69,397	76.6	5.8	6.0	2.9	8.7
Bankruptcy:						
Never	50,003	75.2	5.6	6.0	3.3	9.9
Ever	46,623	76.0	2.6	6.8	4.1	10.5
Principal residence:						
Owner	75,432	78.7	5.7	5.3	2.7	7.6
Renter	8,050	22.6	0.6	18.3	13.6	44.9

Table 4: **Assets and Their Composition by Age**

1999	Average	Financial	Retirement	Real estate	Bus equity	Other
Overall	$293,990	12.0%	31.4%	37.3%	9.5%	9.8%
Age group:						
≤25	57,403	7.5	10.5	49.6	13.5	18.9
26-30	115,002	7.9	15.1	53.6	4.9	18.5
31-35	187,284	7.1	19.1	46.2	11.9	15.7
36-40	228,601	7.8	23.7	44.2	11.7	12.6
41-45	316,632	7.3	24.6	40.3	16.0	11.8
46-50	399,563	10.5	31.7	35.4	12.5	9.9
51-55	461,961	12.7	35.7	35.6	6.5	9.5
56-60	499,333	10.1	39.0	31.1	12.0	7.8
61-65	469,439	13.8	43.9	29.6	5.3	7.4
≥66	332,264	20.4	35.4	33.1	4.2	6.9
2005 (in 1999 dollars)						
Overall	$371,174	10.3%	29.6%	41.6%	10.4%	8.0%
Age group:						
≤25	62,293	14.5	5.8	55.0	7.0	17.8
26-30	116,471	8.4	15.9	57.1	2.8	15.7
31-35	189,885	7.0	14.5	58.9	6.6	12.9
36-40	337,445	4.9	14.3	58.9	12.5	9.3
41-45	390,035	8.1	21.9	51.0	9.9	9.1
46-50	492,296	9.4	26.5	38.5	18.2	7.4
51-55	524,419	8.0	37.5	36.1	10.6	7.7
56-60	633,708	7.9	37.8	31.6	16.7	5.9
61-65	578,169	12.6	38.8	32.5	9.0	7.2
≥66	422,419	17.7	36.4	37.2	2.5	6.2

Table 5: **Assets and Their Composition by Household Type**

1999	Average	Financial	Retirement	Real estate	Bus equity	Other
Employment status:						
Worker	$267,002	9.4%	32.8%	40.4%	5.8%	11.6%
Self-employed	586,109	10.6	15.7	34.2	29.8	9.7
Non-working	260,647	17.1	38.6	33.3	2.9	8.1
Education:						
No high school	201,834	12.6	27.2	39.2	10.2	10.8
High school	272,748	9.9	30.5	39.0	9.5	11.1
College	492,180	14.8	34.9	33.0	8.9	8.4
Marital status:						
Single	160,118	16.9	30.4	36.6	5.3	10.8
Married	395,534	10.5	31.5	37.3	10.7	10.0
Bankruptcy:						
Never	301,927	12.1	31.5	37.3	9.4	9.7
Ever	144,975	8.6	27.7	38.3	11.3	14.1
Principal residence:						
Owner	442,764	11.1	30.6	39.9	9.4	9.0
Renter	67,327	21.1	39.4	11.4	9.9	18.2
2005 (in 1999 dollars)						
Employment status:						
Worker	$315,686	7.7%	32.5%	45.7%	4.1%	10.1%
Self-employed	792,736	10.0	12.7	36.4	34.9	6.0
Non-working	341,855	14.5	36.6	39.0	3.6	6.3
Education:						
No high school	247,279	10.5	25.4	46.1	10.0	7.9
High school	350,610	9.3	29.1	40.9	12.0	8.7
College	551,757	12.0	32.4	40.9	7.8	6.9
Marital status:						
Single	182,106	13.3	31.3	42.4	4.1	8.9
Married	515,476	9.5	29.1	41.4	12.1	7.8
Bankruptcy:						
Never	384,274	10.5	29.5	41.4	10.6	7.9
Ever	187,739	4.9	31.8	47.5	3.6	12.1
Principal residence:						
Owner	560,037	9.8	28.7	43.7	10.4	17.4
Renter	63,980	17.3	42.6	12.3	10.5	7.4

Table 6: **Income and Its Composition by Age**

1999	Average	Labour	Capital	Business	Transfer	Other
Overall	$49,766	71.2%	9.4%	5.4%	12.3%	1.7%
Age group:						
≤25	22,178	84.2	1.4	1.5	11.8	1.1
26-30	41,605	86.0	1.1	3.3	8.8	0.8
31-35	52,960	84.2	1.8	4.8	8.4	0.8
36-40	54,297	82.4	1.8	6.4	7.8	1.6
41-45	60,469	83.1	2.6	6.3	6.3	1.7
46-50	67,233	84.4	2.5	6.3	5.4	1.4
51-55	65,926	79.1	6.0	7.3	5.2	2.4
56-60	58,707	67.8	13.7	7.6	8.0	2.9
61-65	44,257	41.9	30.5	6.2	18.1	3.3
≥66	34,397	9.4	41.8	1.8	45.5	1.5
2005 (in 1999 dollars)						
Overall	$52,559	69.1%	11.4%	6.1%	11.5%	1.7%
Age group:						
≤25	23,328	79.3	3.5	4.2	10.4	2.6
26-30	40,952	86.1	0.9	3.2	7.9	1.9
31-35	54,197	80.8	2.6	7.6	7.9	1.1
36-40	60,420	84.4	2.4	4.9	7.1	1.1
41-45	69,174	83.4	2.9	6.1	6.3	1.4
46-50	66,971	79.1	4.1	9.5	6.0	1.3
51-55	67,387	80.6	5.0	7.0	4.8	2.7
56-60	61,373	63.8	18.5	8.5	7.4	1.8
61-65	52,647	43.3	35.7	4.5	13.0	3.5
≥66	35,534	4.2	46.2	3.2	44.9	1.5

Table 7: **Income and Its Composition by Household Type**

1999	Average	Labour	Capital	Business	Transfer	Other
Employment status:						
Worker	$58,915	89.5%	2.5%	1.6%	5.4%	1.0%
Self-employed	62,470	48.0	10.1	33.4	6.0	2.5
Non-working	30,720	25.3	31.6	1.6	38.2	3.3
Education:						
No high school	34,110	51.0	14.4	3.8	29.0	1.8
High school	48,773	74.8	8.3	4.5	10.6	1.8
College	74,912	77.6	8.4	8.0	4.5	1.5
Marital status:						
Single	30,046	63.0	11.5	4.0	19.5	2.0
Married	64,429	74.1	8.7	5.9	9.7	1.6
Bankruptcy:						
Never	50,098	71.2	9.7	5.2	12.2	1.7
Ever	43,532	72.4	3.2	8.7	13.7	2.0
Principal residence:						
Owner	63,039	71.7	10.7	5.8	10.2	1.6
Renter	29,546	69.8	5.4	4.0	19.0	1.8
2005 (in 1999 dollars)						
Employment status:						
Worker	$62,582	88.6%	3.0%	2.2%	5.1%	1.2%
Self-employed	68,969	42.8	14.4	34.3	5.7	2.7
Non-working	31,246	20.7	37.8	1.8	36.7	3.0
Education:						
No high school	30,380	44.6	17.0	2.5	34.3	1.5
High school	51,627	71.1	10.1	6.7	10.4	1.7
College	77,325	75.2	11.7	6.5	4.7	2.0
Marital status:						
Single	30,140	58.9	15.2	4.7	18.7	2.5
Married	69,670	72.5	10.2	6.6	9.2	1.5
Bankruptcy:						
Never	53,320	68.8	11.9	6.2	11.3	1.8
Ever	41,908	74.4	4.2	5.4	15.1	1.0
Principal residence:						
Owner	68,211	69.8	12.7	6.5	9.4	2.4
Renter	27,101	66.3	6.3	4.9	20.2	1.6

Chart 1: **Debt-Income and Debt-Asset Ratios by Age**

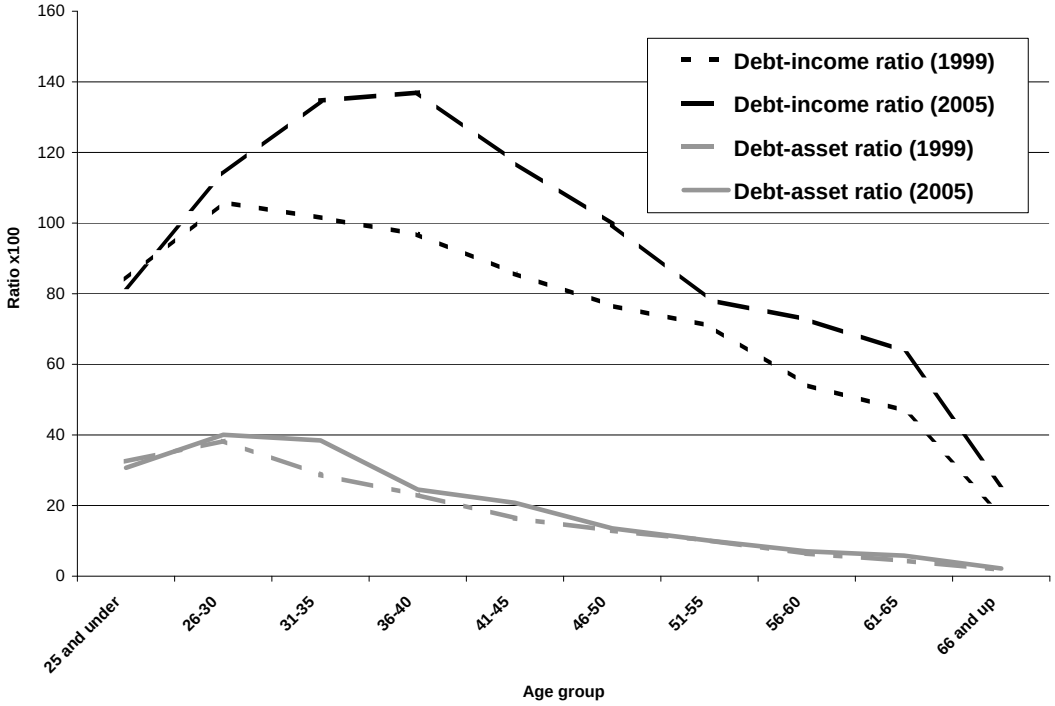


Chart 2: **Debt-Income Ratios by Income Quintile**

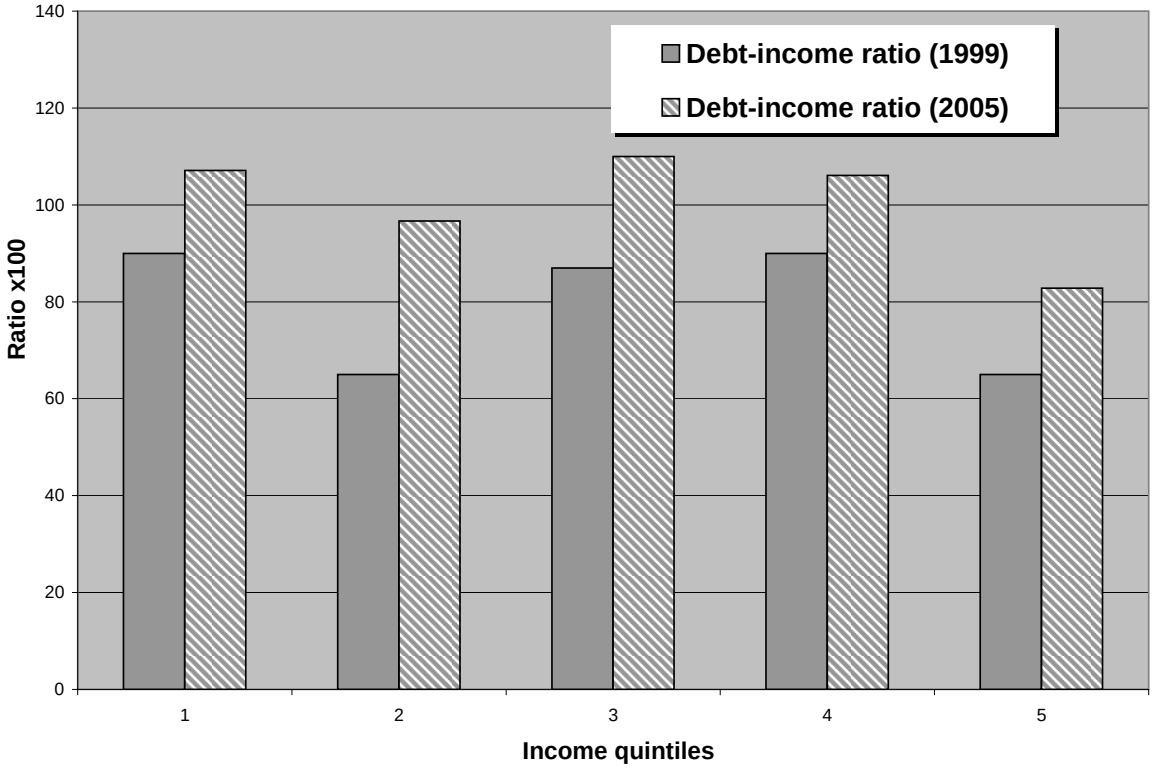


Chart 3: **Debt-Asset Ratios by Wealth Quintile**

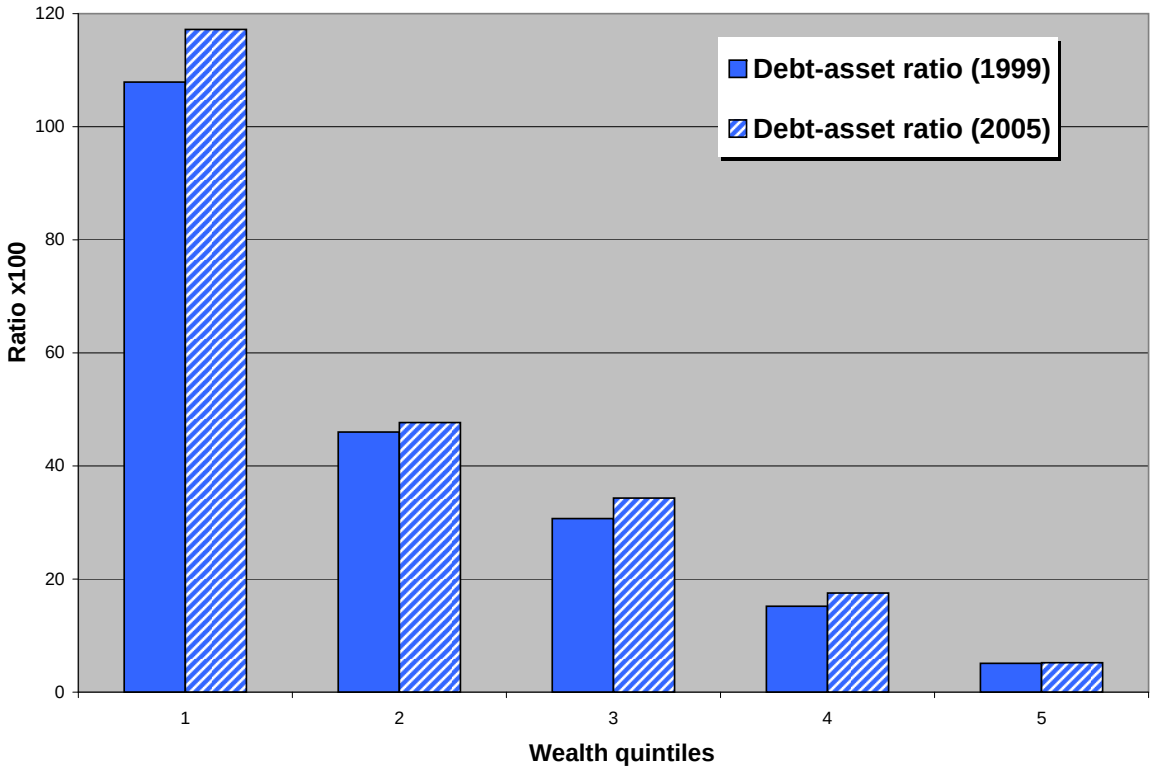


Chart 4: **Mortgage Debt Ratios by Income Quintile**

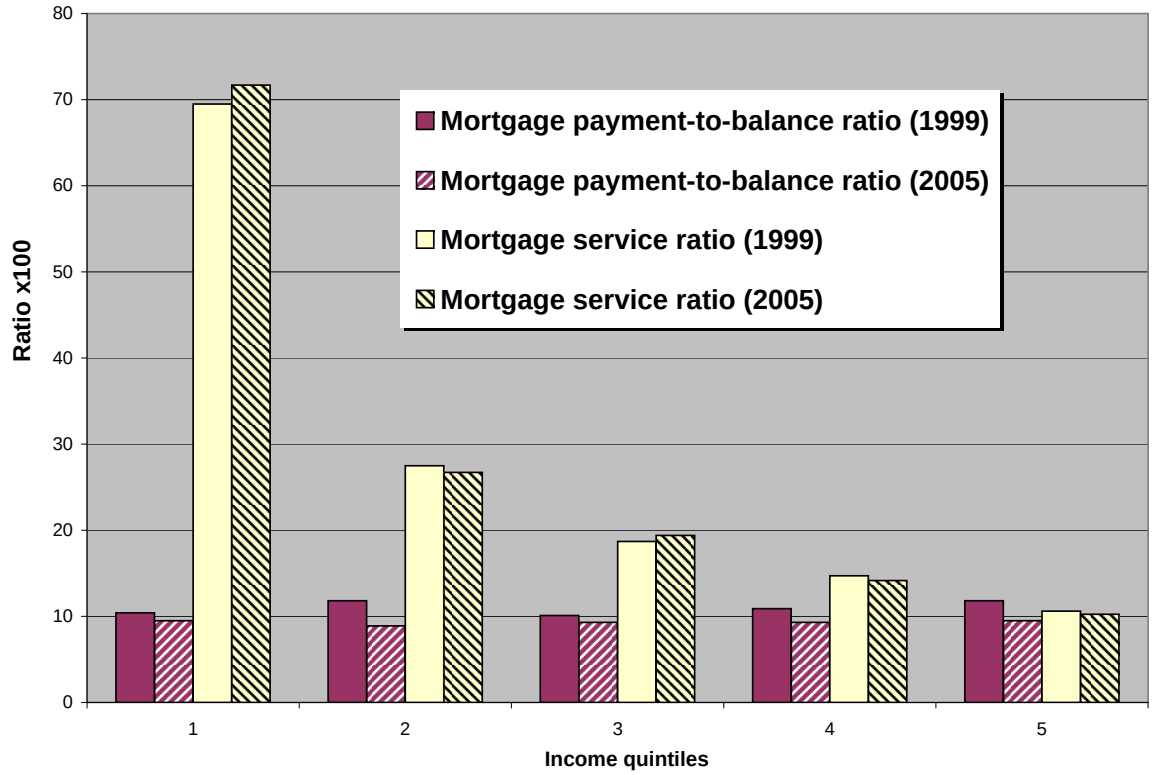
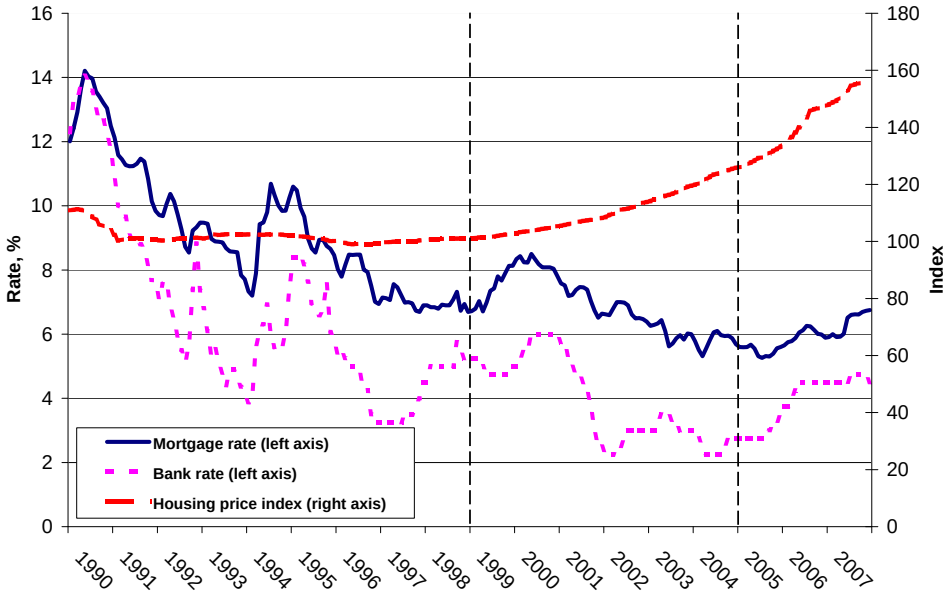


Chart 5: **Mortgage Rate, Bank Rate, and Housing Prices**



Notes: Mortgage rate: CANSIM vector 122497; Bank rate: V122530; Housing price index: V21148160.
Source: Statistics Canada.

Chart 6: **Indicators of Household Financial Stress**

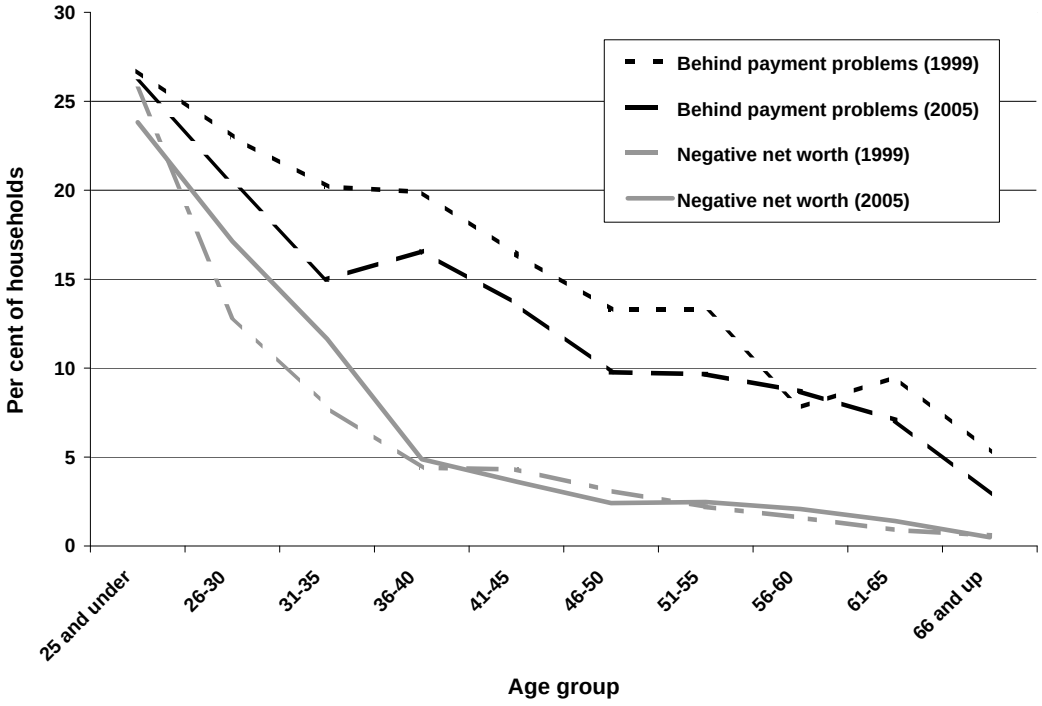


Chart 7: **Composition of Debt by Wealth Quintile**

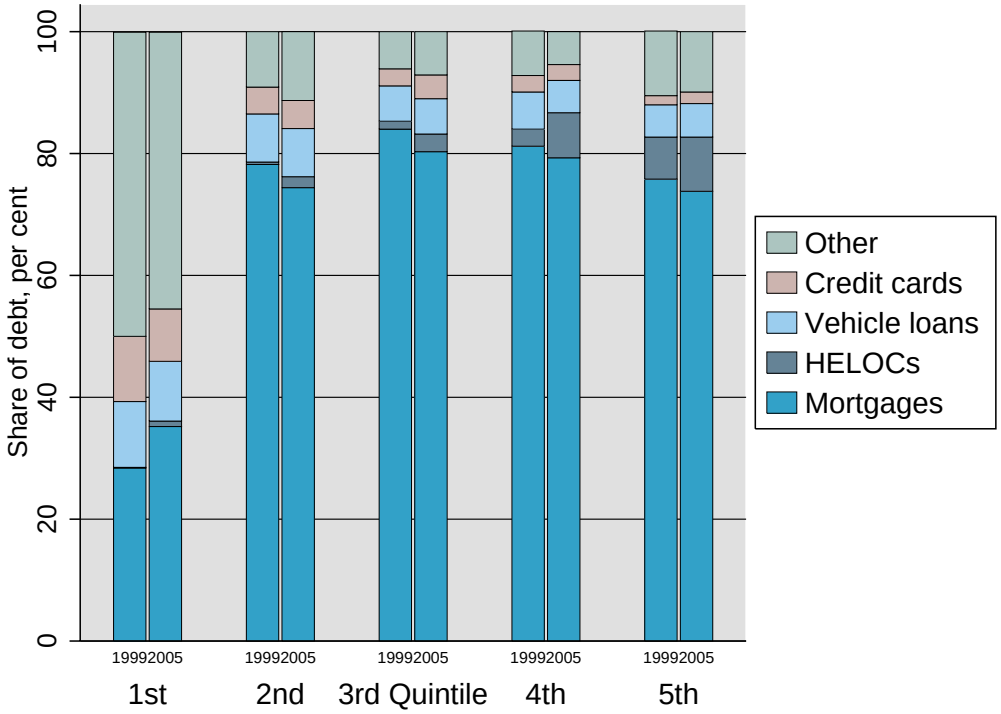


Chart 8: **Secured and Unsecured Debt by Wealth Quintile**

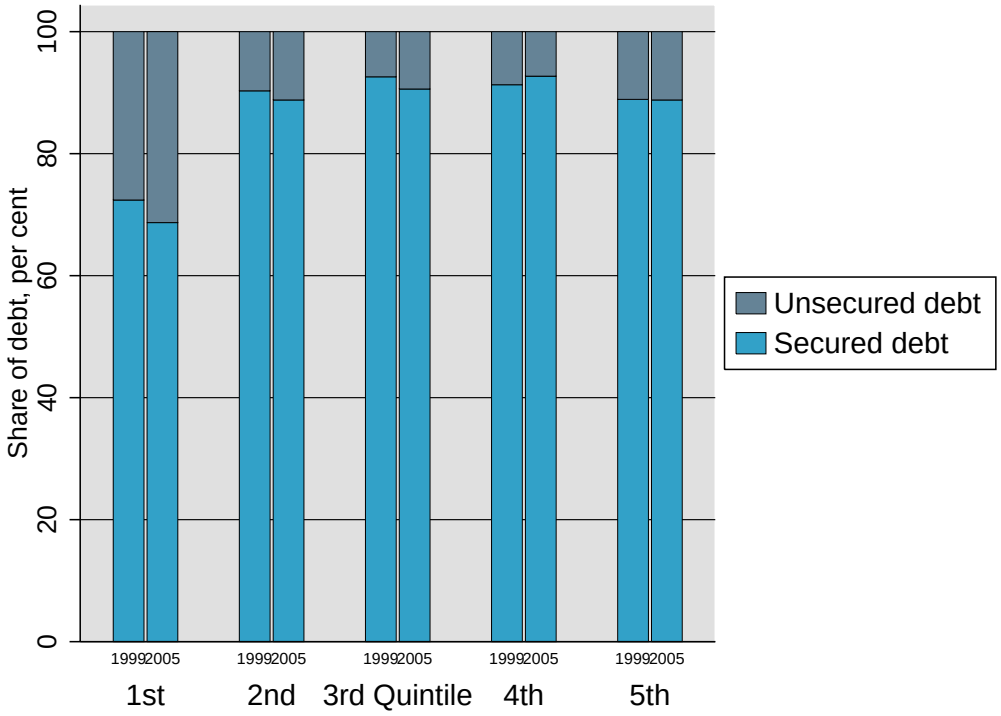


Chart 9: **Composition of Assets by Wealth Quintile**

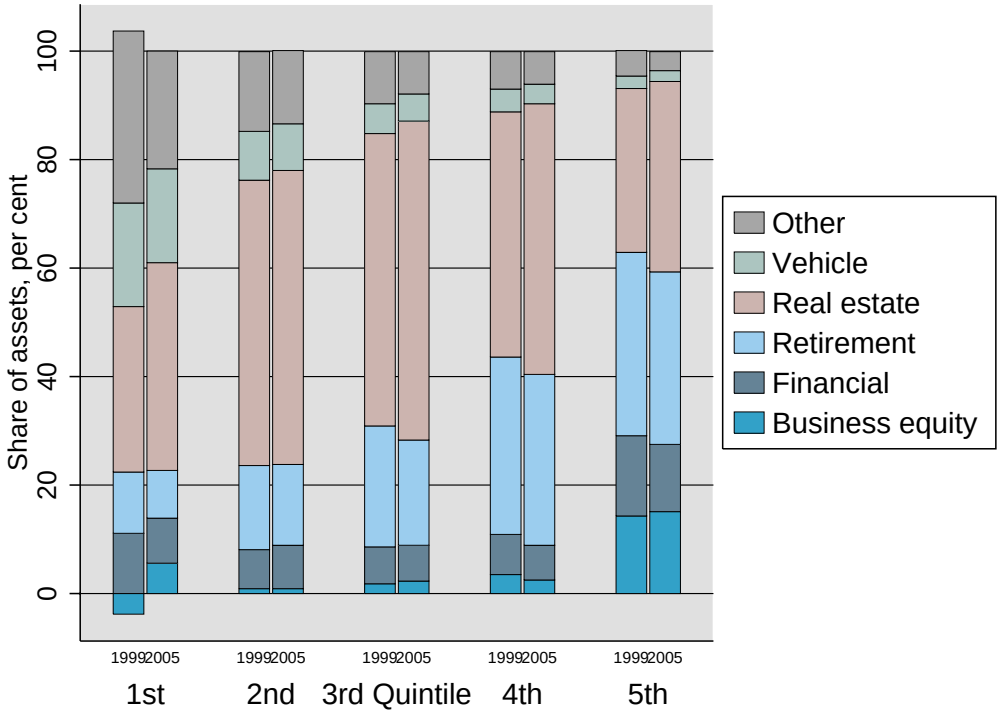
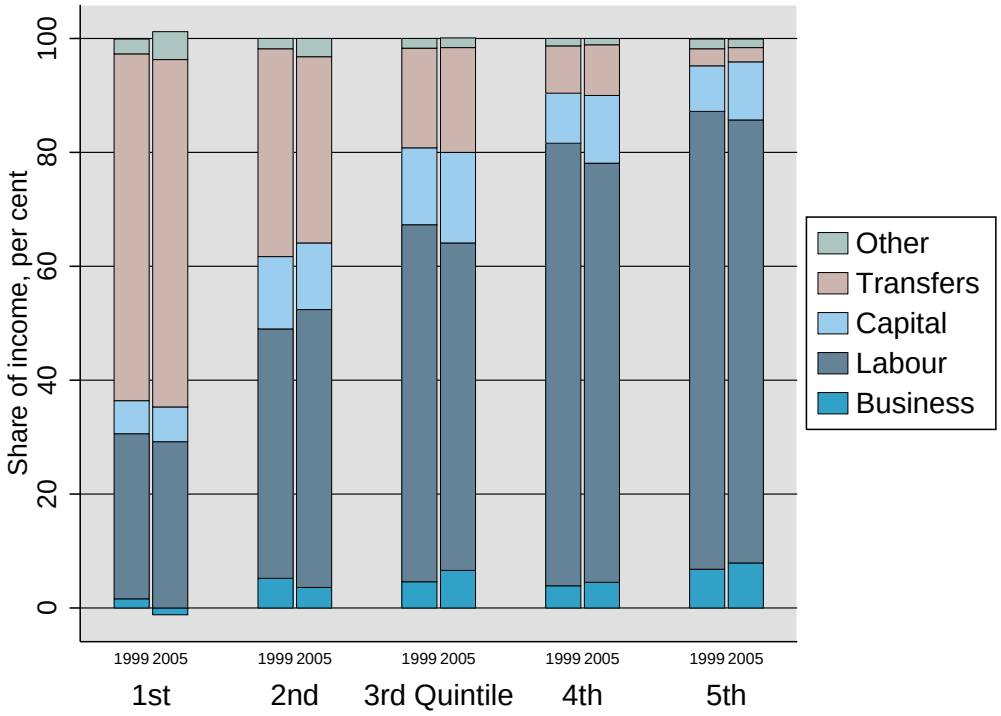


Chart 10: **Sources of Income by Income Quintile**



Appendix

A Definition of variables

Assets A household's total asset position is the sum of its financial and retirement assets, real estate, equity in businesses, and other miscellaneous holdings.

Bankruptcy history If any member of the family has ever declared bankruptcy, the household is assigned to the *ever* category. All other households remain in the *never* category.

Debt The household debts that we consider in this paper are mortgages, home equity lines of credit, vehicle loans, credit card debts, and other miscellaneous debts. We distinguish between secured and unsecured debts.

Education When a household head has no degree, certificate, or diploma, the household is placed in the *no high school* category, whereas households in the *high school* category have some certification below the bachelor's degree. Community college graduates are in the *high school* group. Households in the *college* category have at least a bachelor's degree. Therefore, in both the *high school* and the *college* categories, the household head will generally have a secondary school diploma. When the household head has attended college but failed to graduate, the household is assigned to the *high school* category.

Employment status *Workers* or *employed households* have household heads who are currently working for wages, salaries, tips, or commissions. *Self-employed households* or *small business owners* are working in a family business. *Non-working households* are not currently working. The latter category includes both the unemployed and those who are not in the labour force; e.g., retirees. The SFS does not have a variable that directly identifies retired respondents in both waves.

Home ownership If anyone in the household owns the principal residence, the household is assigned to the *owner* category. Otherwise, households are in the *renter* category, which includes anyone occupying the principal residence on a rent-free basis.

Households The households in this paper correspond to individuals living alone and "economic families." In the SFS, an economic family is a group of two or more persons who live in the same dwelling and are related by blood, marriage, common-law status, or adoption. The head of the household is the major income earner in the economic family. Most household characteristics are based on the household head's SFS responses.

Income We focus on pre-tax income, including transfers from government and private parties. We include wages and salaries, capital income, business income, transfers, and earnings from other sources. Income quintiles are identified on the basis of pre-tax income.

Marital status If the household head has never married or if the head is separated, divorced, or widowed, then the household is considered *single*. If the household head is married or living in a common-law relationship, then the household is assigned to the *married* category.

Wealth In this paper, wealth refers to net worth. Net worth is the difference in market value between total assets and total debts. Wealth quintiles are identified on the basis of net worth.

B Components of debts, assets, and income

- Debts:
  - Mortgage: mortgages on the principal residence and on other real estate holdings
  - HELOC: lines of credit against equity in the principal residence and in other real estate holdings
  - Vehicle: any loans collateralized by a car
  - Credit card: debt owed on a credit card
  - Other debts: deferred payments/instalment plans, student loans, other lines of credit, loans from other financial institutions, and money owed to other parties
  - Secured debt: mortgages, student loans, vehicle loans, and HELOCs
  - Unsecured debt: all debts that are not secured; credit card debts and other lines of credit are the major components

- Assets:
  - Financial assets: chequing and savings accounts, term deposits, mutual funds, savings bonds, stocks and shares of private companies, RESPs (registered educational savings plans), home ownership savings plans, treasury bills, money held in trust, mortgage-backed securities, deferred profit-sharing plans, and annuities
  - Retirement assets: RRSPs (registered retirement savings plans), LIRAs (locked-in retirement accounts), RRIFs (registered retirement income funds), and employer pension plans
  - Real estate: the value of all real estate, including the principal residence
  - Business equity: the market value of the household's equity in any businesses operated by the economic family
  - Other assets: all remaining assets – mainly vehicles, collectibles, furniture, contents of the principal residence, and copyrights
- Income:
  - Labour income: wages and salaries before deductions, including military pay and allowances
  - Capital income: dividends, interest, other investment income, rental income, private pension income, and net partnership income
  - Business income: income from businesses that the household operates, including farm businesses; wages from the family business are treated as labour income
  - Transfer income: all government transfers – mainly old-age security, employment insurance, worker's compensation, and GST credits; transfers from private parties are assigned to the "Other income" category
  - Other income: all income that does not fall into one of the above four categories